New Frontiers of Educational Research

Mang Li
Yong Zhao *Editors*

Exploring Learning & Teaching in Higher Education

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Preface

University teachers have four main responsibilities. The first responsibility is teaching, which includes spreading knowledge, educating students, and releasing them from suffering; the second is researching, which includes creating knowledge, exploring the unknown, cultivating their mind, improving, and perfecting themselves; the third is doing administrative work inside the university, which means serving and devoting themselves to other people; and the fourth is serving society, which refers to fulfilling social missions and contributing to the development of society.

Therefore, what is the most central or important responsibility of the university teacher? The answer is no doubt teaching, or cultivating talents. However, in reality, the teaching techniques in universities have long been neglected by university administrations. And research in teaching methodology should no longer be completely ignored. Generally speaking, the determining element of the success of teaching is in the attention to detail. Some teachers prepare thousands of pages of PowerPoint presentations, and read them for a total of 60 teaching hours, while students are required to merely sit and listen. Then it is not surprising that students would go to sleep or be daydreaming in class. Actually, even a donkey would fall asleep listening to their dull teaching. And most students are able to pass the final exam by studying only what the teacher tells them will be covered in the exam.

Some critics say that if university teachers do not know much and rarely research, what could they teach? That's quite true. They have nothing left if they do not have anything to teach. However, there are learned teachers who do not know how to teach who will also bungle the job. It is far from enough to know a lot about the course. Teaching methodology plays an important role in university teaching. Therefore, "what to teach" and "how to teach" are both serious issues. A university teacher should have something to teach and teach well. Other critics say that university students gain knowledge not from teachers teaching but from their own learning. Yet how could they learn without teachers teaching? As the Chinese saying goes, "teachers open the door, but you must enter by yourself." Here it is the teacher's job to "open the door." People are likely to neglect unconsciously the role of "opening the door" by just focusing on learning.

Basic rules for university teaching do exist. Those learned scholars with rich research findings would not be qualified for teaching jobs in universities if they did not follow these rules. For a long time large numbers of university teachers were allowed to teach without being equipped with university teaching theories and skills.

For whom are the universities? For whom are the classrooms? The only answer is the students. Learning is a process of self-renewal, and a state of active and animated development. Thus teachers are to help students' self-renewal and enter the state of development. They are helpers. In reality, while some teachers can help, others cannot, and even make things much worse.

Comparing university classes with K-12 classes, we find something really interesting. Teachers in K-12 education may burst into anger when they find students sleeping in class, or at least feel worried, and immediately try to stop them sleeping. Such a response shows dignity, responsibility, and professional ethics of the K-12 teachers. However, in a similar situation in university, when finding most students not listening, university teachers often turn a blind eye to it, and go on teaching from the book, completely ignoring the students' existence. This shows such an irresponsible attitude towards work which will lead to their loss of self-esteem. In addition, when faced with teaching problems, some university teachers may feel at a loss because of their poor teaching competence. Some teachers take research and teaching as a means to achieve fame and fortune, turning the university campus into a "vanity fair."

What is the reason for the uninspiring teaching in universities? It is not easy to answer this question for there are actually several reasons. These include the teachers' lack of subject knowledge, independent opinions and thoughts, cheerful and genial personalities, wisdom of teaching, or sense of humor. Conversely, in order to attract students' attention and promote their motivation to learn, some teachers emphasize too much on being interesting, and their humor becomes vulgar, which will inevitably lead to deviation from the teaching content and goals. In fact, university teachers are not clowns on the stage. After all, students enter the class with an aim to use their head and train their thinking. So even if the teacher gives a monologue in class, it is good teaching as long as it can provoke students' active thinking.

Even to this day, the questions of "how to teach" and "how to learn" have not been answered yet. There are still students not knowing how to learn and teachers not knowing how to teach. Some critics say that the teaching profession is not specialized, and it seems everyone can be a teacher; they may have subject knowledge yet have no teaching skills. Yet through teaching practice we see that teaching is a highly specialized profession, the most specialized in the world, and not just anyone can be qualified as a teacher. If a scholar gives a lecture now and then in a university, he or she does not need to pay special attention to teaching methodology; if he or she teaches in a university as a regular job, he or she must study teaching techniques, and take teaching as a specialized profession. Some of the terrible results of teachers not knowing how to teach may appear immediately, while others may emerge over time. While the harm may be long lasting, having a

pernicious effect on students' intellect, body, and attitudes, it will also negatively affect their future development. Students have limitless potential for development, bringing original creativity and curiosity to the world. Yet such precious qualities disappear gradually under the influence of poor teaching strategies. The present education system is far from satisfactory, as it cannot foster or even protect creativity in students. To some degree, it is damaging their originality. In teaching, if we consider the philosophy of 'first do no harm', hurting one's spirit and potential is the worst thing to do.

Over my years of teaching, I have gradually become more interested in university teaching methodology, and have found it ever more necessary for becoming an excellent teacher. The intention of editing this book originates from my persistent concern over teaching issues in universities, my enthusiasm for the profession, and reflection on the teaching strategies. Also the negative learning experience as a university student brought about by poor teaching, the embarrassment as a teacher of finding students absent-minded while I was teaching, and the suggestions given by dissatisfied students.

I would have a strong sense of frustration when seeing students not listening, and would feel a loss of self-esteem and competence as a teacher. The basic principle for me is to try to do everything well. My belief is that things should be done right or not at all, which comes from my sense of honor. I cannot endure the embarrassment of being looked down upon by students, and I do not want to waste students' precious time. Therefore, I have tried every means to make my class interesting. In fact, most students do not like theory teaching, because they lack the practical experience on which the understanding of theories depends. It is not the theory's fault, but the way of demonstrating them is not appropriate. It is quite necessary to make some changes to the "chalk and talk" way of teaching.

Through reading literature in this area, I am now aware of outstanding authors whose teaching research articles have been published in international journals. Thanks to the Internet it is also very convenient to communicate with them via e-mail. A teaching research community was established with an agreement from each of the professors. These professors teach in various university disciplines, but none of them majors in education. They deserve my respect and admiration for this alone. They are enthusiastic about teaching, constantly striving for excellence and perfection, and exploring effective teaching methods diligently. They are real educators.

Readers can receive inspiration for teaching methods and research in the authors' experience and exploration. This book is the result of international cooperative research, which includes 16 articles from university teachers in seven different countries around the world, exhibiting their latest findings in various aspects of teaching research. The themes of these studies, whether of a theoretical nature or teaching methods, are all hot topics in current university instructional research. Since they are from different disciplines, we suggest readers focus on teaching strategies while reading them. This book aims to provide readers with various practical teaching models, which will in turn provoke readers' own innovations in teaching methodology. Generally speaking, teachers tend to employ

analogy in their research on instructional situations. In other words, when met with difficulties in teaching activities, teachers think of what other teachers would do under similar circumstances, and learn from them.

Until now, many university teachers have taught only from the logic of teaching content, and have rarely done research into teaching methodology. Even if some of them make use of certain techniques, the usage is infrequent and incomplete. A typical example is that some teachers employ an exclusively lecturing technique, making use of language as the only form of communication. Many university teachers barely do any research in teaching methodology. In fact, the logic of university teaching practice includes that of the teaching content, and teaching methodology. Only when the two are in concert with one another, can the instructional process bring a positive experience to teachers and students, allowing students to enjoy learning.

The co-editor of this book is a well-known scholar, Dr. Zhao Yong, who is 4 years younger than myself and a good friend. He is presently working as a professor in the University of Oregon. We worked together on the framework of the book and the author list. Prof. Zhao's academic literacy and original thoughts set a good example for me to follow. And I am very grateful for the time he took from his busy schedule to help in the editing work.

This book is organized into seven parts and 18 chapters.

Part I examines subjectivity teaching, included in which is the chapter written by Mang Li, "Teaching Model Oriented towards Improving Teaching Ability in Pre-service Teachers." The purpose of this study is to overcome the long-standing problem of the teacher-centered teaching model in Chinese universities. To change the situation of dull, inefficient theory learning, to developing students' knowledge building and foster ways of thinking in a teaching career with a creative new teaching model, and to improve their teaching ability as a result.

In Part II we discuss refreshing lectures. It includes two chapters. "Beyond Survival: Using Games to Thrive in Lecture" is written by Whitney Berry and is directed against the fact that music theory is commonly taught in a traditional lecture format, guided by Theory Survivor, and makes use of games to reform traditional lectures. This strategy has an innate popular appeal and capitalizes on group cohesion, extrinsic rewards, and positive peer pressure as motivational factors. Another chapter is "Using Entertaining Metaphors in the Introduction of the Case Method in a Case-Based Course" written by Kavous Ardalan. This chapter shows one way of using entertaining metaphors in the introduction of the case method in the introductory session of a case-based course. Teachers should incorporate entertainment in the teaching and learning environment and make the world of education more attractive. Academicians can accomplish this by incorporating entertaining material in their courses.

In Part III we discuss "Learning Through Construction", and four chapters are included. "An Experiential Learning Approach to Teaching Business Planning: Connecting Students to the Real World" written by Manisha Karia, presents the results of an evaluation of a business planning course that departed significantly from the traditional lecture-style teaching approach to a more student-focused

experiential learning approach in order to acquire entrepreneurial knowledge and skills. The findings from this study have implications for curriculum designers, career planners, and potential entrepreneurs. "Case-Study Instruction in Educational Psychology: Implications for Teacher Preparation" written by Alyssa Gonzalez-DeHass and Patricia Willems shows that case study activity allows for social dialogue and exploration in an atmosphere of shared learning among peers and instructor. It also affords prospective teachers the opportunity to see how a teacher works jointly with other stakeholders in order to assist a student's academic learning. Benefits associated with this method of teaching include pre-service teachers gaining an appreciation for the complexities involved in teaching, opportunities for scaffolding critical thinking skills, students being involved in authentic learning experiences in teacher decision-making, and student motivation to learn academic content. "Innovative Assessment and Collaborative Learning Using Problem-Based Learning. Learning Through Construction a Different Medium in Which to Excel?" written by Moira McLoughlin, presents the evaluation of using a modified triple jump for PBL as a summative assessment strategy within an undergraduate nursing curriculum. Findings demonstrated improved pass rates at first attempt, evidence of deeper learning, and the strengths and weaknesses of the assessment strategy from the facilitator perspective in this innovative assessment. "Enhancing Cooperative Education Through Action Learning Projects" by Jenny Fleming examines cooperative education and the learning theories that underpin work-integrated learning. The theoretical basis of action learning is discussed and a case study illustrates how action learning can be integrated into projects undertaken as part of a work-integrated learning experience. The case study exemplifies how action learning can enhance the student learning experience and provide opportunities to bring about change in practice in the sport and recreation industry.

Part IV examines "Learning Through Transaction", which includes two chapters. "Examining Instructional Interventions: Encouraging Academic Integrity Through Active Learning Approaches" by Lucia Zivcakova and Eileen Wood, claims that academic integrity includes the preparation, completion, and submission of assignments and examinations, as well as the interactions that occur among students, and between educators and their students. A corresponding term 'academic misconduct' reflects situations where the general principles of ethical behavior have been violated. The chapter explores innovative programs designed to provide students with the information they need to determine what is and what is not ethical academic behavior, and to conduct themselves with integrity throughout their academic experience. "Peer Mentoring and Tutoring in Higher Education" by Janet W. Colvin suggests that in today's world colleges and universities are implementing many different types of instruction to not only save money but to also increase student success and retention. Many of these implementations involve peer situations including peer tutoring and peer mentoring. While these peer situations have found much success there have also been problems. In order to increase the chances for success, students, mentors, and tutors, as well as instructors all need to understand the definition of the role being utilized,

the benefits and risks for all involved, and the implications of power and resistance. This chapter outlines each of those and also gives suggestions for implementing peer mentoring and tutoring programs.

Part V discusses "Transformative Learning", and includes three chapters. "Learning and Transformation" written by Sabra E. Brock first describes the steps preceding trans-formative learning. Then, after reviewing the current transformative learning literature and the scholarly writing on college student learning, the chapter elaborates on the key transformative learning concepts, its incidence, the characteristics of those more likely to exhibit it, as well as the factors fostering it: instructional methods, life events, and types of people who stimulate it. Previously unreported verbatim comments from three original studies expand understanding of the process of transformative learning. "Using the Discovering Model to Facilitate Transformative Learning in Higher Education" by Michael Kroth and Patricia Boverie reclaims a Passion Transformation Model intended to help leaders and individuals create passionate work and passionate work environments. It also recalls a simple model that can be used to help discuss and to understand the transformational learning process and, as importantly, the role personal agency can play for individuals who wish to initiate the inquiry process themselves. The purpose of this chapter is to present this model which college faculty can use to help facilitate transformational learning experiences for their students. The authors draw here from earlier articles on techniques and expand the discussion to include transformational learning in higher education. "Transformative Learning Theory: Addressing New Challenges in Social Work Education" written by Peter Jones discusses the features of transformative learning and explores their application in integrating ecological concerns into social work education. The author claims that transformative learning theory has emerged as an educational approach concerned with understanding and facilitating profound change at both individual and societal levels. The congruence between the features of transformative learning and the central concerns of social work education suggest that this approach to learning may be beneficial as the profession addresses new challenges, including engaging with the global environmental crisis.

Part VI discusses "Using Technology". It includes three chapters. "Technology-Supported Design for Inquiry-Based Learning" written by Philippa Levy explores the role of digital technology in supporting higher education teachers to design for inquiry-based learning (IBL). Using a qualitative research approach, the project identified variations in teachers' conceptions of IBL pedagogy and in their approaches to design for learning. LAMS, in the version used, was found to offer design affordances that are especially consistent with teacher-led, rather than student-led, approaches to IBL pedagogy. The issues arising from this research are of relevance to academic developers in higher education and to the further development and use of digital design tools for IBL. "Past, Present and Future of Podcasting in Higher Education" written by Vicenc Fernandez aims at developing a podcasting model that can establish the necessary guidelines for the use of podcasts. This model is key to defining control variables for sharing and incorporating research results on podcasting. "Blended Learning in English for

Tourism: A Case Study" written by Li Yan, aims at establishing a blended teaching and learning model, named "Tour around the World", combining online and face-to-face instruction for English for Tourism course. A case study design using qualitative methods was taken in this study as the best means to collect in-depth data on design and implementations of blended language learning models. The findings of the study show that this model contributes to effective learning and student satisfaction as long as sufficient supports are provided.

In Part VII we examine "Assessment for Learning and Teaching", and include three chapters. "Essay Question Formative Assessments in Large Section Courses: Two Studies Illustrating Easy and Effective Use" by Andrea A. Curcio proposes questions: Do formative assessments, via practice exercises accompanied by generalized feedback, make a difference in students' final essay and short-answer exam performance? If so, does the practice help some students more than others? The author's team seeks to devise a duplicable model for examining those same questions across disciplines, and hopes to develop an easily workable method to provide practice and feedback to large section courses without unduly burdening faculty. This chapter discusses the findings that practice exercises and generalized feedback formative assessments can be done in large section courses with minimal additional professorial work, and that the effects of that practice can be easily studied. Although practice exercises accompanied by annotated model answers and grading rubrics had a positive effect on students' final-exam performance on essay questions and short-essay/short-answer test questions, the effects of the practice and feedback did not benefit all students equally—the students with the highest grade predictors received the greatest benefit from the formative assessments. "Learner-Centered Assessment in US Colleges and Universities" by Karen L. Webber points out that over the past two decades, US postsecondary faculty members have moved away from 'sage on the stage' to learner-centered instruction and assessment of learning. The assessment of student learning continues to be an important issue among educators and other constituents. This chapter discusses faculty member use of learner-centered assessment techniques in US colleges and universities, based on responses from the 1993 and 2004 National Study of Postsecondary Faculty (NSOPF). "Application of Formative Assessment in a Chinese EFL Course" written by Zheng Chunping and Li Chuhan, developed a tentative model for assessing learners' public speaking competence by incorporating formative assessment practices with conventional summative assessment tools in a Chinese EFL public speaking course. An exploratory experiment indicated that the learners in the experimental group demonstrated significantly better performance in public speaking, particularly in terms of their delivery skills. The analysis of learning journals and post-experimental survey also showed learners' positive perception of the tentative assessment model.

Any published book would be imperfect, leaving shortcomings and problems behind. Before the publication of this book, the most powerful force has not taken part in the writing of this book, this force came from the readers, especially those who are teachers with practical experiences. While reading this book, it would be appreciated if readers could give much thought and consideration to the book, and

give precious constructive suggestions. We are looking forward to receiving your response. My e-mail address: leemang@bnu.edu.cn.

Finally, our thanks go to Springer-Verlag for their planning and editing work. This international book of university teaching research would not have been published so smoothly without their professional and efficient work.

China, December 2013 Mang Li

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Part I
Subjectivity Learning

Chapter 1
Instructional Model Oriented Towards Improving Teaching Ability of Preservice Teachers

Mang Li

Abstract This study is aimed at solving the long-standing problem of the teacher-centered teaching model in Chinese universities. To change the situation from dull, inefficient theory learning, to promoting students' knowledge building, fostering ways of thinking in teaching career with a creative new teaching model, and improving preservice teachers' teaching ability. Transformative learning theory is the theoretical basis of this study. The teaching model includes interactive lecturing, educational narratives, instructional simulation, reading reports, video presentation, self-reflection project "200", net-based learning resources, and assessments.

Keywords Preservice teachers · Teaching ability · Instructional model · Teaching problem

1.1 Introduction

How can we foster teaching ability of preservice teachers effectively? This is one of the most important issues for higher teacher education. However, as far back as known, pedagogy in higher education has been neglected. Thus, the classroom instruction of higher teacher education is not satisfactory. "Chalk and talk", "television show",[1] and "sage on the stage" abound, and there seem to be an

A study of the course, "Fundamental Theories of Learning and Teaching" in Beijing Normal University.

[1] Television show refers to the teaching style of some teachers lacking interaction with the students, which is like watching television.

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invisible screen between the teacher and the students, obstructing communication; many teachers teach always showing their back, with students following them step by step, without cultivating creativity in students; some teachers go to the other extreme, naming their teaching student-centered, "shepherding"[2] in effect. Such problems lead to students' disappointment in the classroom, leaving their creativity, judgment, expressiveness, reasoning, and problem-solving ability undeveloped.

According to modern learning theory, it is important learning goal for each college student to find problems, learn, cogitate, make judgments, and take action. They also need to learn self-discipline, cooperation with others, consideration, and affection. There should be a turn from knowledge and skill-centered quantitative learning ability or quantitative knowledge learning theory to a learning ability theory emphasizing an ability to reason, make judgments, take action, and solve problems. These are not easily quantified and should change from emphasizing knowledge of known outcomes to a teaching style centered on self-improvement and management of learning methods.

Higher teacher education has been constantly strengthening rote learning, which equips students with information and skills. Taking this learning style, students are able to repeat the formed way of thinking, retain certain information, yet they would feel helpless faced with complicated and changeable teaching problems. Qualified future teachers should be flexible in thinking and taking action, combining linear ways of thinking and divergent thinking. A major goal of higher teacher education is to foster self-reflection in students, promote transformation in their inner world to cope with changes in their outer world, to generate new forms of behavior, improve the self-renewal process, and help to bring about the state of "blooming" in the students.

In our teaching practice, we see promotion of the development of students' teaching ability as our primary goal, and designed an instructional model including theory lecturing, educational narratives, instructional simulation, reading report, video presentation, and self-reflection project "200".

1.2 Rational

1.2.1 Mezirow's Transformative Learning Theory

Since the concept of transformative learning was first proposed by Mezirow (1978), it has been increasingly popular in educational research in North America and Europe.

[2] The style of herding sheep, refers to the teaching style of leaving students alone, without supervising or facilitating.

Transformative learning theory emphasizes the important role of critical reflection and critical discourse (Mezirow 2006) in learning process, and suggests three types of learning: instrumental, dialogic, and self-reflective (Mezirow 1985). In instrumental learning, learners learn how to control and influence the outer world and other people, stressing technical knowledge; while in dialogical learning they learn to understand social environments, stressing practical knowledge; and in self-reflective learning, they gain knowledge about themselves, and develop rational, empirical, and social knowledge. Transformation takes place when the learner encounters events or settings contrary to their former beliefs. Transformation of opinions can appear gradually or take place abruptly, while learners experience several stages during the process of cognitive reconstruction and feeling adaptation, including cognitive conflict, introspection, critical assessment, and exploring new ways of behaving.

It follows that teachers should create for the students learning environments facilitating participation, experience, dialog, reflection, and to accomplish transformation in the end. The teaching model, oriented toward improving teaching ability in preservice teachers, is developed for creating such an environment.

1.2.2 Seven Principles for Good Practice in Undergraduate Education

The American Association of Higher Education (AAHE) proposed seven principles for good practice in undergraduate education, based on research on good learning and teaching in colleges and universities (Chickering and Gamson 1987). Abiding by these principles, educators in undergraduate education in the USA and Canada set explicit goals for good educational practice, which is closely related to active learning.

First of all, good practice encourages contact between students and faculty. Both inside and outside the classroom, frequent communication between faculty and students is one of the most important factors in promoting students' motivation to learn and improving the learning effect. The faculty may supervise and urge students to take an active part in learning, and remind them of their personal worth and future goals. Students' sense of belonging and responsibility can be increased while communicating with the faculty, so it is important to provide the students with more opportunities to contact the faculty.

Second, good practice encourages reciprocity and cooperation among students. Working together with peers can enhance the learning effect. In a learning community, students' opinions conflict, and they get to know different learning styles and ways of thinking, which is beneficial for their mutual understanding. Students communicate with each other, and build a close relationship, so it is easier for them to integrate into teaching and learning activities.

Third, good practice encourages active learning. Students' learning is not like watching sports, sitting in the classroom, and listening to the teacher. They should turn what they have learnt into their own knowledge and competence. Passive learning does not result in high efficiency. It is of great importance for college students to engage in active learning. Teachers should not only constantly enrich the teaching content, but also think about how to help students learn on their own initiative.

Fourth, good practice gives students prompt feedback. Learning would be more effective if students knew explicitly what they understand and what they do not. To achieve the learning goal through teaching, it is necessary to give students proper feedback about the learning outcome. It is important for students' future learning to make clear how far they are from their goals, which is also a good way of assessing the teacher's teaching.

Fifth, good practice emphasizes time spent on tasks. Learning activities require students to make effort and persevere, and they need to spend great amount of time and energy. Time passes quickly; therefore, students should be able to make good use of their time. The teacher may help students with their time management; help them learn how to use their time effectively. It is no exaggeration to say that effective time management leads to achieving learning outcomes. Every student knows the importance of learning outside the classroom, but many of them do not know how to make efficient use of their time.

Sixth, good practice communicates high expectations for students. High expectation leads to high achievements. High expectations are important to both low level, reluctant learners and smart, active ones. If the teacher expects high performance from the students and keeps such expectations, students would constantly make efforts toward the goal, and turn it into reality. Students are sensitive to the teacher's expectation. If they feel neglected, they would become less motivated and less effective learners.

Seventh, good practice respects diverse talents and ways of learning. Students come to universities with diverse abilities and ways of learning. Even excellent students may not perform satisfactorily in experimental skills or arts; highly experienced students may be poor in theory learning. It is necessary to design and provide a range of opportunities for all types of students to actively exhibit various talents and learning methods. Thus, students can take up the challenge of new learning methods. Universities are designed to accept students with diverse skills, abilities, and learning styles.

In Chinese universities, there has long been a teaching culture of "teachers talk and students listen". Teachers tend to impart knowledge and the ways of its usage to students, who simply expect knowledge from teachers' utterances. Knowledge transmission is the main activity between students and teachers. Yet the course of "Fundamental Theories of Learning and Teaching" emphasizes students' finding and solving problems by themselves, dynamic and active learning, ability to think critically and autonomously, and the accomplishment of higher order goals.

1.3 Features of the Teaching Model

"Fundamental Theories of Learning and Teaching" is a course offered to the preservice teachers in the Faculty of Education, Beijing Normal University. It is for the undergraduates who have just begun their studies in theories of learning and teaching, and who are dedicated to the teaching career. This course is to reveal the basic rules of the interaction between learning and teaching, thus enabling the learners' keen perception of "how to teach" and "how to learn". The course aims at improving students' abilities in teaching and mastering the core concepts of learning, teaching and technology, emphasis on teaching methods, experiencing basic skills in teaching practice, mastering them, and finally achieving good learning outcomes. In the process of teaching, the writer would like to (1) invoke students' interest in this course, (2) enable students' keen perception of the principles of teaching and learning, (3) improve students' ability in teaching, and (4) help students love the teaching career.

In terms of learning motivation, most of the students taking this course orient themselves to be teachers in the future and are very enthusiastic. The key factor to improve teaching in higher education is to enhance students' motivation. In teaching and learning, it is better for the students to understand the value of the learning, to experience the joy of learning, to perceive their growth, and to set their next goal. But enthusiasm does not necessarily guarantee effective learning. Some teachers hope to teach students what they know by "teaching and listening", and they call "passing students what they know" a teaching strategy. Such a strategy might not be effective teaching. In this process, the students do not take any notes; and worse than that, they do not use their mind, resulting in their not understanding the valuable teaching. Some students are reluctant to accept these "wise sayings". Thus, it is a waste of time for both the teachers and the students. Therefore, "what the teachers say" should not be the criterion of the value of teaching. In teaching, it is not only the logic of teaching, but the consideration of the psychology of learning, and the reconciliation between the two.

University teachers should be well equipped with well rounded and in-depth knowledge of educational psychology, to better understand students, their learning and teaching, and to ensure their effective teaching activities. For instance, many teachers consider teaching to be their job, classroom their sales field, and students shoppers. Those who do not shop, that is, students who do not do well in their learning are considered to be poor students. If students make some progress, it is a reflection of the teaching; if not, it is their own fault. Teachers have authority in the classroom. However, teaching is not only one-sided giving from the teachers, but also students should be the center of teaching and learning activities. Teachers should always care about the level of students' understanding. Students may not be the only cause of inefficiency in teaching; sometimes there might be a fault with the teaching strategy. Teachers are only helpers to the changes of the students, and they help through their teaching. The significance of teaching lies in the changes of the students. To make the learning meaningful, it is necessary that teachers carry

out in-depth study into teaching methods. In supporting teacher development, universities did no better than primary and middle schools. At present, most of the university teachers are specialists with a doctoral degree, but they have not received any formal training in teaching. Once they become teachers, they must consciously improve their teaching ability.

Behavioral change is the premise of conceptual change, but not the reverse. To become an ideal teacher, the first thing to do is change the behavior of the teachers and the students. Every teacher must work persistently and hard to build up a personalized and practical teaching model. This model must be deduced from the reflection on his own and the others' practice.

The present instructional model is based on more than 20 years of teaching experience in the course, "Theories of Learning and Teaching". Its basic concept is not only concerned with what students have currently acquired, but also what they can do in the future. "What they can do" is referred to as their ability. The features of this model can be summed up in the following four aspects:

First, it is ability-oriented. This model aims at not only the students' mastering of objective knowledge, but also the development of their key abilities, including character development, critical thinking, making judgments, expressing themselves, organizing teaching materials, designing, problem-solving, and most importantly transforming theory into practice.

Second, it is student-oriented. There has been a shift in working focus from teaching to learning, paying close attention to students' learning strategies. It is not teaching where there is no learning. This statement expresses the nature of the relationship between learning and teaching. In his speech, John Dewey once said that just like selling starts as buying begins, teaching starts when learning begins (Dewey 1991). Understanding the relationship between learning and teaching with the help of that between buying and selling, the teacher is not in any way in an advantageous position. On the contrary, the teacher must win the learner's approval to reach his teaching goal. In this sense, the teacher is subjected to the learner, in a disadvantageous position. This shows that teaching can only come into effect by way of students' learning.

With regard to the learning method, this model takes in basic elements of active learning, self-regulated learning, self-directed learning, student-centered learning, project-based learning, and cooperative learning, which contribute to students' transformation. These learning methods can be divided into three types according to the different importance they attach to three elements of learning strategies. One emphasizes students' responsibility in their own learning, that is, to choose, adjust and regulate learning objective, content, and method for themselves. Another one designates subjects in form of project and practical problems, to achieve a deeper understanding of the target field, establishing the relationship between the students and the target world. The third lays more emphasis on the harmonious relationship between the students and others in the process of learning, to accomplish the learning tasks through cooperation. With the combination of these three methods of learning and teaching, this model stresses active, cooperative, and introspective learning, in order to achieve deeper understanding.

This instructional model emphasizes a change in students' learning style, from obligatory learning to initiative learning, from disintegrated, fragmented learning to integrated, correlative learning, from desk learning to practical, executive and experimental learning, from rote learning to discussion-centered learning, from accepted system learning to practical theme learning, enabling students' learning development.

The third, the model is participation-oriented. Students' interest in learning is a key factor in achieving effective teaching. How can we enhance students' interest and initiative in learning?

Indeed, it is very difficult to listen to others' talking passively, though if the content is valuable, a person can persevere. However, small changes in talking style can turn people into active listeners. So it is with teaching. The students will feel bored if they are forced to passively receive, even if what is being taught is of great importance. A good way to solve the problem is to get students to participate in the learning activities, with the concept "learning is my own business" in their minds.

Participation in learning is a complex concept; students should be involved in every aspects of learning. In this model, students are participating actively and effectively in the following three aspects:

One is to participate physically. Most students are fond of physical courses. They like experiments; they like going out of classrooms to carry out social investigation; they like challenging learning tasks. Based on the requirements of the teaching objective, the writer designed all kinds of tasks for the students, and their initiative in learning has been greatly enhanced. It must be pointed out here that physical participation is not the end but the means, which is to enhance students' mental participation.

Second is mental participation. The basic teaching objective in a university is to foster students' ability in abstract thinking, to form an effective way of thinking, to enhance students' intelligence. To achieve these objectives, teachers should begin with fostering students' thinking. Thinking can be seen as having five parts: profundity, flexibility, originality, criticalness, and agility. In the process of teaching, only active intellectual engagement can raise the level of thinking. To be exact, students come into the classroom to use their minds. Teachers must try every means to help them think critically and in a self-disciplined way. For example, teachers can offer students problem-triggering, interesting, and comprehensible materials.

The third is interactive participation. Cooperation between students, interaction between teachers, and students has great effect on learning. The course emphasizes the educating and teaching significance of group teaching. Interaction between students promotes creativity. Various groupings can have positive effects on teaching and learning. Many scholars researching students' cooperation will deliberately group students according to certain principles, for example, homogenous grouping according to students' learning ability and level. The course favors free grouping and adopting relation grouping. It is unnecessary for teachers to interfere too much in grouping. Those getting along well or sharing the same dorm can form a group. In this way, the members are intimate with each other, having strong interpersonal cohesion and harmony. They enjoy seeing each other.

Such a way of grouping may sometimes lead to negative effects from a traditional point of view. Yet, any problem in teaching is a chance for both the teachers and the students. One problem is that some students might be unpopular, and cannot find a group. If such students choose to learn all by themselves, the teacher would tailor the tasks for their individual activities; if they want to be in one of the groups, the teacher would help them reflect on their behavior, and think of ways to take on a new image. Another problem arises that sometimes a less able student may be made group leader. There are two possible reasons: one is that he wants to make an attempt at it despite his lack of leadership ability; the other one is no one else is interested in the position. Afterward, this group leader has great difficulty in his work, complaining to the teacher about the members in his group not cooperating, unable to make unified learning plan, having no clear division of work, too much absence, etc. resulting in a state of paralysis of the group activities. According to Confucius, teachers should not enlighten students until they have tried hard but failed; and should not instruct students until they have something to say and are able to make themselves understood. It is only then that the teacher should appear. There are two things for the teacher to do. One is to encourage the group leader, and the other is to work with the other members, instructing them to support the leader and cooperate in group activities. In this process, the group leader has a good experience and practice, and the other members learn to cooperate, care and help, as well as how to fulfill their role.

It must be stressed here that in the process of group work, teachers must monitor students' discussion and offer real-time guidance. The defect of "putting sheep out to pasture" type of group learning should be avoided, in which the teacher just lays emphasis on the learning results, caring nothing about the learning process, listening to reports only, not participating in any discussion. The writer adopts an interactive mode of unbridled discussion. Apart from the required classroom discussion, students can make an appointment with the teacher for a face-to-face discussion when they want the teacher's participation or when they need their teacher's guidance and instruction in their discussion. On average, the teacher's participation in each group occurs more than three times, and up to six or seven times. It is very obvious that this interaction greatly meets students' satisfaction in learning and improves the effect and quality of student group learning.

Fourth, the model is result-oriented. The most important factor to ensure the learning outcome is what task to complete. The tasks should be real, interesting, challenging, creative, suitable for group work, and outcome-predictable. From the perspective of fostering students' ability, making them hear is far from enough. Students must learn to achieve the objective. Chinese philosopher Wang Yangming in Ming Dynasty pointed out in his *Chuanxilu* (Instructions for Practical Living) that wise men put their heart and soul into learning, with the key lying in practice. Never deem as pure knowledge, learning that is passed from mouth to ears. He put forward the "unity of knowing and doing" discipline for his pupils (Wang 2007:127). Socrates in Europe also pointed out that so-called wisdom is not only the knowing of but also the practice of truth. If not, it is not the real knowing of truth. Wisdom is comprised of theory and practice and they are not two things, but a unity

(Chen 1997:37). In terms of teaching evaluation, students' learning outcomes is very important information for teachers' knowing about and analyzing student's learning. Through the analysis of students' learning outcomes, teachers can have a clear understanding of the degree and level of guidance in teaching, can diagnose student's problems in learning and finally make a survey of the changes in students. It is also important information for students to experience their own progress and their sense of achievement.

1.4 Procedure of the Instructional Model

As shown in Fig. 1.1, on the left side is the teaching procedure, in the middle is the time arrangement of various activities, on the right side is the cognitive transformation process of the learners. This model shows the writer's different organized measures to help preservice teachers improve teaching skills, optimize teaching content, and develop teaching ability in turn. Following this model, the teacher plays the role of "sage on the stage" and "guide on the side" at the same time (King 1993). Students learn theories in various ways. By making inquiries, students and teacher communicate via face-to-face contact and web platforms, and reconstruct their perspective of learning and teaching and behavior through critical reflection on learning and teaching experiences. From the practical point of view, the instructional model developing teaching ability was summed up as follows:

1.4.1 Interactive Lecturing

How can you make your teaching attractive to students? One simple strategy is to explain and illustrate. Some teachers do this effectively, while others fail to do so. Interactive lecturing sessions make full use of classroom instruction and cherish every second of the meeting time of the teacher and students. The teacher discusses knowledge, opinions, idea and ways of thinking, and focuses on fostering ability of thinking and making judgment in students. Effective lectures, though appearing to be long monologs on the stage, actually involve deep yet unobtrusive exchanges. The teacher's connection with the students enables them to transform together. An effective lecture must be interactive between the teacher and students, learning through dynamic (mainly verbal) interaction.

1.4.1.1 Students as Active Listener

During interactive lecturing, it is important for students to listen effectively and think actively. The teacher must help students enter the state of actively lending an attentive ear to the teacher. While listening to a lecture, students should give their

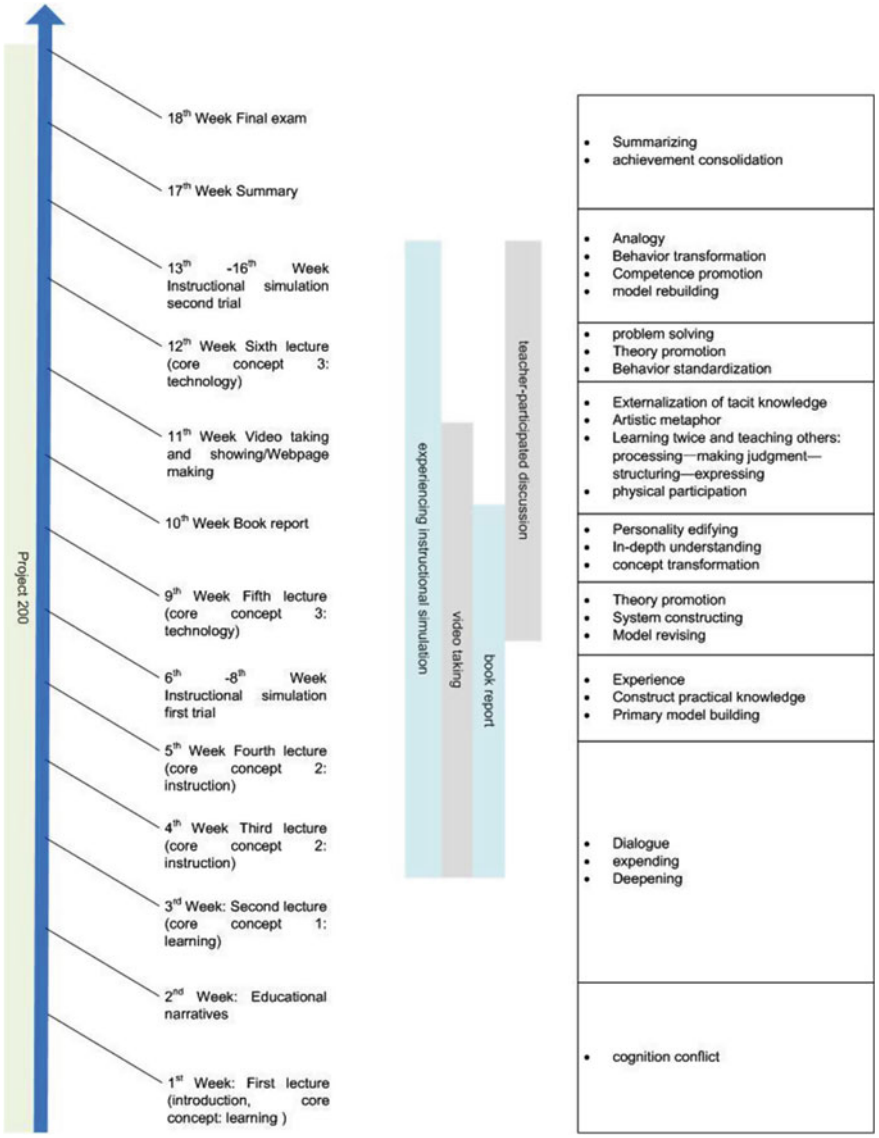

Fig. 1.1 Teaching model improving teaching ability

whole attention to it; listen earnestly and respectfully, without any drop in concentration. Students think actively while listening, rearranging their cognition. It requires great effort to listen to lectures, overcome various distractions, and deploy all their energy. Once they are involved, students would forget tiredness and the effort required to concentrate. Not only do they feel tireless, but also they would have a sense of enjoyment as well. Therefore, it is of great importance for students

to listen attentively, take careful notes, follow the lecturer's thoughts, and raise questions. This highly attentive state of learning in students sometimes does not appear spontaneously, the teacher must help them attain it.

1.4.1.2 Teacher as Excellent Lecturer

It is necessary to be an excellent lecturer as a teacher. In order to guarantee the effectiveness of receptive learning, the teacher must be good at lecturing, for the way the teacher speaks exerts tremendous influence on students' learning. In effect, not all people are good at speaking, which is not a simple thing, and each person's speaking competence varies greatly. The teacher should pay close attention to the effectiveness of speaking, communicate efficiently with students, and help them learn. The teacher should summarize and refine the rules of lecturing based on his or her own teaching practice. How then should the teacher lecture?

First, the teacher must know the fundamental structure of classroom instruction.

Classroom instruction is composed of an introduction, a main lesson, and a summary.

In the introduction session, the main activity is to lead students into the context or atmosphere of learning. The teacher may start with an example, some strange plot, an astonishing event, a famous quote, or interact with students, or make use of realia.

In the main session, the teacher should first choose the teaching content carefully, and arrange the materials properly, examine various learning methods, and investigate their effectiveness. A good cook can turn nutritious but not tasty food materials into delicious dishes, while an excellent teacher can turn the originally dull learning materials into both meaningful and interesting contents. Thus, teachers are "cooks of spiritual food". The teaching content must be meaningful, as well as interesting. "Meaning" and "interest" should be distinguished. Knowing the difference between them, and making use of instructional materials with both features, may help students learn more effectively. In addition, effective teaching should eventually accomplish generalization of the big idea of the learning content. The teacher in this study does not teach literally from the textbook, i.e., to show the teaching content directly to the students. He uses the content instead and personalizes it. Materials used in teaching, representing instructional content, are accumulated during long periods of teaching experience, including texts, videos, and images. They are vivid, clear and have a strong instructive impact.

In the summary session, the teacher helps students consolidate instructional content, evaluate the teaching outcomes, give students a sense of achievement, and make clear the relationship between the present content and future ones. Generally speaking, there are three types of instructional summaries. The first is called ending without summarizing, i.e., when time is up, the teacher stops wherever he is, and declares class over. The second type is that the teacher summarizes what

has been learnt that day, and gives a simple review of the points covered. For example, "we have learnt three issues today, first the definition of instruction, second the types of instruction, and third, the functions of instruction". This type is no doubt more positive than the first one. Yet it is still not enough to just summarize the content. The third type is a summary starting from the essence, which can extract the most central content, point out the soul of the instructional content. Such core contents are easier for students to understand, remember, and transfer to other settings.

Second, the teacher must know specific ways of lecturing.

Many teachers say that, after entering the classroom, they do not know how to communicate with the students effectively, or how to make themselves understood. There are a lot of rules in teaching practice which requires teachers study and summarize constantly.

Appearing simple, the lecturing method is complicated in effect. So it is not proper to lecture without preparation. It is necessary to design and prepare carefully the key points, to consider various factors affecting the result, and to anticipate all that would happen. The general skills for lecturing includes the following eight aspects: making early plans, rehearsing beforehand, appropriate anxiety, standing pose, moving and body language, voice adjustment, eye contact and facial expressions, applying visual media, and dealing with problems and emergencies. According to Albert Mehrabian from the University of California, Los Angeles, who analyzed basic elements in effective transmission of instructional information, verbal elements account for only 7 % of the total effectiveness of the transmission. Therefore, it is clear that speak clearly is not enough. Teachers' tone and intonation, account for 38 % of the effectiveness, which implies they should vary their speaking considerably. Teachers' body language account for 55 % of the whole, because people receive more information through seeing than listening, and they have 22 times more visual nerves than auditory ones (Tracy 2008:9). While explaining, teachers should substantiate the teaching content consciously, avoiding empty talk. It is proper to confine the teaching within certain limits. Do not expect to cover endless domain in a certain period of time. Illustration is also useful when teachers turn the teaching content into stories, giving abundant examples. A teacher's story can be magic. The vividness of teachers' language, deploying colloquial words, avoiding complexity, making proper use of illustrations, emphasizing and repeating the key points, raising more questions, writing more on the board are all basic elements of lecturing, which can increase attractiveness and appeal of the teaching.

Throughout the course, it is emphasized that a good teacher enables clear and unclear thinking. Here, unclear refers to the cognitive conflict of higher level thinking in students when they encounter certain stimulation in learning, which makes them think more. A good teacher does not deliver knowledge. Teachers should be cautious not to explain too long, too fast or too much. It is not that the longer the learning takes the better, the faster the teacher explains the better, or the more the teacher explains the better. Learners should be able to cease learning before they get tired of it, thus they would go on learning with more energy.

College teachers should be equipped with the most advantageous knowledge, the ability to think deeply, and the ability to make themselves understood. There are cases in which a lecturer spends a day to make things clear; an associate professor needs an hour of humor; and a professor needs only a few words.

1.4.1.3 What Kind of Lecturers Do Students Like?

First, an experienced person: Learners no doubt like listening to lectures given by learned persons. Once a person very widely read and wealthy in knowledge appears on the platform, some distinctive charm is spread to the audience. Such instructional content as thought, knowledge, and cognition flow smoothly and easily. Well documented, able to achieve success one way or another, well versed in the learning of both ancient and modern times, his or her teaching would bring boundless learning encouragement to the learners.

Second, a thoughtful person: It is far from enough to have an encyclopedic mind. A really good lecturer should be able to explain his or her own distinctive thoughts, understanding and point of view, why they think it, and be able to reference other sources. The teacher's opinions may inspire students' deep thinking, and they are also conditions leading to students' original learning outcomes. A thoughtful teacher is a good example for students to follow; they gradually learn to consistently develop their own thinking, use their own mind, and make their own judgments.

Third, a person with sensibility: The expression of feelings is one of the most impressive and engaging elements in lecturing, it can resonate in learners, and be persuasive to them. Affective interaction can take place only after the emergence of emotional experience, which may further develop into an exchange of ideas. While lecturing, the teacher should disclose to a proper degree his or her own emotions, show his or her attitude, and try to influence students with his or her true feelings, allowing students to show their pleasure, anger, sorrow, and joy in the class. A good class should be one with laughter. Students like teachers to be clear about what they love or hate.

Fourth, a skillful person: Teachers should be outstanding instructional designers, and also able to teach with various strategies. A teacher good at lecturing can bring students pleasure in learning, make them interested, make learning less painful, make it easier for students to understand the content, master learning methods, and accomplish real development.

Fifth, a distinctive person: Instructional activities involve a process of communication between people, in which special persons are more likely to be recognized and remembered. It is also true for the information from the special person. Because the information may take the features of the special person, the features integrate with learning content, which in turn makes it easier for students to understand and remember what they have learned, and maintain the enthusiasm to continue learning.

Sixth, an attractive person: If the teacher has knowledge, wisdom, a good temperament, appearance, and feelings, he or she is quite likely to be appreciated and respected. The teacher does not just bring students knowledge and opinions, he or she enables them to enjoy the learning process as well, which leads to students' admiration of him or her. As a result, the teaching is very effective. Each face-to-face class becomes a time students look forward to, they appreciate meeting with the teacher. They like and respect the teacher.

During the first interactive lecture, the teacher helps bring about cognitive conflicts in students by providing events or settings contrasting with their previous point of view. The teacher can stimulate deeper thinking in students related to instructional activities, put the study of instructional activities at the center of research, and promote interest and curiosity in educational research in students. From the second to the fourth lectures, the teacher promotes students' cognitive conflict, extends and deepens learning behavior, enhances effectiveness of the learning, and brings genuine learning experiences to the students.

1.4.2 Educational Narrative

Undergraduates are faced with many difficulties while studying to become teachers. For example, lacking teaching experience, they see education from the students' point of view, which is completely different from seeing the issues from the teachers' viewpoint. In most of the present courses for future teachers, instead of learning how to teach from a teacher's perspective, students simply read or recite general principles. Even if they remember all of them, they learn only armchair strategies which cannot be used in practice. They do not gain skills they need, or understanding of themselves, and cannot develop reasonable, experiential, and social knowledge.

The teaching model for improving teaching ability takes educational narrative as the activity of considering and expressing educational issues. Narrative is an organizational structure of knowledge, and also a carrier of instructional principles and processes. Educational narrative, based on the structure of educational stories, is able to carry the content of education. According to Jerome Bruner (2002), when people organize their experiences and knowledge, it is quite likely for them to choose narrative as the easiest and most natural way. Beginning from an intuitive explanation, they go on to a more formalized and structured one. The learning and teaching process should correspond to the learners' psychology of learning, and be suitable for their logical starting point of learning, the choice of which is of crucial importance to learning effectiveness.

The teacher provides opportunities of narrative study for the student's right after the first interactive lecture. The narrative involves a series of meaningful events. Bringing with them their original perspective, students recall, tell, and analyze an educational event they experienced during the K-12 period. They are required to turn the event into a story, and find out the educational rule it implies.

By recalling and analyzing the highlight or defects of their former teacher's behavior, students establish the contact between fundamental theories of learning and teaching and educational practice in reality. This activity is aimed at helping students change their viewpoint, stimulating their knowledge, and feelings as a student. It is somewhat like one of Gagné's nine steps of instruction (Gagne 1965). To "gain attention" by presenting stimulus to ensure reception of instruction, this acts as the scaffold of the present learning activity, helping students accomplish the transformation from the position of a receiver of education to that of an educator, and providing catalyst for their critical self-reflection.

In this session, students tell their stories clearly in accordance with the teacher's requirement, and each person in the classroom is given equal opportunities for dialog. The teacher acts as a facilitator here. Many students think it is a meaningful way of communication. "I thought a lot after listening to my classmates narratives. They discuss about learning and teaching from various aspects. I think such a class is good. Having never experienced such a class before, I expect more of these classes in the future". Students learn the basic features of effective teaching by sharing and communicating with classmates. The teacher gives feedback to each of the students' narratives and self-reflection assignment after class, pointing out the underlying rules, principles, and beliefs. From the feedback, the teacher helps students achieve transformation of viewpoint, and promotes their critical thinking.

1.4.3 Instructional Simulation

The purpose of instructional simulation is to help students experience teaching activities. Experiential learning is the learning mode in which learners participate in practical activities to gain new knowledge, skills, and attitude through cognition. Experiential learning emphasizes the role played by experience. It does not simply advocate learning by doing, but pays close attention to summarizing and reflection on experiences; it stresses that in the process of gaining knowledge and skills, learners should not only be able to understand and act, but also be able to increase experience through self-reflection. Therefore, it is proper to consider experiential learning as the combination of "learning by doing" and "learning by thinking", which helps students think while practicing.

Experience here can lead to more detailed knowledge than theory alone—practical knowledge, i.e., knowledge in practice. In the process of psychological development, knowledge in practice develops first, then gradually the substitute knowledge model emerges, and finally symbolic knowledge. Throughout history, praxis always precedes its name. It is also true in human development (Bruner 1996:233) Thus, the teacher should consciously promote self-experience of the students, and establish a primary model for learning and teaching.

Concerning methods of learning how to teaching, researcher in teacher education, Shulman, thinks that there are three types of knowledge: pedagogical knowledge (PK), content knowledge (CK), and pedagogical content knowledge

(PCK) (Shulman 1987). The acquisition of the third type, PCK, should take place in practice.

Instructional simulation activity is composed of "Simulation, first taste" and "Simulation, second trial". In "Simulation, first taste", each student chooses teaching content from a textbook from primary or secondary school, designs a lesson plan and course material. The teacher arranges each of them to do the simulation teaching, explain the lesson plan, and the teacher and other students would discuss and evaluate the simulation. Making good use of the students' long experience of being educated, this activity establishes cognitive and behavioral model about teaching practice, which exists in form of "tacit knowledge" as Schön calls it (Schön 1983). The first imitation activity can make the tacit knowledge explicit. Students are enabled to make clear self-inspection, and thus cognitive conflicts would result. On this basis, students' experience of teaching practice and communication among group members as well as the whole class are helpful for students to establish new beliefs and behaviors.

In "Simulation, second trial" taking place around the end of the semester, based on their experience from the first simulation and theories subsequently learnt, students work in groups, prepare a lecture of 40 min, and give a presentation to the whole class. Such an activity can push students to compare the second simulation with the first, their own work with others, so that they accomplish transformation of teaching behaviors and rebuilding of their teaching model. In the reflection session, students report the difference between the two simulations in addition to explaining the teaching plan. They report on what problems appeared in the first simulation and were solved, and in what way. What should be noted is how the learning theories are applied in the second simulation, and what improvement should be made.

Evidence shows that the arrangement of two simulation activities greatly improved students' ability of teaching practice and self-reflection. Students make reflection videos on their feelings about the simulation, and they upload the videos to the course website as an assignment.

1.4.4 Reading Reports

There is a wide spread occurrence in Chinese universities nowadays that students read little during their university life. Some students cannot even finish reading one academic book in a semester. There are various reasons for such occurrences. Fickleness in society as a whole, a distorted value system within universities and the influence of technology on learning styles are among them. University teachers should help students learn what and how to read, and foster the habit of reading, from which students would benefit their whole life. The design of this activity is based on the writer's beliefs about education. In a time of technology abuse,

students must learn to escape from the control of modern technology. The activity of reading a paper book is like turning pages of memory. Holding books of various size, thickness and layouts, listening to the rustling sounds while turning pages, smelling the fragrance of printing ink, underlining and taking notes, are where the enchantment of reading a paper book lies. This traditional learning model is the most reliable, effective, and secure way of learning. It will be the most important and indispensable learning model in the foreseeable future.

It is good fortune for undergraduates to have an acquaintance with some renowned figures in the field he/she studies. Yet for most of them, the chances are very rare. Generally speaking, only through reading can they enter the academic figure's circle of influence, and communicate with him or her. Through books recommended by the teacher, students can not only get to know the academician's learning experience, strategies, and thoughts, but also be influenced by the academician's personality and ideas, which in turn would benefit the building of their personality, the promotion of their critical thinking and establishment of their view on doing research.

There are different ways undergraduates can read. Depending on reading materials, they can for example, read intensively or extensively. In this course, reading is carried out in the form of group cooperation and in-class sharing and communicating. Students and the teacher discuss and decide which book to read. Students read individually first, then work in groups and read intensively. The group members discuss and each of them writes a book report. These reports are summed up in a group presentation. During the writing process, students enhance their awareness and competence of critical reflection. Communication and conflicts in group cooperation allows students to learn to see things from different perspectives. Their ability to understand and make judgment increases. It is true that, wisdom lies not only in the individual mind, but also in other people's minds, in learning materials and in the whole learning environment. It is important to combine individual learning with group learning and integrate various understandings, so that collective creation can take place. Students take part in the learning activity both mentally and physically, which is helpful for the transformation of concepts and behavior.

This activity lasts for a month, which begins with the assignment given in the fourth week, and ends with the class presentation in the tenth, in which students share what they have learned with the class. Students benefit a lot from the sharing. Some students leave such comments on the question and answer platform as, "in book report class, I think a lot after listening to other's reports. It is really pleasurable reading together with others. I can learn something, and become more interested. I like this way of reading". Classroom presentation and communication provide students with opportunities to show their learning outcomes to a larger audience, while the sharing of book reports in each group further enlarges and deepens the range and depth of critical reflection and dialogue.

1.4.5 Video Presentation (or Instructional Website Making)

The study of the National Training Laboratories for Applied Behavioral Science showed that information gained through different learning methods gets different retention rates. Among them, lecturing has the lowest retention rate (5 %), while teaching others or immediate use has got the highest rate (90 %) (Wood 2004). This study provided theoretical support for our teaching practice.

Learning by teaching others is a very effective method. To help others understand, one has to know it well first. Learning by teaching helps students effectively combine knowledge and competence, so they can gain knowledge and do things as well. While preparing for teaching, the teacher must learn fully about it first, and study how to teach. Only in this way can they complete the teaching task. The more in-depth and comprehensively the learners deal with the teaching content, the more likely it is for them to promote the learning quality. Students are required to create videos as teaching media, to work in groups, and to put the learning and teaching theories learned in this course into practice. After making the video, each group gives a presentation to the whole class, followed by discussion between the teacher and students about the form and content of the presentation. In addition, group members also create video recordings for the working process, showing their working experience and what they have learned. The purpose of the teaching plan is to help allay the fear of theory learning in students, to put to an end to the age in which pure theory learning is dull, and to make it more effective and efficient. The group members work actively to get a deep and comprehensive understanding of the content, while the students in other groups can also learn the content from video watching and discussion. At the same time, through exchanging work experience, students learn strategies from each other, and promote metacognitive competence.

This activity enables active inner transformation in students, the turning of tacit knowledge into explicit, and sharing among group or class members. A large part of knowledge is not explicit but tacit, which is a symbol of practical competence (Polanyi 1958). Generally speaking, tacit knowledge cannot be logically expressed in spoken or written words, or any other symbols, nor can it be passed in normal forms (Guo 2003:326). Yet the American psychologist Sternberg claims that tacit knowledge can be acquired through training (Sternberg 2003). Tacit knowledge and explicit knowledge are not two extremes on a continuum. The differences between them are relative, and can be transformed mutually. The Japanese scholar Nonaka and Takeuchi suggest ways of transforming tacit knowledge into explicit (Nonaka and Takeuchi 1995). The first is through socialization, which is the process of individuals communicating and sharing tacit knowledge, emphasizing communication through activities among community members. The second is externalization, in which the individual manages, to some degree, to turn tacit knowledge into explicit and pass it on to others. In fact, the creation of knowledge is the process of constant externalization of tacit knowledge, which usually requires the application of certain technologies to enable individuals to turn their

ideas into words, conceptions, rhetorical language (e.g., simile, metaphor, and description), or images.

Completing the video assignment helps students learn in a metaphorical way, accomplish artistic metaphorical presentation of learning and teaching theories, and metaphorical study of the rules. The essence of metaphors is to know, understand, and express one thing using another (Gao and Xu 2010). Instructional metaphors not in form of language, in particular, are helpful for students to get in-depth understanding of the learning and teaching theories.

Learning by making videos can help the makers accomplish externalization of tacit knowledge, thereby grasping the knowledge hard to express in words, and promoting teaching competence. It can also help viewers investigate others tacit knowledge from the videos.

This activity enables the participation of the body into learning and teaching process. Authentic tasks for the students can maneuver their mind and body to the full, and make the process of learning more interesting and full of change. The movement of the body can effectively stimulate or enhance the thinking activity of the brain, thereby greatly improving learning outcome.

Such activities provide conditions for students' creative learning, which give students a maximum of freedom, set free their imagination, divergent thinking, and convergent thinking, and enhance their ability to concentrate. Students' learning initiative gets fully released, and they get the experience of originality brought by learning activities without model answer. Most students experience staying up late, losing appetite and thinking hard while working on this assignment. Such experience of extreme devotion to learning is so impressive that it will benefit the students for their whole life long.

To make the activity more flexible, the video making and presenting assignment can be substituted by webpage making, which is also an authentic task, providing effective learning, and presenting tools for the students.

1.4.6 Self-Reflection Project 200

Writing short essays on one's own is an effective way to promote reflection. The so-called Project 200 is the requirement that each student writes a reflection log of 200 words every two weeks and submits it to the communication section on the course website.

Generally speaking, learning reflection is an indispensable component in the learning and teaching process, and students' reflections are an important condition for their learning transformation. Through reflection, students become clearer about their learning achievements and problems. They evaluate their learning strategies and set goals for the next step. To complete the reflection log of 200 words, students summarize what they learned with brief and simple language, which helps students establish superordinate big ideas, remember, understand and transfer the content, and raise their competence in generalization. Project 200

fosters in-depth learning in students as well. In-depth learning primarily involves critical thinking and self-regulated thinking. Critical thinking refers to being able to find out the shortcomings, conflicts, and imperfections of the object studied. Self-regulated thinking is the form of creative thinking which does not strictly follow the established rules, is not confined to a set way of thinking, is able to reflect on one's concept and thinking mode, and is able to find out the essence of the object being studied (Toshio 1998). Obviously, critical thinking and self-regulated thinking are high level forms of thinking to which teachers in higher education should pay special attention. Through the web-based platform of the course, students read about others' experiences, communicate with each other, and accomplish interactive learning. The length requirement of 200 words of the essays lessens the difficulty in writing, enabling the students to take an active role, establishing the habit of writing reflection logs. In fact, almost every student submits logs much longer than 200 words, which the teacher is expecting to see. The assignment was originally for the students to write a reflection log of 200 words every week; however, this led to too much reading and response work for the teacher.

To be noted here, do not take it for granted that students can write a 200-word reflection without guidance. The teacher should give guidance in the structure and writing logic of the essays, e.g., chronological order of events; contrasting opinions, i.e., one opinion first, followed by a conflicting opinion, with the writer's own opinion coming the last. A brief introduction and conclusion should be added, after which we get a full structured essay.

The carrying out of Project 200 increases the attraction of this course, in which students experience a sense of fulfillment and achievement, and learn to investigate instructional issues from the teaching professional's perspective.

1.4.7 Learning Resources Building

In higher education, it is helpful to provide encouragement for students' autonomous and cooperative learning rather than pushing them to do so. In fact, most students do not know how to learn autonomously even though the teacher asks them to do so. Neither can they balance in-class and outside of class learning. Therefore, it is necessary for the teacher to provide guidance and support. From the teacher's perspective, the accumulation of teaching resources is beneficial to the building of the curriculum. The carrying out of in-depth instructional research is of vital importance to the improvement of teaching.

It is a new tendency in higher education across the world for teachers to take advantage of modern technologies and provide students with remote teaching services. Yet in China, teachers in higher education have not attached enough importance to it, which is a problem that should no longer be neglected. In regular

higher education, making proper use of networking techniques in establishing web-based instructional platforms, to aid teachers' regular teaching work, is the benefit technology brings to higher education.

Instructional activities are one of the natural communicative activities of humans. Yet there is a common occurrence of "lack in communication" in instructional activities in higher education. Usually one teacher teaches each course, and students and teacher meet once a week, it is unavoidable then that some students would lag behind or become unmotivated for they cannot communicate with the teacher and receive feedback regularly. The students cannot receive necessary, powerful, and effective learning support; the communication between the teacher and students is limited. With network technology, the teacher can make good use of the time out of class to provide the students with learning support. Through web-based platforms, or e-mail, the teacher can answer students' questions and communicate with them at any time, any place, which embodies the concept of mobile learning, ubiquitous learning, distributed learning, and extended learning. The platform can play many other positive roles at the same time, including the delivery of teaching resources, improving instructional modes, explicating the teacher's personal opinions, exhibiting students learning outcomes, and stimulating the students' learning motivation.

The design principle of the e-platform of the course, Fundamental Theories of Learning and Teaching, is "simple and practical, enriched and effective". No "new technology" is employed in building the e-platform. Teaching resources in it mainly include video records of the course lectures, video "pop-talk", assignments and exercises, exhibition of assignments of previous students, recommended academic articles, books and websites, experts' lectures, and the online question answering zone. The resources are generated during the interaction in the teaching and learning process, and it is constantly updated and enlarged, to become the database of the teacher's teaching and support platform of teaching research, aiding in-class activities as well as students out of class autonomous learning and thinking. Here, video "pop-talk" and students' practice modules will be discussed in detail.

In the extended resources module, a section is named "video pop-talk". First, this section is a series of videos the writer began making in 2008, and are a record of his thinking about academic research, accumulation of teaching experiences and various opinions on educational issues, presented in the form of short videos. Many ideas are fleeting, thus video is a good way to preserve them. Second, the information in the form of video and audio, compared with reading, will stimulate their audio-visual senses and enhance their communication and acceptance of the ideas put forward. Researchers found that some people prefer listening to reading when receiving information. Changing to a different format of transmission sometimes makes the information easier to receive. Third, these videos are designed based on the idea of "segments", and are very short in length. Each segment has a theme, an opinion, an idea, and an understanding, which is clear-cut and conforms to the learners' rules of cognition, leading to good teaching effectiveness. After making video pop-talks, the writer found an international

instructional website, TED, in which each speech lasts less than 18 min. The massive open online courses, MOOC, have grown more well known in recent years. A succession of universities formed network-based platforms, providing free courses of small units. Fourth, without the limits of time and space, the writer has more freedom to express himself creatively. He can discuss and record whatever comes to mind wherever he is. Fifth, changing the backgrounds of the videos would also have a positive effect on the learning. The learner's curiosity and the feeling of freshness are positive experiences that may transform into an effective state of learning, stimulating students' motives to learn. Sixth, all these efforts are for assisting classroom lectures. The teacher's own personality and understanding of various issues may act as supplementary materials for the lectures, having a positive influence on students.

The "video pop-talk" is an ideal way of showing the teacher's personality, and establishing good communication and rapport with students. Its function is far beyond learning and discussing field knowledge. It is a much wider area, discussing more extensive topics. The teacher may talk about knowledge, conducting ones behavior, society, or about life. It allows for instantaneous expression, and can be kept for a long time.

Using this method of teaching sets, a high standard for the teacher's teaching competence, especially their capacity in information technology and expressing oneself. It requires the teacher to be able to use video and audio tools to edit digital materials and to use the internet skillfully. The teacher needs to practice presentation skills in front of the lens, in order to increase the attractiveness of language use, and to express himself with calm and ease, vividly yet naturally. While appearing to be a monolog of the teacher alone in front of the lens, it is interacting spiritually with the learners. This way of teaching is in accordance with what Knowles refers to as the principle of friendly and informal learning atmosphere (Smith 2002).

In the students' practice module, the previous students' assignments are preserved, including text, webpage, simulation teaching videos, and students' video pop-talks. To put students at the center of the learning activity, it is necessary to change their way of learning, where a little change may lead to great difference in learning effects, as analyzed by the Butterfly Effect theory, the result will be unpredictable. Learning is most effective when the learner is in need, which is highly motivating as well. Research outcomes of each group are required to be presented in the form of videos, therefore, students need to come up with complete, logical, and systematic reports, which help students reorganize, generalize, and internalize the learning outcomes. Students make instructional reflections using video tools. Each of them is required to tell about his or her reflection in front of the lens, express the learning outcomes in his or her own language, structure the system of the learning content and summarize the core concept of it.

This course puts more emphasis upon fostering students key capacity, not on the amount of knowledge learnt, providing students with the opportunities to use tools for learning, to learn how to communicate with others, to emphasize self-regulation, and help students gain practical working competence. To be noted here,

the instructional reform is not aimed at merely increasing students' interest in learning, which is a low-level function of the reform, but promoting students' thinking ability which is a high-level function. Increasing students' interest in learning is not the aim but a measure. It is not right to choose the method of teaching just for interest's sake; the choice should be made according to central goals.

From the perspective of learning resources, the platform provides the students with individualized learning support and basic learning materials for cooperative learning. The up-to-date materials enrich the learning content. The teacher presents opinions on social problems, which helps reduce psychological distance between the teacher and students, promotes in-depth communication between them, as well as allowing the teacher to reflect on his own teaching.

These resources accumulate into a rich and original database. Such precious teaching resources are important materials for the teacher's later teaching and research. Students may learn from each other, while the teacher may summarize his teaching process. When the number of videos in the "pop-talk" increases to 100, an educational monograph may come from them.

1.4.8 Instructional Assessment

In higher education, the assessment work after teaching is the most difficult of all the teaching sessions. The writer disagrees with the detailed, precise grading used in universities, and assessing students according to how much they have remembered. The purpose of distinguishing students should be weakened. What really counts is "assessment for learning"(Mckeachie 2002). As long as the assessment is not for grading students only, it also serves as effective stimulation in promoting students' learning. The writer proposes "ambiguous" assessment, in which general grading is given, concentrating on basic features of an effective student instead of details they have learned. Teaching work must aim at promoting students' high level competence, yet for students' such competence has a variety of ways to present, some of which are hard to discover and measure. When assessing students' level of development or capacity for creative thinking, it is not effective to use simple tests or time-connected work as criteria. Many learning outcomes do not show immediately. They may be stimulated after several years during an activity, so they should not be assessed immediately after learning.

The scores given to students in exams cannot always reflect students' true value. Learning activities themselves are more important than scores. The scores are of great importance to students, yet they do not mean much. Valuable learning is that which enables meaningful change in the learners, this can be on a behavioral level, or on mental level. In whatever way, the teacher's teaching behavior should help students see a meaningful change in their learning. Here an instructional difficulty appears, i.e., only students themselves know whether meaningful learning has taken place. Then, it is impossible for the teacher to evaluate the real

meaning of students' learning. If he or she can properly measure how meaningful the students' learning is to them, the teacher can assess the students according to the result of the measurement. Yet, this is not possible, even though the teacher has the duty to assess students.

In assessing students' achievements, the teacher must be fair. For example, if one student is always punctual while another is often absent, cramming just before exams with borrowed notes, achieves the same score, it is not fair. Generally speaking, the so-called fair grading enables high scores to those who actively participate in the organized activities, complete assignments carefully, and understand the teaching content properly, while those cannot effectively accomplish these learning activities receive low scores. However, grading in the form of scores cannot reflect the true outcome of students' learning. In teaching practice, there are many aspects of uncertainty. Even though some students come to the class, are attentive, and get high scores in exams, they may not experience any important change. On the other hand, the absent students may find an occasional class and lecture an important learning experience. Therefore, we cannot judge students' value and mentality merely based on their grading. It is not necessary that students with low grade bear with low value and competence; nor can we affirm that the students are of great value just because some students get high scores. What should be noted here is that, generally speaking, the teacher should not make relative evaluation of the students and absolute evaluation should be made instead. The teacher should focus on creating opportunities in teaching activities, enabling students' meaningful learning.

The assessment of students' learning effectiveness should be made in a comprehensive way, and various methods of assessment should be taken to get students' learning data. Counting students' achievement comprehensively can improve learning effectiveness. It is not accurate to judge students' learning performance through just a final exam at the end of a semester. There is only one final exam in a semester which is not enough to consistently and effectively show the students learning ability, and for the teacher to make teaching decisions upon. Yet the teacher and students need to know how well the students can do. If there is only one exam, it is difficult to organize and test the teaching content in the whole semester. In other words, aiming at the exam, students usually study just before it, in which their gains are limited. If the items in the exam require careful learning for a whole semester, students cannot achieve a good grade.

If they cannot receive information about their learning outcomes throughout the course, the students would be less motivated. Assessment is not merely for grading, but for promoting learning. Fair methods of assessing the students should be employed. In order to promote students' motivation for learning, the teaching should be able to interest students, guarantee students self-regulation. The efforts students put into learning activities are more important than scores in the exam.

Generally speaking, learning content remembered in a short time just to pass closed book exams is soon forgotten after the exam. The aim of higher education is not for students to remember information for exams, but to think about how to make creative use of the information learned, and how to solve problems.

Table 1.1 Assessment format

Regular grade (60 %)	Individual tasks (30 %)	Microteaching (18 %)
		Self-reflection project 200 (6 %)
		Reading report (6 %)
	Group tasks (30 %)	Reading presentation (10 %)
		Educational video (20 %)
Final grade (40 %)	Final exam (40 %)	Definitions (10 %)
		Question answering (20 %)
		Discussion (10 %)

Note Percentages represent the proportion of the item in the total score

The observation points for students' assessment in this course are divided into two parts: basic knowledge and basic competence. Basic knowledge mainly examines students' mastery of declarative knowledge and procedural knowledge; examination of basic competence refers to the ability to apply what has been learned, including students' essays, videos, simulation class, in-class presentation, group learning, participation, and contribution to activities in class.

Different from the former way of assessment in which the teacher acts as the subject of assessment, with students passively receive the teacher's assessment, and making judgment merely according to scores in exam. This course carries out multiple assessments and combines these assessments made by the students themselves, the group, the class, and the teacher as the assessing method. We are not only concerned with students' performance in the final exam, but also with assessing students according to requirements at different stages, and focusing on students' learning process.

Here we take the first semester in the academic year 2012–2013 as an example, illustrating the assessment format of the course, Fundamental Theories of Learning and Teaching (see Table 1.1). In the assessment format, regular grades account for 60 % of the total score, while the final grade accounts for 40 %. In a regular grade, individual tasks and group tasks account for 30 % of the total, respectively. Individual tasks include microteaching, Self-reflection Project 200, and reading report; group tasks include reading presentation, educational video, and report.

Microteaching requires each student choose certain content from a primary or secondary education textbook, design a teaching plan and make course materials as well. Each student gives a micro-simulation teaching, and explains his or her teaching design; feedback is given from peers and the teacher. The other students play the role of pupils while one of them is teaching (peer teaching). Students and the teacher fill in a form of observation and records, and they evaluate the teaching from the perspectives of content, goal, method, process, and skills. Scores were given by the students, and the teacher accounts for 50 % of the total score.

Self-reflection Project 200 is assessed by the teacher. The teacher marks journals at regular intervals. The criteria include whether the journal has a distinct theme, original point of view, in-depth thinking, and genuine feelings. At the end

of the semester, the teacher counts the number of qualified journals, gives a full mark (100) for 5 or more such journals, and 80 for 4, 60 for 3, respectively.

Reading reports last for a month and a half, beginning from the third week. Each group member writes a book report after reading a book. The teacher is to assess this task. Grading is given according to the quality of the report, judging from the aspects of summary of the book, the author's opinion, form of argument and writing norms.

Reading presentation is first a reading task for each group. After each member has written a report, the group members discuss and summarize the most valuable content, and give a presentation in class. The grading of the presentations is given by the teacher and students in other groups (50 % from the teacher and 50 % from the students). In addition, within the groups, students evaluate their participation and contribution to the activity, each member makes a self-evaluation and comes up with the weighted value. The grading of the group with the weighted value for each member is the grading for each student.

Educational videos are shot, edited, and presented by each group. The teacher and members of other groups fill in an evaluation form for the task. Criteria include theme presentation, script creation, depth of reflection, shooting techniques, and effectiveness. Grading of each presentation is determined by the teacher's assessment and assessment from other groups (accounting for 50 %, respectively). Furthermore, within each group, students evaluate their participation and contribution to the activity, each member makes a self-evaluation, and comes up with the weighted value. The grading of the group with the weighted value for each member is the grading for each student.

Final examination was aimed at investigating students' mastery level of big ideas in the course, which includes students' understanding of the concept of learning, teaching, and technology. Case study methodology is used to check students' ability to apply theories to practice, and eventually help promote their competence in applying what they have learned.

1.5 Effectiveness of the Model

This instructional model changes teachers' teaching behavior of one-way transmission of knowledge, helps students take an active role in instructional activities, and creates conditions for mutual communication among students. Students accomplish in-depth learning effectively, especially the learning goals set by the transformation theory. Most of them develop a sense of achievement. They gain not only knowledge, but also the experience of the essence and spirit of learning activities. Therefore, students are highly satisfied with this course. Their positive assessment on this course is spread widely among students of various grades. In 2009, Prof. Mang Li was elected "the most popular teacher among students" by undergraduates in the College of Educational Technology. And in the same year,

this course was chosen to be "Excellent Course of the Nation" by experts in the committee supervising the field of educational technology.

Students' feedback about the course in the previous years can be found from the teaching assessment forms filled by students developed by the Office of Educational Administration, Beijing Normal University. At the end of each semester, the university arranges students to assess each course and the teacher teaching it, which is carried out online anonymously. Students fill in the forms and answer several assessing questions. Data is presented here from the assessing forms for this course filled out by students over the past three years, as well as answers to subjective questions (see Appendix A, B, C and D).[3]

Judging from the results of students' assessment on the teacher in the past three years, the score of the course, and the teacher are both higher than the university average. Students as a whole respond positively to this course, and they point out many of its merits. When they mention the teacher, they explain their feelings and impressions.

Chosen from students' works in self-reflection Project 200, several reflection works show the effectiveness of this course from a certain aspect. One student wrote, "Prof. Li, I've made up my mind to immerse myself in teaching. It is great to be a good teacher! The teaching profession takes a lot of learning!" Another one writes, "With the new book, Fundamental theories of learning and teaching, in my hand, I was astonished at first, the theories, made me nervous, and I felt it would be dull. After listening to your lectures, I found it is totally different from what I imagined. This course is so interesting. I feel released. What's more, the teacher teaches with his really original thoughts. The 3 h class time is worthwhile. I believe that, with the teacher's help, I can build up my own thoughts". Still another writes, "Pleasant surprise is the first impression this course leaves me. To tell the truth, though it is somewhat evil, as a typical boy of science, before taking the class, I did not expect much from it. Yet Prof. Li Mang made me feel that I'm too naïve to think that way. I like this course, not only because of the good teaching methods and style of Prof. Li, but also the teaching content transformed my thinking. The concept Mr. Li teaches us takes the place of the former state of a mess in my mind. I feel very happy to be in this profession".

However, some prominent problems arise from the result of assessment from students, which requires attention. Some students evaluate "average" or "below average" as the general assessment, and there are assessments of "average" and "below average" for some other observation points, especially for textbooks and reference books for this course. Some students provide suggestions on how to improve the textbook. So the next step for the teacher should be to examine these problems carefully and make improvements.

[3] All assessing forms are from the network of administrative management system of the Office of Educational Administration, Beijing Normal University, and with the permission from the office.

Moreover, the assessment form as the assessing tool here has some problems. For example, assessment items are too simple, no progressive questions are provided. The items are inadequate to show the reasons for the existing problems.

It is of great importance to regularly check students' feedback on the teaching, which enables the teacher to discover teaching problems, and make adjustments. Project 200 is an ideal window into students' state of learning, which provides valuable information for the teacher. To examine students' feedback together with other teachers can greatly improve the teacher's teaching. The teacher should also make further study based on the feedback information.

1.6 Conclusion

The instructional model oriented toward improving teaching ability in this course is the tool for carrying out teaching and learning activities developed and guided by the writer's teaching philosophy. Through designing and implementing this model, the writer tries to help release students from the bitterness of learning, to enable students' effective learning, and to realize the development of students' lives. The writer believes that the essence of human learning is painful, for students must put great effort into learning activities. Teachers are helpers. A teacher's duty is to help students experience happiness, learn effectively, and promote their teaching ability. Effective communication is one of the goals of this instructional model, and instructional activities are processes of communication.

This instructive model focuses on promoting students' learning ability, which shows explicitly the belief that a student's learning is as important as teachers' teaching in higher education. Universities are places not only for teachers' teaching, but also, more importantly, for students' effective and in-depth learning. The learning activity is a dynamic activity, in which students are not containers, and teachers cannot simply pour knowledge into them. Psychologists' research has proven this. People believed that memory is like a photo taken and preserved, and in this way, recall is like getting the photo out and taking a look. With the development of brain science and psychology, researchers came up with a new memory model. According to this model, memory is like drawing on paper with a pencil, and then the picture is lost. When recalling it, changes take place in the memory content, in which important parts will remain, and less important ones disappear. Here we see that, learning is a dynamic way of knowledge construction.

Appendix A: Students' Assessing Form for the Course "Fundamental Theories of Learning and Teaching" (Academic Year 2012–2013)

Students' major	Educational technology	Grade	2010
Type of course	Compulsory	Number of participants	42
Teacher's name	Mang Li	Teacher's title	Professor
Work unit	Faculty of Education, Beijing Normal University		

Assessment items	Detailed items	Percentage of each item					Final score	Average of the university
		Excellent	Good	Average	Below average	Poor		
General assessment	Your general assessment of the teacher's teaching	95.2	4.8	0.0	0.0	0.0	4.95	4.62
	Your general assessment of the course	85.7	11.9	2.4	0.0	0.0	4.83	4.57
Assessment of teacher's teaching quality	The teacher works earnestly and responsibly	85.7	11.9	2.4	0.0	0.0	4.83	4.65
	The teacher teaches clearly	90.5	7.1	2.4	0.0	0.0	4.88	4.54
	The teacher uses effective teaching methods	88.1	9.5	2.4	0.0	0.0	4.86	4.51
	The teacher teaches with key points and difficult points stand out	78.6	14.3	7.1	0.0	0.0	4.71	4.48
	The teacher attaches importance to teaching method	83.3	14.3	2.4	0.0	0.0	4.81	4.48
	The teacher attaches importance to communication with students	92.9	7.1	0.0	0.0	0.0	4.93	4.48
	The teacher teaches with his/her own style	88.1	11.9	0.0	0.0	0.0	4.88	4.58
	The teacher's character and morals have a positive influence on you	85.7	14.3	0.0	0.0	0.0	4.86	4.44

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Assessment items	Detailed items	Percentage of each item					Final score	Average of the university
		Excellent	Good	Average	Below average	Poor		
	The teacher can stimulate your learning motivation	76.2	23.8	0.0	0.0	0.0	4.76	4.37
	The teacher's teaching increased your interest in this course	78.6	19.0	2.4	0.0	0.0	4.76	4.35
	The teacher's teaching increased your ability	71.4	26.2	2.4	0.0	0.0	4.69	4.39
Assessment of the course	This course has enough class hours	61.9	28.6	9.5	0.0	0.0	4.52	4.40
	This course has appropriate content difficulty	71.4	21.4	7.1	0.0	0.0	4.64	4.38
	This course has appropriate content coverage	73.8	21.4	4.8	0.0	0.0	4.69	4.41
	This course has appropriate learning load for students	71.4	23.8	4.8	0.0	0.0	4.67	4.35
	This course is important to you	73.8	23.8	2.4	0.0	0.0	4.71	4.42
	This course has appropriate textbook or reference books	50.0	38.1	11.9	0.0	0.0	4.38	4.27
	This course has tightly connected teaching steps	64.3	33.3	2.4	0.0	0.0	4.62	4.39
	This course connects with formerly taken courses	52.4	38.1	9.5	0.0	0.0	4.43	4.26

Appendix B: Students' Assessing Form for the Course "Fundamental Theories of Learning and Teaching" (Academic Year 2011–2012)

Students' major	Educational technology	Grade	2009
Type of the course	Compulsory	Number of participants	54
Teacher's name	Mang Le	Teacher's title	Professor
Work unit	Faculty of Education, Beijing Normal University		

Assessment items	Detailed items	Percentage of each item					Final Score	Average of the university
		Excellent	Good	Average	Below average	Poor		
General assessment	Your general assessment of the teacher's teaching	85.2	13.0	0.0	1.9	0.0	4.81	4.57
	Your general assessment of the course	83.3	14.8	0.0	1.9	0.0	4.80	4.52
Assessment of teacher's teaching quality	The teacher works earnestly and responsibly	88.9	9.3	1.9	0.0	0.0	4.87	4.60
	The teacher teaches clearly	83.3	14.8	1.9	0.0	0.0	4.81	4.50
	The teacher uses effective teaching methods	79.6	18.5	1.9	0.0	0.0	4.78	4.47
	The teacher teaches with key points and difficult points stand out	70.4	22.2	7.4	0.0	0.0	4.63	4.43
	The teacher attaches importance to teaching method	74.1	22.2	3.7	0.0	0.0	4.70	4.43
	The teacher attaches importance to communication with students	83.6	12.7	3.6	0.0	0.0	4.80	4.42
	The teacher teaches with his/her own style	85.5	12.7	1.8	0.0	0.0	4.84	4.52
		74.5	16.4	9.1	0.0	0.0	4.65	4.39

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Assessment items	Detailed items	Percentage of each item					Final Score	Average of the university
		Excellent	Good	Average	Below average	Poor		
	The teacher's character and morals have a positive influence on you							
	The teacher can stimulate your learning motivation	65.5	27.3	5.5	1.8	0.0	4.56	4.32
	The teacher's teaching increased your interest in this course	69.1	20.0	9.1	1.8	0.0	4.56	4.30
	The teacher's teaching increased your ability	61.8	30.9	7.3	0.0	0.0	4.55	4.34
Assessment of the course	This course has enough class hours	54.5	40.0	3.6	1.8	0.0	4.47	4.34
	This course has appropriate content difficulty	61.8	36.4	1.8	0.0	0.0	4.60	4.33
	This course has appropriate content coverage	63.6	30.9	3.6	1.8	0.0	4.56	4.36
	This course has appropriate learning load for students	49.1	43.6	5.5	1.8	0.0	4.40	4.31
	This course is important to you	74.5	23.6	1.8	0.0	0.0	4.73	4.38
	This course has appropriate textbook or reference books	29.1	54.5	14.5	1.8	0.0	4.11	4.21
	This course has tightly connected teaching steps	63.6	36.4	0.0	0.0	0.0	4.64	4.33
	This course connects with formerly taken courses	41.8	56.4	1.8	0.0	0.0	4.40	4.22

Appendix C: Students' Assessing Form for the Course "Fundamental Theories of Learning and Teaching" (Academic Year 2010–2011)

Students' major	Educational technology	Grade	2008
Type of the course	Compulsory	Number of participants	44
Teacher's name	Mang Le	Teacher's title	Professor
Work unit	Faculty of Education, Beijing Normal University		

Assessment items	Detailed items	Percentage of each item					Final Score	Average of the university
		Excellent	Good	Average	Below average	Poor		
General assessment	Your general assessment of the teacher's teaching	86.4	11.4	2.3	0.0	0.0	4.84	4.56
	Your general assessment of the course	79.5	11.4	9.1	0.0	0.0	4.70	4.51
Assessment of teacher's teaching quality	The teacher works earnestly and responsibly	75.0	22.7	2.3	0.0	0.0	4.73	4.59
	The teacher teaches clearly	79.5	15.9	4.5	0.0	0.0	4.75	4.48
	The teacher uses effective teaching methods	79.5	13.6	6.8	0.0	0.0	4.73	4.45
	The teacher teaches with key points and difficult points stand out	70.5	25.0	4.5	0.0	0.0	4.66	4.42
	The teacher attaches importance to teaching method	79.5	13.6	6.8	0.0	0.0	4.73	4.41
	The teacher attaches importance to communication with students	79.5	15.9	4.5	0.0	0.0	4.75	4.40
	The teacher teaches with his/her own style	84.1	13.6	2.3	0.0	0.0	4.82	4.52
	The teacher's character and morals have a positive influence on you	79.5	20.5	0.0	0.0	0.0	4.80	4.37

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Assessment items	Detailed items	Percentage of each item					Final Score	Average of the university
		Excellent	Good	Average	Below average	Poor		
	The teacher can stimulate your learning motivation	75.0	25.0	0.0	0.0	0.0	4.75	4.30
	The teacher's teaching increased your interest in this course	63.6	34.1	2.3	0.0	0.0	4.61	4.29
	The teacher's teaching increased your ability	79.5	15.9	4.5	0.0	0.0	4.75	4.33
Assessment of the course	This course has enough class hours	65.9	27.3	6.8	0.0	0.0	4.59	4.33
	This course has appropriate content difficulty	59.1	27.3	13.6	0.0	0.0	4.45	4.31
	This course has appropriate content coverage	59.1	34.1	6.8	0.0	0.0	4.52	4.34
	This course has appropriate learning load for students	52.3	38.6	6.8	2.3	0.0	4.41	4.30
	This course is important to you	70.5	20.5	9.1	0.0	0.0	4.61	4.39
	This course has appropriate textbook or reference books	50.0	27.3	18.2	4.5	0.0	4.23	4.21
	This course has tightly connected teaching steps	63.6	29.5	6.8	0.0	0.0	4.57	4.33
	This course connects with formerly taken courses	52.3	34.1	13.6	0.0	0.0	4.39	4.23

Appendix D: Students' Detailed Comments on the Course Fundamental Theories of Learning and Teaching

Number	Item	Opinions and suggestions
1	What are the outstanding advantages of the teacher's teaching in your opinion?	Various forms, has his own focus
2		Communicates a lot with students, has his own original thought
3		Many advantages, learned, kind
4		The teacher gives genuine presentations, using vivid examples from daily life
5		Dignified, sincere, doesn't exaggerate, great ideas put in writing, humorous and thoughtful, good grounding
6		Genial, humorous, insightful, shares with student thoughts and world view
7		Gives students opportunity to realize their potentials, combines learning and teaching
8		Genial, thoughtful
9		Focus on learning and teaching
10		Natural and various forms
11		Practical and vivid
12		Humorous and approachable
13		Has original thoughts
14		Unifies knowing and doing, imparts knowledge and educates people. Learn to educate, behave to civilize
15		The teacher is responsible and humorous
16		Knowledgeable
17		Humorous and profound
18		Well documented in class, the teacher is genial. I like it
19		Genial, rigorous, having personality charm, always providing constructive suggestions
20		Clear and humorous language use
21		Responsible, teaches carefully, reasonable teaching arrangement
22		Knowledgeable, high academic literacy, clear in-class presentation, various activities, comments to the point
23		Wide range of knowledge, genial, clear lectures, air of a master, original thought

(continued)

(continued)

Number	Item	Opinions and suggestions
24		Careful
25		Humorous and responsible
26		Careful, responsible, and kind
27		Careful, responsible, having original way of teaching, emphasizes communication with students, enriched teaching content, practical
28		Good lectures
29		Original thought
30		The teacher is humorous, has got original thought on many issues, and willing to share with students. Special way of teaching, very interesting
31		Interaction
32		Humorous lectures, understandable, concerning various aspects, guiding us in thinking. Makes good use of resources, much interaction, communication, and guidance
33		Interesting lectures, in-depth knowledge.
34		Pithy and original thought, good at inspiring students, various teaching methods
35		Vivid and detailed explanation, thoughtful
36		Humorous lectures, careful and responsible
37		Good at communicating with students, original way of teaching, good at inspiring students, concerned with fostering thinking abilities
38		Charming personality, clear lectures, excellent teaching
39		Careful teaching, responsible, genial. I like listening to this teacher
40		Good lectures.
41	What is your largest gain in this course?	Gain knowledge about learning and teaching, get to know about this field
42		Get to know basic qualities of teachers, and issues to consider as a teacher in the future
43		Attitude and opinion toward teachers changed
44		Learning and teaching, important issue, much to learn

(continued)

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Number	Item	Opinions and suggestions
45		Learned personal charm from the teacher, and experienced the pleasure of learning by doing
46		Gained much knowledge about learning and teaching, learnt to think, learnt to find learning and teaching in daily life, became interested
47		Group cooperation
48		Gained own understanding on how to learn and teach, experienced being a teacher through micro-teaching activity
49		Learned learning and teaching theories, got new ideas about instruction, experienced teaching and video making process
50		Learned teaching skills
51		Competence increased, knowledge widened
52		Learned fundamental principles of teaching and learning, and how to learn and teach well
53		Learned dialectic relationship between learning and teaching
54		Got to know fundamental theories of learning and teaching, began to reflect on the importance of teaching and learning
55		Learned much about learning and teaching
56		Learning much about qualities of people and especially of teachers
57		Ability to cooperate with group members, details to pay attention to while teaching
58		Realized problems in teaching and learning.
59		Teaching method.
60		Learning strategies and teaching strategies
61		Learned the learning theory and teaching theory of the profession of educational technology
62		Increased my sense of responsibility as a group leader
63		Gained knowledge that I cannot learn from textbooks
64		Learned a lot, know more about teaching and learning
65		Learned a lot of theories on learning and teaching

(continued)

(continued)

Number	Item	Opinions and suggestions
66		Learnt how to teach, and how to conduct myself
67		Learned relationship between learning and teaching
68		Improved thinking ability
69		(learned) the conflict between learning and teaching, and much about the profession
70		Knowledge such as instructional concepts
71		Learned what a good educator is like
72		Learning methods
73		Learn much which is not in the textbooks
74		Learn many theories of learning and teaching, set foundations for future research or teaching
75		Learn to reasonably view and reflect on various problems in teaching and learning
76		Gain happiness from working in groups
77		What qualities should an excellent teacher have
78		Get new understanding about teaching
79	In which aspects do you think the teacher's teaching needs improvement?	Now I feel all is good
80		Very good. Nothing for now
81		Nothing for now
82		No comment
83		No comment
84		Already very good
85	What do you suggest for the curriculum and teaching activities of this course?	More practical activities
86		Very good
87		Perfect
88		Change to 3 credits
89		Keep this classical subject, even bring it forward
90		The activities are all very good
91		Other aspects are good. Change the lecture time. Nighttime is not appropriate for a professional course

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Number	Item	Opinions and suggestions
92	What do you suggest for reform in this course?	Hope the textbook is more related to the world, instead of piling up theories
93		More practical activities
94		Very good. Nothing for now
95		Nothing more. I like the teacher
96		None
97		Very good

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Part II
Refreshing Lecturing

Chapter 2
Beyond Survival: Using Games to Thrive in Lecture

Whitney Berry

Abstract Music theory presents a challenge for both students and instructors. Students enter the course with extremely varied levels of prior knowledge and are expected to become fluent with the nomenclature of the discipline in a relatively short period of time. Adding to the challenge is the fact that music theory is commonly taught in a traditional lecture format, in part because instructors perceive it as efficient lack of training in alternative pedagogical techniques. In order to be successful, a teaching approach for music theory (and other courses with similar characteristics) needs to be both efficient and effective. Theory Survivor is an instructional strategy that utilizes the efficiency of lecture and capitalizes on the academic and social benefits of cooperative learning with the added motivational benefits of a games-based approach. This strategy has an innate popular appeal and capitalizes on group cohesion, extrinsic rewards, and positive peer pressure as motivational factors. Theory Survivor goes beyond mere survival to produce a rich educational environment within which students thrive.

2.1 Prelude

It is the beginning of a typical day on Music Theory Island. My students enter the classroom and take their seats in one of the several small, circular groupings of desks. They greet the other members of their tribes, get out their homework for me to check, and await instructions for the daily challenge. Today, I give a brief review lecture to the large group and answer any questions the students have about their homework assignment. I then post the challenge on the large screen at the front. Today, the challenge consists of several lines from a workbook page on key signatures. The tribe leaders answer any additional questions from their fellow

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members and make sure everyone understands the task at hand. Then, the "beep" of stopwatches being started, followed by the furious scratching of pencils on paper, can be heard throughout the room as the serious business of the challenge begins.

As the class progresses, excited chatter, peer teaching, and occasional eruptions of laughter can be heard as the students work their way through the challenge. A typical comment often overheard at this stage in the class is something like, "I know it. I just need to know it FASTER!" Any expressions of frustration or lack of understanding are met with sympathetic reactions from tribe members and often followed up with further explanation or helpful suggestions. Amid the often chaotic looking and sounding scene, I circulate offering help and encouragement as needed, but more often simply observing and staying out of the way. To an unfamiliar observer, the room looks more like a cocktail party than a lecture class, which is precisely my intent.

After reading this description of students actively engaged in challenging work, collaboration, and peer instruction, you might think that my students are motivated to participate in this manner by the incentive of a good grade in the course or, conversely, the fear of a poor one. Although on some level, it is true that the students care about their learning and want to do well on an individual level, this is not what drives them to succeed on a daily basis. In Theory Survivor, it is quite simply all about winning the game.

This is my class. I acknowledge that it is not a "normal" class in terms of the instructional method I use. If a person were able to simultaneously look in on all of the music theory classes that take place each day in the United States, I would hazard a guess that mine would stand out. What *is* normal about my class is that I teach the same content to the same type of students as hundreds of other college music theory instructors. My students come to me with extremely varying degrees of prior knowledge in music theory and certain expectations about what, and how the course will be taught. With regard to the former, many have had performance experience on their instrument in high school, but relatively little specific instruction in music theory. With regard to the latter, most of them picture sitting in a classroom with desks in neat rows, taking notes while a professor stands at the front and lectures. They expect that the course will be boring and perhaps difficult and view it simply as a requirement that they will have to somehow survive in order to obtain their degree.

In fact, at what I would estimate is a majority of institutions, these initial perceptions and expectations are very close to reality for students in entrance-level music theory courses. What is different about my class is that students' initial expectations are immediately thwarted as they encounter an instructional method much different than their preconceived notions. These students may exemplify the norm at the outset, but after their experience in Theory Survivor their perceptions about and attitudes toward music theory are much different.

2.2 Ready to Play: Setting the Context

Theory Survivor is an instructional technique I developed to teach and reinforce the fundamental concepts and nomenclature in music theory. It is a cooperative, games-based method, based on the popular CBS reality show *Survivor*, which incorporates both the efficiency of the lecture approach and the effectiveness of active learning. In order to fully understand this technique, it is necessary to first understand its various facets and to situate it within the contexts of music theory instruction, active learning, and cooperative and games-based instructional methods.

2.2.1 Music Theory Instruction

Music theory is a universally required course for all music majors in every college that offers a music degree. Typically, it is a course that is endured, rather than enjoyed, by both instructors and students. Students often find music theory boring and dull. There are fundamental concepts and nomenclature to learn like note names, scales, intervals, and key signatures. On top of these, there is a seemingly endless litany of rules to learn and procedures to master. In short, it is a very content-laden course in which students must assimilate information and develop skills within a relatively short time frame.

Instructors, on the other hand, may find the course difficult to teach, as the content is very elementary and obvious from their perspective. They can be frustrated when students do not understand basic concepts and may lack the ability to effectively explain them to a novice-level learner.

Music theory is also a course that students typically enter with a wide diversity of backgrounds. This diversity is in part due to the fact that many American colleges do not have a specific prerequisite or entrance qualification for the course and a majority of students do not often study music theory in high school (Livingston and Ackman 2003; Jones and Bergee 2008). This fact, coupled with the propensity for the course to be taught in a traditional lecture format by an instructor who may understand the content but not necessarily how to teach it, provides a recipe for potential academic disaster.

A commonly held perception of college teaching in general is that content is more important than technique. In other words, more value is placed on *what* an instructor knows than whether or not the instructor can effectively teach it. Historically, educators at the college level have received very little training in instructional methods and course design, yet teaching often makes up a significant portion of their job descriptions (Weimer 1990).

With little training in teaching techniques, many instructors choose a lecture approach because they perceive this method as the most efficient way to deliver content. Davis (1993) describes "traditional" lecturing as "one-way communication in which the student is a passive participant" (p. 131). Similarly, Bain (2004) states that most professors' ideas about teaching focus on the role of the teacher rather than

that of the student. In this conception, "teaching is something that instructors do to students, usually by delivering truths about the discipline" (p. 48). Additionally, Vega and Tayler (2005) state that because professors have such limited training in pedagogy, they tend to emulate the traditional instructor-centered "transmission model" of teaching because it was the model in which they themselves were trained (p. 83).

Lack of formal training and a tendency for faculty to emulate the techniques of their own past teachers are pervasive issues in music theory and musicianship pedagogy as well. Zbikowski and Long (1994) state that teaching methodologies are of "less concern" to teachers at the post-secondary level and that music theory instructors tend to "teach as (they) were taught, changing (their) habits only in the face of unique or epochal circumstances" (p. 136). Similarly, in a more recent survey study, Anderman (2011) found that although most instructors considered themselves to be theory or composition content specialists, a majority indicated that they had not received any specialized pedagogy training in the field.

In one of the relatively few books on music theory teaching at the college level, White (2002)[1] echoes the same sentiment. Speaking of faculty preparation for teaching, he states that "most musical academics appear to operate under the assumption that if teachers thoroughly know their substantive areas of musical scholarship and research or creative activity… that they can usually learn to be good teachers (p. 23)." This position is evident in the rest of the book, which deals primarily with aspects of course curriculum and order of presentation. It is also emblematic of the tendency in the literature to focus more on the *what* of music theory teaching and less on the *how*.

Although there has been an increased interest in music theory pedagogy in recent decades, the literature tends to focus on curricular issues and general pedagogical philosophies rather than specific teaching techniques (Berry 2008). Even within the *Journal of Music Theory Pedagogy*, the most noted journal in the field, it is more common to see the literature on general content- or curriculum-related topics such as counterpoint (Mancini 1989; Hanson 1992, 1995), and musical analysis (Zeeuw 1987; Folio 1991; Winold 1993; Bass 2002; Pacun 2003; Harter 2009) than teaching approaches.

Although there are some articles that deal with specific teaching techniques or strategies, such as mapping of voice leading (Royal 2009 or solfège drills (Kazez 1992), it is more common to see the literature on general teaching tools such as solmization systems (Smith 1991; Lorek and Pembrook 2000), music listening (Alegant 2007), or generalized methods, such as Shenkerian (Riggins and Proctor 1989) or neo-Riemannian (Engebretsen and Broman 2007) approaches to musical analysis.

[1] The publication date listed here is for the most recent (2nd) edition of this book. It should be noted, however, that the only difference between this edition and the first (1981) edition is the addition of a small section on technology usage. The same pedagogical ideas are presented in both editions, which reinforces the argument that little has changed in college music theory teaching in over three decades.

Two exceptions to the overall content-over-practice focus in this journal are worth mention, however. Zbikowski and Long (1994) provide a convincing justification for, and specific examples of, the incorporation of cooperative learning methods in music theory. This article draws on the research on cooperative learning done by Johnson and Johnson (1994) during the same time period and represents a good, albeit isolated, example of music theory instructors looking to educational research to inform and transform their practice.

Similarly, Lively (2005) advocates an approach to music theory instruction based on D. A. Kolb's (1981) typology of learning styles and presents examples of lessons and instructional materials designed to capitalize on students' varying styles of learning. Although evidence for the efficacy of matching instructional methods to the learning preferences of students (and even the very existence of distinct learning "styles") has recently been disputed in the literature (e.g., Riener and Willingham 2010), this article at the very least represents an effort toward research-based practice in music theory instruction.

To offer some perspective on the above examples, it should be noted that these represent a relative minority of writings in the field of music theory pedagogy and do not necessarily reflect common practice among music theory instructors. By and large, music theory instructors may be hesitant to implement large-scale changes to their instructional methods because they lack the incentive and skills to do so.

Music theory instructors are challenged with finding a way to deal with diversity in student ability levels within a heavily content-laden course. Those who lack the requisite pedagogical knowledge and skill to do otherwise tend to teach as they were taught, which often means using a traditional lecture approach to transmit information, coupled with homework assignments to practice skills and tests to assess student learning. Although there are a few examples to the contrary, trends and research in college teaching in general have not largely been implemented in music theory instruction.

Theory Survivor utilizes aspects of the "traditional" music theory lecture approach, as the nature of the content requires a certain amount of direct transmission of material. (Students need to know that there are four sharps in the key signature of E major, for example). It also incorporates the traditional elements of homework and tests. Where it differs is that it allows students to complete the transmission–practice–assessment loop within each class period as well. This facet of the technique exemplifies the characteristics of active learning: an approach that has been widely discussed in the literature on college teaching in general.

2.2.2 Active Learning

Although lecture may be the most traditional instructional approach, and in fact still remains one of the most common in college teaching (Lammers and Murphy 2002; Mulran-Kyne 2010), recent research in the field has illuminated a shift to more active learning approaches. The move toward active learning approaches

within the context of a lecture class setting illustrates what Barr and Tagg (1995) describe as a "paradigm shift" in higher education. Instead of a focus on providing instruction, colleges are now focusing on producing learning. Within this new model, the role of the instructor has changed from that of transmitting knowledge to facilitating learning (Vega and Taylor 2005).

Bonwell and Eison (1991) define methods promoting active learning as "instructional activities involving students in doing things and thinking about what they are doing" (p. 1). Although specific techniques may vary, Kane (2004) posits that all "active" and "participatory" learning (1) encourages critical thinking, (2) encourages learners to take responsibility for their learning, (3) engages learners in open-ended activities which emphasize process over product, and (4) places responsibility on the educator to organize appropriate learning activities (p. 277).

Examples of studies examining the efficacy of active learning techniques within the lecture class setting can be found in a variety of subject areas. Huxam (2005) found that the use of discussions and problem-solving exercises within a communications lecture class improved recall and learning. Omatseye (2007) also found that the use of discussions helped to stimulate conceptual thinking and logical reasoning as well as to increase student participation in the learning process.

Gier and Kreiner (2009) investigated the use of content-based questions in PowerPoint-based lectures and found that the use of this more active technique improved students' quiz and exam scores. Revell and Wainwright (2009) found that highly participatory, active learning strategies increased student attendance in lectures and pointed to applied methods and small group teaching as a means to improve teaching excellence.

Yazedjian and Kolkhorst (2007) found that the implementation of small group activities within the large lecture class increased student engagement in the course content and was more enjoyable than the standard lecture format from the students' perspective. Similarly, Gulpinar and Yegen (2005) found that incorporating interactive elements such as questioning and problem-solving activities within an expository lecture enhanced student motivation, attention, and problem-solving skills.

In addition to the ones described above, a host of examples of active learning techniques can be found in content areas such as communications (Schwebel and Schwebel 2002), accounting (Specht and Sandlin 1991), mathematics (Inch 2002), business (Wingfield and Black 2005), and biology (McClanahan and McClanahan 2002), just to name a few. It is clear from looking at the literature that active learning approaches are increasingly being utilized in college teaching in a variety of content areas as a means of enhancing student learning.

2.2.3 Cooperative Learning

Under the broad umbrella of the "active learning" approach, there are many different methods used by instructors. Two such related but often confused

methods are cooperative and collaborative learning. The difference between cooperative and collaborative learning lies in the role of the instructor. Collaborative groups create their own direction and resources, whereas cooperative learning groups (of which Theory Survivor is an example) rely on the instructor to organize learning activities and provide necessary resources (Ventamiglia 1995).

In general, all cooperative learning methods involve groups of students working together toward a goal. However, the literature varies on the specific components of the method. An often cited definition of cooperative learning is provided by Johnson and Johnson (1994), who describe five conditions that are essential for effective cooperative learning. These are the following: (1) clearly perceived positive interdependence, (2) considerable positive (face-to-face) interaction, (3) clearly perceived individual accountability and personal responsibility to achieve the group's goals, (4) frequent use of the relevant interpersonal and small-group skills, and (5) frequent and regular group processing of current functioning to improve the group's future effectiveness.

Slavin (1988) also provides a description of cooperative learning that emphasizes the importance of both a group goal and individual accountability. Although differences exist between the various definitions of cooperative learning, they all include the common themes of groups working toward a goal and individual accountability within the context of learning activities that are designed and initiated by the instructor. Theory Survivor exemplifies this definition of cooperative learning, as it emphasizes both group and individual achievement goals. The way in which it differs is that it uses the context of a game to motivate students to achieve these goals.

2.2.4 Games-Based Learning

Unlike many college music theory students, when my students are asked about their theory class, one of the words they inevitably use to describe it is "fun." This description is often extended to me personally as well, by both students and colleagues, as in, "she's a really fun teacher" or "she makes theory fun for her students." Although in life in general, "fun" is perceived as a positive quality, it is not necessarily perceived this way in relation to college teaching. To have "fun" as an instructional goal may imply frivolity and lack of seriousness about learning. Although serious games of the digital variety are being used and studied in college courses such as chemistry (Antunes et al. 2012; Kavak 2012) and medicine (Kanthan and Senger 2011), some college faculty may look down on the use of games in college classes and view them as unnecessary gimmicks. After all, college students are adults and adults should *learn* in class, not *play*, right?

The construct of play itself is difficult to define. It is one of those things that a person knows innately, but cannot necessarily articulate. Play is commonly accepted as a critical form of learning in childhood, largely due to the contributions of Piaget (1951). A child imitates newly learned concepts and rituals through play in order to assimilate them into their existing schemas. As a child encounters

new ideas, activities, or events, he or she uses play to build new mental models; a process Piaget refers to as accommodation. Contrary to popular beliefs that learning through play is restricted to childhood, Shute et al. (2012) posit that because assimilation and accommodation continue throughout life, play and imitation also remain important cognitive tools into adulthood.

Rieber (1996) defines play as having four attributes: (1) It is usually voluntary; (2) it is intrinsically motivating and not dependent on external rewards; (3) it involves some level of active, often physical, engagement; and (4) it is distinct from other behavior by having a make-believe quality. Huizinga (1950) makes an important distinction between playing a game and being "at play." The former can be imposed or mandated; that is, one can be required to "play a game," but the latter results from the individual entering the conceptual cognitive or cultural space in which play occurs.

Theory Survivor is an example of an educational, or "serious" game, the very definition of which presents some problems in relation to the literature on games and learning. Becker (2010) discusses some of the problems with the literature on serious games and the development of a theoretical framework for the use of games in education. She states, "The study of games for education, even traditional games designed for use in that context, has no broadly accepted research or literature base, and so existing ones must be extended in new ways" (p. 23).

In addition to drawing from research on play and learning (as discussed above), the field of educational games draws on the literature written about games (largely digital) and game design in general. This presents its own problem, as educational games run contrary to one of the primary defining characteristics of a game. Becker (2010) points to the definitions of a "game" presented by the seminal works of Huizinga (1950) and Caillois (1961) who both state that a game must be voluntary to be considered a game. Similarly, McGonigal (2011) cites "voluntary participation" as a requisite trait of a game (p. 21).

Educational games are not voluntary. That is, because they are used as an instructional strategy, the implication is that students are made to participate. Becker (2010) addresses this central conflict and posits that this is the reason that it is necessary to "devise a definition that fits the context (of games in education), which is that subcategory of serious games that are intended for learning" (p. 24).

Although not intended for serious games, McGonigal's (2011) discussion of four necessary game traits is useful in this discussion. McGonigal states that all games need to have the following: (1) a goal, (2) rules, (3) a feedback system, and (4) voluntary participation (p. 21). Malone and Lepper (1987) point to goals, both proximal and distal, and performance feedback as necessary components of challenge, which they describe as one of the types of intrinsic motivation that can be present in any learning situation (p. 230). The components of clear goals and clear and consistent feedback are also central to the theory of "flow" presented by Csikszentmihalyi (1990). It is interesting to note that the attributes of flow theory are similar to that of play and that activities that induce flow also have clear goals, coupled with clear and consistent feedback about whether a person is reaching these goals (Shute et al. 2012).

Although it is missing the requisite element of voluntary participation, I can say with confidence from personal observation over the years that Theory Survivor exemplifies all of the characteristics of a good game. Students learn the social skills of group interaction and cooperation through gameplay (an example of Piagetian assimilation and accommodation) and frequently get "caught up" in the game, thus experiencing a state of flow. Although the distal goal of ultimately "winning" the game and the extrinsic reward of a "fabulous prize" act as motivating factors, the more proximal, and seemingly more intrinsic, goals of attaining a high tribe score on a daily challenge and individual improvement from one challenge to the next seem to serve as the largest motivators.

The term "gamification" has recently been applied to the use of games in education and industry. Gamification is defined as the incorporation of game elements into non-game settings and has been discussed as a means of increasing student motivation and engagement in public schools (Lee and Hammer 2011). Similarly, Whitton (2011) points to the capacity of games to increase motivation and engagement in adult learners as well. In a recent article on the topic, Lee and Hammer (2011) discuss gamification as a means of enhancing the cognitive, emotional, and social development of learners. Although Theory Survivor addresses cognitive and social aspects of learning as well, the area in which it stands out from more traditional methods is in the emotional realm.

Games can provoke a wide range of emotions in the player, both negative and positive (McGonigal 2011). Because games require repeated experimentation, they also inevitably involve repeated failure (Gee 2008). Games allow for repeated experimentation and failure within a low-risk environment by keeping feedback cycles rapid and stakes low. In schools, the feedback cycles are long and the stakes for failure high. Students typically have few opportunities to try and fail without risk, which often produces anxiety (Pope 2003). Gamification helps students on an emotional level by helping students persist through the negative emotions of failure, by "reframing failure as a necessary part of learning (Lee and Hammer 2011)."

Having situated Theory Survivor within the contexts of music theory instruction, active learning, and cooperative and games-based methods, I will now provide a more detailed description of the Theory Survivor game itself.

2.3 Playing the Game: Theory Survivor

In the popular and long-running CBS reality show *Survivor,*[2] contestants are assigned to "tribes" and must work together to attain both group and individual rewards. On each show, the tribes compete in a variety of challenges to win either special prizes or privileges. One such challenge, dubbed an "immunity challenge,"

[2] Survivor, CBS, May 31, 2000-present.

entitles the winning tribe to immunity from the Tribal Council ceremony shown at the end of each episode. During Tribal Council, tribe members secretly vote to eliminate one of their members. Usually, this is a member that has not been fully participating or pulling his or her weight within the tribe. The object of the game is to be the last person remaining, or "Sole Survivor" and win the prize of one million dollars. Although the ultimate goal is an individual one, the success of the tribe as a whole and the way in which their members interact affects the success of each player.

Participants in *Survivor* engage in four major activities: (1) tribal membership, (2) challenge communication, (3) survivor challenges, and (4) tribal council. Tribal membership is determined at the outset of the game by the producers of the show. Grouping may be random or based on demographic criteria such as age or gender. Tribes are not permitted to self-select their membership, nor is grouping based on proficiency in any particular skill. Challenge communication in Survivor is the means by which tribes are informed of the various challenges. Typically, this takes the form of some sort of written message delivered to the tribes. Survivor challenges are competitions of various kinds, either group or individual, in which tribes compete to earn rewards. The rewards in Survivor are on three basic types: (1) immunity challenges where tribes compete to win immunity from the Tribal Council, (2) reward challenges where tribes compete to win special rewards or privileges such as food, supplies, or activities, and (3) special or "twist" challenges in which a change to the game is presented.

2.3.1 Theory Survivor as Cooperative Learning: Student Teams Achievement Divisions

These four activities mirror the Student Teams Achievement Divisions (STAD) active learning technique created by Slavin (1991). STAD have been used in both public school and college settings and are best suited to teaching "well-defined objectives with single right answers" (p. 73). Students are assigned to four-member heterogeneous groups, with a mixture of higher- and lower-achieving students. The instructor presents a lesson, and students work in teams to master the material. After the teams have worked together, individual quizzes are given to assess students' understanding. The cycle of activities (lesson, team work, quiz) typically occurs over a period of three to five classes. Theory Survivor merges the central components of the Survivor television show with the STAD technique to create a unique and motivational active learning experience. The following section describes the components of Theory Survivor through the lens of the four-part STAD technique.

2.3.1.1 Grouping: Tribal Membership

The first component of the STAD technique is heterogeneously grouped teams. In STAD, the instructor assigns students to four-member teams. These groups are designed to be heterogeneous in terms of performance level, gender, and ethnicity. In Theory Survivor, I group my students heterogeneously, but primarily by performance level. Although I do try to ensure that each tribe has a mix of male and female members, I do not feel that the demographic factors of gender and ethnicity are particularly relevant grouping criteria in this situation.

Students are given a pretest to determine their degree of prior knowledge in the subject and then assigned to four- to six-member "tribes" based on their test scores. Each tribe consists of one high-scoring member, who is designated as the "leader" and is required to take on the additional responsibilities of picking up the tribe's stopwatch and answer keys at the beginning of each class as well as taking care of the timing for the challenges. The rest of the tribe consists of members of varying abilities. I utilize a tiered approach in which I place a mix of high-, middle- and lower-scoring students within each tribe. In addition, to further promote fairness at the outset of the game, I add up the scores on the pretest for each tribe and try to ensure that each tribe has a similar per capita total.

It should be noted that although the tribes are on fairly equal footing at the beginning of the game, their performance may be influenced by factors other than effort and ability. One such example is the case of students that drop the course before the game is over. Typically, these are students who lack previous knowledge and experience with the course content and are not adequately prepared for the academic rigor of college. This situation is not uncommon in other disciplines as well, but occurs frequently in music due to the apparent disconnect between high school and college requirements. A student that could simply show up and receive a good grade in high school choir, for instance, may expect the same result from his or her college music courses. Some students find out that this is not the case and opt to drop the course or major entirely, effectively voting themselves off the proverbial island.

In both Theory Survivor and the *Survivor* show, the metaphor of tribal membership is critical to the success of the game (and instructional technique). Robin (2000) discusses the use of the word "tribe" as opposed to "team" and describes it as "welcoming" and "envoking a sense of belonging" (p. 65). On the first day of Theory Survivor, the first task of the newly formed tribes is to create a name and a flag for their tribe. They are immediately asked to unify and identify as a group, rather than individuals, which sets the tone for an atmosphere of cooperation. As the game progresses over several weeks, group cohesion increases as the tribes work together toward the common goal of winning the promised "fabulous prize" at the end.

2.3.1.2 Lesson: Challenge Communication

The second component of the STAD technique is a lesson that the instructor presents to the class as a whole. In a typical Theory Survivor class, I will give a brief mini-lecture to the large group. The lecture is always very concise and consists of a limited amount of essential material, just enough to allow students to practice the new concept. I may allow time for a demonstration or questions from the class as a whole, but this is also very brief in order to enable students to move to the next phase as soon as possible.

When I am satisfied that the students have an initial grasp of the content, I then present the Survivor challenge for the day. This takes the form of a list of exercises from workbook pages and corresponding time limits for each, posted on a PowerPoint slide. The survivor challenge is sometimes preceded by a practice challenge so that the tribes can engage with the content without the fear of losing points for wrong answers.

In this stage of Theory Survivor, the instructor is responsible for initiating the learning activity, which illustrates one of the requisite characteristics of cooperative learning discussed earlier. It also capitalizes on the efficiency of the traditional lecture approach to transmit information to a large group in a short period of time.

The challenge communication component of Theory Survivor also parallels the television show in that both present critical information to be used toward achieving the tribe's goal. In the show, its purpose is to notify the tribes of an impending challenge or change in the game. In Theory Survivor, its purpose is to present new information and set up the learning activity.

2.3.1.3 Team Work: Survivor Challenge

The third component of the STAD technique is team work. Students work with their teammates to master the material presented in the lesson. Teams are awarded points based on the degree to which students can meet or exceed their earlier performances as assessed by individual quizzes administered at the end of each cycle (Slavin 1991). It is in the team's best interest to help individual members improve, as individual success results in a higher score, and ultimately more rewards, for the team as a whole.

In Theory Survivor, tribes are assigned a challenge based on the content of the mini-lecture. This typically consists of exercises from the course workbook to be completed within specified time limits. As the instructor, I assign the exercises, but it is the responsibility of the leader of each tribe to execute the challenge. Each tribe must complete the exercises within the time limits (a stopwatch is used to accomplish this), check their answers against an answer key that I provide, and calculate both individual and team scores. The team score for each challenge is an average of all individual scores expressed as a percentage. This accounts for tribes of different sizes and is a simple way to generate a score for each challenge. The scores are then written on a large scoreboard posted on a bulletin board in the

classroom so that all of the tribes can see each other's progress. A running total of the current scores for each tribe, as well as the relative rankings of all of the tribes, is also posted on the course Web site. In addition, the tribes that are currently in the lead in each of the two sections of the course get a "photo op," as their tribe pictures are posted above the scoreboard on the Web site as well. This is done primarily for "bragging rights" and works well as an additional motivator, in particular when a tribe does particularly well and unexpectedly pulls into a leading position.

The ultimate goal of Theory Survivor is to get the highest tribe score and win the "fabulous prize." Knowing that the tribes are heterogeneous in performance level, it is in the tribes' best interest to help every member achieve the highest score possible in order to improve the tribe's overall average. As a result, it is very common to see a great amount of peer teaching taking place during the challenges.

Early in this year's Theory Survivor season for example, I noticed that one of the tribe leaders was doing a particularly good job of explaining concepts to her tribe and was going out of her way to help struggling members. I made a point of complimenting her on this and, out of curiosity, asked why she was making such an effort. She replied simply, "Well, that's how we're going to win." In fact, her tribe did end up being one of the winners of the game, but more importantly, it was one of the tribes that gained the most educational and social benefits from the experience.

In addition to the motivation felt by higher-achieving students to teach and mentor their peers, there is a certain amount of peer pressure to succeed that is felt by lower-achieving students, which could be perceived as either a motivational or demotivational factor. In the many years I have been using this technique, it has been my experience that these students tend to rise to the challenge and try to improve rather than give up because they feel they are dragging down their tribe's scores. Naturally, the latter does happen when students are overcome by the amount of new information that they are required to assimilate or the pace at which this needs to be done. However, I have observed that in general, a little bit of perceived pressure from their peers can motivate lower-achieving students to put in the extra effort needed to learn the material and improve their scores.

Learning the course content because it helps your tribe's collective success in the game is a slightly different motivation than learning the course content for your own personal success in the course. It would seem that the latter would matter more to students because it is success in the course actually "counts" in terms of receiving a good grade and credits toward a degree. However, and perhaps counterintuitively, it is the motivation of contributing to the success of the group that seems to drive students to perform at their best.

It should be mentioned at this point that a tribe's performance in Theory Survivor does not have any bearing on students' individual grades in the course whatsoever. Theory Survivor is purely an instructional strategy designed to help students learn the content, not an assessment of any kind. The rewards are purely extrinsic and material in nature (the "fabulous prizes" are custom-made T-shirts), which, in my opinion, is crucial to the success of the strategy. When students' grades are not on the line, they can relax and get caught up in the fun of the game.

2.3.1.4 Assessment: Tribal Council

The final component of the STAD technique is an individual quiz to assess each student's comprehension. These scores are compared to students' past averages and points are awarded to each team based on the degree to which each student met or exceeded his or her earlier performances. Theory Survivor also utilizes individual assessment to determine team rewards, but not in the same way as STAD.

At the end of each challenge, or section of a challenge, the tribe leaders distribute answer keys (or sometimes verbally read off answers if that is more efficient) to their tribe so that individual members can check their answers. Each tribe member calculates his or her own score for the challenge. The individual scores are then added together and averaged, resulting in a score expressed as a percentage. Expressing scores as a percentage rather than a raw total allows for differences in tribe size, as not all tribes have exactly the same number of members and not all students are typically present on any given day. Students are not awarded points based on their past performance as in STAD, but are motivated to improve individually because it will ultimately improve their tribe's score in the short term, and chances of winning the game in the long term.

In *Survivor*, the assessment comes in the form of a "tribal council" held at the end of each episode where tribe members vote to eliminate one of their members. In order to decide whom to vote off, tribe members must reflect on and assess the past performance of every individual. Although other strategic factors may come into play, essentially, the tribe will vote off the member whom they collectively determine to be the weakest in order to increase their collective strength and better compete against the other tribe.

In *Survivor,* there is no reward for individual success in the assessment phase. Conversely, individual accountability comes into play in the form of retribution for failure. Being voted off the island and thus out of the game is the ultimate punishment for an individual's failure to contribute to the success of the group.

2.3.2 Theory Survivor as a Game

From a pedagogical standpoint, Theory Survivor aligns well with Slavin's (1991) STAD method. However, it is more than just an example of cooperative learning. Theory Survivor also exemplifies many of the characteristics of a good game. As mentioned previously, McGonigal (2011) describes the four characteristic traits of a game as (1) a goal, (2) rules, (3) a feedback system, and (4) voluntary participation (p. 21). Although the arguably crucial element of voluntary participation is lacking in Theory Survivor, the rest are clearly present.

The long-term goal of Theory Survivor is to be the highest scoring tribe and win the "fabulous prize" at the end of the game. In the short term, the goal of each tribe as a group is to achieve the highest average score on the daily challenges and

the goal of each individual is to obtain their best score to contribute to the tribe's average. As an additional extrinsic reward for this short-term goal, the highest scoring tribe on the daily challenge in each class receives the honor of the yellow stopwatch. Much like the yellow jersey in the Tour de France is awarded to the highest scoring cyclist on a particular leg of the race, the yellow stopwatch (which is literally a yellow-colored stopwatch) is awarded for the highest daily score and used by the tribe during the next day's challenge. There are no additional points awarded in the game in conjunction with this honor; it is purely done for "bragging rights" and acts as an additional motivator, in particular for tribes that are lagging in points but have the unexpected fortune of scoring highly on an individual challenge.

Theory Survivor also shares the game trait of having rules. Players are assigned to specific teams with which they have to complete the game challenges. They know that their scores on each challenge will be totaled and the highest scoring tribe will win. Within the challenges, they have to complete a specific number of workbook exercises within specific time constraints. They are given answer keys with which they have to compare their responses and are told how each challenge is to be scored. All of these rules are set forth at the beginning of the game, and the players need to operate within them.

The feedback system in Theory Survivor is the single element that makes this technique work so well as both a pedagogical method and a game. In the game, players receive feedback in a variety of ways. First, on an individual level, as players complete each timed exercise and check their answers, they receive immediate feedback as to how many correct responses they are able to amass within the time limit. They can then strive for increased speed and accuracy, and thus a better score, on each successive exercise. Because the feedback is so immediate, they have the benefit of being able to learn from their mistakes and apply this new knowledge on the next exercise. Students frequently experience the feeling of "leveling up" (McGonigal 2011) as they see their improvement over the course of a single challenge in a very quantifiable and tangible way.

Second, on a group level, tribes are able to track their progress through the Theory Survivor scoring system. As the daily challenges are completed and scores posted on the scoreboard, players can compare their tribe's progress to that of the other tribes in their class. As mentioned above, receiving the yellow stopwatch is used as a reinforcement and reward for an exemplary performance on a daily challenge and enhances this feedback, the equivalent of receiving special powers in a video game, for example. Feedback on group progress is also provided by the online scoreboard, which is posted on the course Web site and updated daily. Tribe scores appear in a ranked list, so that players can see how their tribe is doing compared to all of the tribes in all sections of the course. As an added reward similar to the yellow stopwatch, the leading tribe in each section has their tribe picture posted in a "photo op" section above the online scoreboard.

The feedback system in Theory Survivor, in particular at the individual level, is what sets this method apart from both traditional lecture and other active learning techniques. In a traditional class setting, students receive information and then

complete homework assignments to practice outside of class. The homework is handed in, graded by the instructor, and returned to the student, who looks at their mistakes and uses the information learned from them to complete similar assignments. This process happens over two to three class periods at a minimum, and its success is dependent upon an expedient grading turn-around time on the part of the instructor and thoughtful reflection on the part of the student. An instructor who does not grade assignments immediately and a student who shoves returned homework in a folder without looking at more than the letter grade can greatly reduce the effectiveness of this feedback model.

Contrary to this approach, Theory Survivor tightens the transmission–assessment–feedback loop. Students receive new information and are allowed to practice it in mere minutes later. After this practice, students complete their own assessment by checking their answers against a key. Because their individual performance affects the performance of their tribe, they are motivated to reflect on and learn from their mistakes in order to avoid making the same ones on future exercises. The addition of time constraints ensures that the tribes stay on task and maximizes the number of exercises that can be completed in a class session. The time limits and immediate feedback also encourage and necessitate fluency with, rather than a mere surface understanding of, the material, which students quickly gain.

Theory Survivor is an instructional technique that blends the best of educational practices. It combines the effectiveness of active and cooperative learning with the efficient elements of lecture, all within the novel and motivational context of a games-based learning approach. Combining these elements allows students to learn and apply a relatively large amount of material in a relatively short period of time while maintaining a high degree of interest and motivation. Although it sounds like the perfect storm of best practices in college teaching, faculty must carefully consider certain pedagogical implications of this technique before jumping on the proverbial island.

2.4 Winning at Learning: Implications for Teaching

I have stated earlier in this chapter that I acknowledge that my class is not normal. I also acknowledge that I, as an instructor, am not normal. I am willing to spend what some would consider an inordinate amount of time inventing, creating materials for, evaluating, and refining new instructional ideas, just for the pure satisfaction and joy of doing so. I make a concerted effort to read educational research and consider myself to be well informed on current trends and techniques both in K-12 and college teaching. I observe my students carefully, evaluate the efficacy of my current teaching methods, and design new instructional strategies and materials in response to any difficulties that arise. In essence, I am a student of teaching. I enjoy it, place great importance on it, and am intrinsically motivated to continually learn about and improve my practice. I frequently experience feelings

of "flow" while doing my job, which is one of the many reasons I choose to remain in my current career.

However, I recognize that this particular orientation may not be shared by many faculty members in general, and particularly not by faculty in my field. First year music theory courses, in particular at large institutions, are frequently taught by graduate teaching assistants under the direct or indirect supervision of a faculty member. If a tenured faculty member does teach an entrance-level theory course, it typically does not rank very high on his or her list of academic priorities. Research consumes more of a faculty member's time and is typically held in higher regard than teaching in the teaching–research–service paradigm, as publication is crucial for tenure and promotion. Also, as discussed earlier, many faculty members do not have a background in college teaching techniques and thus may tend to revert to the instructional methods they encountered as students.

Research in the field of college teaching is constantly expanding, in particular in the area of educational technology and active learning. Even the most avid traditionalists in higher education may eventually need to come to terms with the fact that today's students have been educated in using technology in a different way than previous generations and are used to, and more adept at, interactive learning methods. Adopting active learning techniques, either with or without the assistance of instructional technology, is one way that instructors can bridge the gap between tradition and innovation and adapt to the changing needs and preferences of their students.

Theory Survivor is one example of an active learning approach used within the context of a traditional lecture course, but there are other examples as well. The use of personal response systems or "clickers" in lecture courses is one example of a widely adopted instructional strategy used across a variety of disciplines in college teaching and represents an effort toward the achievement of more two-way communication in lecture as well as means of increasing student engagement and achievement (Bojinova and Oigara 2011; Hoekstra and Mollborn 2012). By asking questions during a lecture to which students respond by clicking an answer button, an instructor can receive instant feedback on whether or not students understand a particular concept. This is particularly useful in the case of hesitant students who may not feel comfortable answering a question verbally for fear of being wrong.

Prunsky et al. (2012) describe the use of online lectures to facilitate active learning. In this instructional model, students receive the "transmission" component of lecture to prepare for class and then engage in active learning techniques (including clicker questions) based on the online lecture material during the face-to-face class period. Although it may seem like more time is required, students reported that this method did not increase the amount of total time they devoted to the course.

Another example of strategy that incorporates both active learning and small group cooperative learning within a large lecture class is the technology-enabled active learning (TEAL) initiative at MIT, a technique that is modeled after the Student-Centered Activities for Large Enrollment Undergraduate Programs or SCALE-UP method devised by Robert Beichner at North Carolina State University

(Breslow 2010). In this technique, designed for science, technology, engineering, and mathematics (or STEM) courses, students are assigned to heterogeneous groups of three and sit at specially designed nine-person tables in a large lecture room. The idea behind this highly technology-integrated technique is that students are provided with the necessary resources (via laptops connected to the Internet, physical models, and other resources) to work on real-world problems. In addition, sharing results and collaboration is enhanced by the technology that allows any group's results to be projected on screens positioned around the room for others to see at the push of a button. TEAL merges lecture, problem solving, and laboratory experiments in an effort to integrate concepts into practice and produce a deeper understanding of the material. TEAL and SCALE-UP also allow for students to learn collaboratively within a large class, which is difficult if not impossible using the traditional large lecture course model (Gaffney et al. 2008).

2.4.1 Road Blocks: Active Learning Barriers

It is evident from the examples cited above and from the literature on college teaching in general that there is a developing trend toward the incorporation of active and interactive learning techniques within the context of traditionally lecture-based classes. Although an instructor reading about them may be interested in adopting such innovative or creative strategies, there are certain barriers that must be overcome first.

Music educator Schafer (1986) said, "the first practical step in any educational reform is to take it" (p. 237). In order to be successful at implementing a new strategy, an instructor has to be willing to take the first step and assume all risks associated with it. The first season of Theory Survivor was a lot of work to set up, and I was uncertain at the time about whether or not it would be successful. From my current vantage point, I can say that the benefits far outweighed the risks associated with this technique, but the initial decision to let go of my previous methods and try something new was admittedly quite difficult.

Engaging a class in cooperative learning can be a bit of a messy process, as an instructor needs to think differently about his or her role when implementing such techniques and must be prepared to deal with a different type of classroom environment. In cooperative learning, the instructor needs to adjust his or her approach to act a facilitator rather than a teacher, a "paradigm shift" described by Barr and Tagg (1995). In my experience with Theory Survivor over the years, I have learned how to effectively stay out of the way and will only interject when I observe difficulty or when students ask for assistance. This shift may be difficult for some, as it requires giving up a lot of control and placing the responsibility for learning in the hands of the students. If an instructor is used to a quiet, orderly, teacher-directed class, then the noisy, student-directed, and sometimes chaotic nature of a well-done cooperative learning activity may be unsettling.

An additional barrier to the adoption of a new instructional strategy is the initial increase in preparation time it entails. Even though they might want to, some instructors may not be able to invest the amount of time necessary to implement large-scale changes to their courses. In my experience with Theory Survivor, however, the initial time investment in class planning and creation of instructional materials paid off in the long term, as I am now able to reuse these materials year after year. In addition, the design of the strategy itself, whereby students complete exercises and immediately check their own answers, saves me time that I would have spent grading homework assignments had I taught this material in a more traditional way.

Although the barriers described above are ones that I had to work through when I initially created Theory Survivor, they need not be prohibitive to other instructors wanting to try this technique. Over the years I have been using Theory Survivor, I have had the opportunity to invent, troubleshoot, and revise many of its aspects. My hope, and intent in writing this chapter, is that others may benefit from my experience and need not "invent the wheel" on their own.

2.4.2 Workaround: Using Survivor to Win at Active Learning

In video game parlance, a "workaround" or "exploit" is a weakness in a game's design that allows the player to win every time (Salen 2008, p. 268). Although undesirable in a game, a workaround may be useful to instructors who wish to adopt a strategy similar to Theory Survivor without doing all of the legwork themselves. The following section outlines some of the aspects of Theory Survivor that I feel are crucial to its success and may be useful to those who are considering adopting this technique.

The first, and perhaps most important, aspect of Theory Survivor that I believe is crucial to its success is that it is inherently unique and appealing. Using the format of a popular television show provides a familiar context with which students can easily relate (Kaupins 2005). In fact, the *Survivor* game context has been used in other disciplines in college teaching, such as medical education (Howard et al. 2002). Also, the environment of friendly competition that is not related to grades is key to the motivational aspect of the game. Although participation is not voluntary, knowing that they are competing for a "fabulous prize" and that the game is not related to their grade in the course allows students to relax and participate fully without risk.

Second, the material that the Survivor technique is used to teach must be conducive to and necessitate drill-type practice and must be material with single correct answers so that students can check their own work. I use Theory Survivor to teach and review the music fundamentals portion of my course, which lasts about eight weeks. The technique works well for this content as fundamentals of

music theory are best retained if they are learned in small increments through repeated practice (Rogers 2004). It is essential that this introductory material be thoroughly integrated to achieve long-term retention and enable students to apply the principles to new situations.

Although I designed this technique to work with music theory, it has potential application to a variety of disciplines. Music theory is similar to other subjects because it is comprised of a unique "language" of fundamental concepts with which students must become fluent very quickly. Examples of other subjects that share this characteristic include chemistry, physics, anatomy, foreign language, biology, and statistics to name a few. In short, any subject that necessitates the assimilation of a relatively large amount of unfamiliar information in a relatively short time frame is a candidate for this method.

Third, team equity is important. The use of a preassessment allows for heterogeneously grouped tribes and ensures that abilities are distributed equally. From a pedagogical standpoint, having a higher-achieving member in each tribe produces a resident "expert" to whom questions can be directed. This takes pressure off of the instructor and allows the tribes to be relatively self-sufficient. From a game standpoint, the perception of equity, at least at the outset, is crucial to players' motivation. If teams perceive that they are starting the game on equal terms, then they will work harder to improve their performance and standing. If equity is not established, teams perceive that they do not have an equal chance at winning, and are less motivated to succeed; effectively negating the educational benefit of the activity.

Finally, in order to maximize both the social and motivational factors in the Survivor technique, the contributions of individuals to the team must be recognized and cast in a positive light. Peer pressure can act as a motivational force, but it is important that weaker team members not be made to feel inferior. In my experience, it is more common for tribes to help a struggling member than get upset about his or her low scores. I feel that offering purely extrinsic rewards for accomplishments in the game, as opposed to tying them to course grades, is critical for the success of this technique. When students know that their grade is not going to be negatively affected by the outcome of the game or the performance of their teammates, they feel more comfortable participating and are allowed to experience failure in a low-risk environment. In short, this is what makes the game feel like a true game and not an instructional gimmick.

Theory Survivor works as an instructional method because of its ability to blend the efficiency of a traditional lecture approach with the effectiveness of cooperative learning. It is well suited to teaching content for which (1) drill and practice are necessary and (2) there are single correct answers. It works as a game because of its innate appeal and capitalization on the motivational factors of group cohesion and external rewards. Even though participation is not voluntary, the fact that the game is not tied to grades enables students are able to function as "players" and feel as though they are participating in a true game. As with any new approach, utilizing the Theory Survivor method may initially require an increase in preparation time and the adoption of a different attitude toward teaching, but the

academic and social rewards far outweigh any risks. Losing some of the comfort associated with familiar teaching methods is sometimes necessary to win at producing authentic learning.

2.5 Postlude

As I finish writing this chapter, the season of Theory Survivor has come to an end. The scores have been totaled, the fabulous prizes distributed, and the tribe flags and paper palm tree decorations taken down. When I meet them for our first class post-Survivor, my students' collective mood will be noticeably more subdued and slightly uneasy as they long for the familiarity of their tribes and the excitement of the game. Although in the short term they will be focused on what they have lost, in the long term it is what they have gained from the experience that they will carry with them.

In eight short weeks, these "castaways" have been transformed by their experience on Music Theory Island. Once hesitant, shy, and afraid to make mistakes, they have learned how to interact with their peers, how to deal with and bounce back from failure, and have gained a deeper understanding of and fluency with the fundamental concepts of the discipline. They have been engaged in the game, sometimes to the level of experiencing feelings of flow, and have been motivated to learn and achieve on an individual level to contribute to the collective success of their tribe.

Although they were initially forced into their groups and the game itself, at this point, they do not feel like this was the case. From their perspective, their tribes have become a pseudo family and have provided them with the much needed social and emotional support to survive their first weeks of college. The game, to them, felt like a "real" game and not like learning encased in a more palatable exterior, like chocolate-covered broccoli.

When they reflect on their experience, however, these are not things that they readily can or necessarily will articulate. If you ask my students to describe their experience with Theory Survivor, the three summative words spoken by the collective tribe will be, simply, "It was fun."

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Chapter 3
Using Entertaining Metaphors in the Introduction of the Case Method in a Case-Based Course

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Abstract This chapter shows one way of using entertaining metaphors in the introduction of the case method in the introductory session of a case-based course. The use of entertaining metaphors is based on the idea that academicians should incorporate entertainment in the teaching and learning environment. Students are often easily attracted to the rapidly progressing world of amusement and entertainment, and away from the often rigid and dry world of education. For the long-term benefit of society, teachers should make the world of education more attractive. Academicians can accomplish this by incorporating entertaining material in their courses. Entertaining material, as well, plays an important role in education, as the emotion evoking qualities of such stimuli have a profound impact on learning. This approach also enhances visualization, motivation, and association in student learning.

3.1 Introduction

The purpose of this chapter is to show how professors can use entertaining metaphors when introducing the case method to their students. Students are often educated by the lecture method and, therefore, the use of the case method is new and frustrating to them. They require an introduction to the case method, which is both foundational and friendly. The foundation of the case method is best introduced in simple terms and should be compared with the lecture method, with which students are most familiar. The friendly environment is best created with an approach that is most comforting to them, i.e., entertainment. This chapter shows how such a foundational and friendly introduction can be made by utilizing entertaining metaphors.

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This chapter shows how entertaining metaphors can be used to increase attraction to, and learning in, the introductory session of a case-based course when the case method is introduced. Its major emphasis is on the idea that academicians should incorporate entertainment in the teaching and learning environment. The crucial role of education in the advancement of society cannot be overstated. Students are often easily attracted to the rapidly progressing world of amusement and entertainment, and away from the frequently rigid and dry world of education. For the long-term benefit of society, teachers should make the world of education more attractive. Academicians can accomplish this by incorporating entertaining material in their courses. Entertaining material, as well, plays an important role in education, as the emotion evoking qualities of such stimuli have a profound impact on learning.

This chapter shows one way to include entertaining metaphors in the introduction of the case method. It utilizes an audiovisual approach, to affect those senses in students, in order to enhance attraction and communication of the materials discussed. The audio component is performed by the professor. The visual component is covered by transparencies[1] (or a slide show) shown on an overhead screen. The transparencies consist of drawings and cartoons[2] that are used as metaphors. This approach enhances visualization,[3] motivation, and association in student learning.[4]

The chapter is organized as follows. Section 2 discusses the role of humor and metaphors in learning. Section 3 demonstrates how entertaining metaphors can be used in the introduction of the case method. Section 4 is the conclusion.

3.2 The Role of Humor and Metaphors in Learning

It is worthwhile to briefly review the literature that addresses the effect of entertainment and metaphor in education; express my own experience; then move on to an application of a combination of both in the introduction to the case method.

[1] These transparencies can be scanned and turned into a slide show.

[2] These drawings and cartoons were collected long time ago, and therefore, at the present time, the author of this chapter cannot find the origin of the drawings and cartoons. The authors of these drawings and cartoons are welcomed to contact the author of this chapter to claim copyright when they see their drawings and cartoons.

[3] Remember, a picture is worth a thousand words.

[4] This chapter follows Ardalan (1998) and expands on it. See also Ardalan (2008a, b, 2009).

3.2.1 The Role of Humor

There are benefits to the use of entertainment and humor in teaching (Banas et al. 2011; Berk 1998; Garner 2005; Glenn 2002; Hill 1988; McCloskey 1990; Pollio and Humphreys 1996; Powell and Andersen 1985; Ziv 1988). It has been shown to have both psychological and physiological effects on learners. Psychologically, humor and laughter reduce anxiety, decrease stress, enhance self-esteem, and increase self-motivation (Banas et al. 2011; Berk 1998; Martin 2007; Mottet et al. 2006). Humor can help an individual engage the learning process by creating a positive emotional and social environment in which defences are lowered and students are better able to focus and attend to the information being presented. Additionally, humor can serve as a bridge between educators and students by creating a shared understanding and a common psychological bond (Glenn 2002).

Physiologically, humor and laughter can aid learning through improved respiration and circulation, lower pulse and blood pressure, exercise of the chest muscles, greater oxygenation of blood, and the release of endorphins into the bloodstream (Berk 1998; McGhee 1983).[5] The healing effects of laughter and humor can reduce anxiety, help relieve stress, and increase mental sharpness, which are all desirable in pedagogical settings (Cousins 1991; Evans-Palmer 2010; Neumann et al. 2009). Students pay more attention to humorous than non-humorous material.[6] Students rehearse humorous material more than non-humorous material and the increased rehearsal, in turn, results in higher retention rates (Atkinson and Shiffrin 1968; McCartney-Matthews 2011; Schmidt 2009). There are also the elements of surprise and retrieval strategies. Students may not expect to encounter humorous materials in their experiments. In their retrieval, students may be biased with respect to retrieving humorous material or retrieving humorous material before non-humorous material.

The factors described above do not necessarily operate in isolation. Thus, physiological arousal may result in increased attention to some material. Increased attention may, in turn, result in increased rehearsal.

There is a growing body of research relating the use of humor and its positive effects on teaching and learning (Civikly 1986; Garner 2006; Skinner 2010). Students indicate that humor can increase their interest in learning, and students who have teachers with a strong orientation to humor tend to learn more. Humor as a pedagogical tool can initiate and sustain student interest and provide a means to engage in divergent thinking (Dodge and Rossett 1982). A humorous atmosphere

[5] See also Bohannon (1988), Brown and Kulik (1977), Christianson (1989), Christianson, Loftus, Hoffman, and Loftus (1991), Craik and Blankstein (1975), Ellis, Detterman, Runcie, McCarver, and Craig (1971), Heuer and Reisberg (1990), Maltzman, Kantor, and Langdon (1966), Pillemer (1984), and Walker and Tarte (1963). For a broad review, see McGhee and Goldstein (1983).

[6] See Deckers and Devine (1981), Deckers and Hricik (1984), Isen (1985), Kaplan and Pascoe (1977), Kintsch and Bates (1977), Ohman (1979), Schmidt (1991, 1994), Suls (1972), Wanzer et al. 2010, and Zillmann, Williams, Bryant, Boynton, and Wolf (1980).

in the classroom positively impacts student scores on divergent thinking exercises (Ziv 1983, 1988). College students report that learning is enhanced by the inclusion of instructionally appropriate humor (Korobkin 1989; Wanzer et al. 2010). Students often have better recall of a message if it is presented with humor (Garner 2006; Hill 1988).

Students appreciate and enjoy the use of humor in the classroom (Berk 1996; Brown and Tomlin 1996; Bryant et al. 1997, 1980; Garner 2006; Pollio and Humphreys 1996). College students in describing the positive attributes of good teachers frequently mention "sense of humor" (Brown and Tomlin 1996; Buckman 2010; Kelly and Kelly 1982).

Humor establishes a connection between the instructor and the student, which is the key to effective teaching (Pollio and Humphreys 1996). Effective college teachers are most often described as "enthusiastic," and a strong sense of humor plays a major role in developing a positive learning environment (Lowman 1994; Lukehart 2009). The appropriate use of humor that fosters mutual respect enhances teaching effectiveness, and humor increases student receptivity to material by reducing anxiety in dealing with difficult material and has a positive effect on test performance (Bryant et al. 1980; Kher et al. 1999; Mantooth 2010). The positive environment of a humor-enriched lecture increases the attendance in class (Buchultz et al. 2011; Devadoss and Foltz 1996; Romer 1993; White 1992).

Humor should be used cautiously, however, as it can be an effective medium for communication or a social impediment in pedagogical settings (Garner 2003; Torok et al. 2004; Zhang 2005). The use of humor can be complicated because it may be highly personal, subjective, and contextual and it cannot always be predicted the way it will be received. Everyone has a unique perception of what is humorous and defines the "sense of humor" differently (Garner 2003; Wanzer et al. 2010). Furthermore, the effective use of humor is not akin to mere joke telling, e.g., some instructors with only average student evaluations used twice as much humor as those faculty members who were more highly rated (Rhem 1998). For humor to be most effective, it must be specific, targeted, and appropriate to the subject matter. In practice, a humor may be identified as either one of the four appropriate humor categories or one of the four inappropriate humor categories (Bekelja-Wanzer et al. 2006).

Student responses confirm that teachers who use humor in their classes aid the learning process. Humor has been said to: (1) improve attitudes toward the subject, decrease anxiety, tension, stress, and boredom; (2) increase comprehension, cognitive retention, interest, and task performance; (3) increase motivation to learn and satisfaction with learning; and (4) promote creativity and divergent thinking (Willard 2006).

3.2.2 The Role of Metaphors

Metaphor and analogy are fundamental cognitive tools, which are used by scientists in their expert investigations (Diehl and Reese 2010; Dunbar 1993, 1995; Hesse 1966; Ng 2009), by young children (Goswami 1992; Pramling 2010), and students in their efforts to understand complex phenomena (Braasch and Goldman 2010, Mason 1996; Orgill and Thomas 2007; Paatz et al. 2004; Wormeli 2009).[7] In an analogy, the similarities between two situations, phenomena, or events are identified, and the relevant information is mapped from a more familiar domain to a less familiar one.[8] In other words, analogy is essentially the transfer of a relational structure from a known domain, the source, to a lesser or unknown domain, the target (Garner 2005; Richland et al. 2004).

Analogy helps in connecting information and elaborating more comprehensive and integrated knowledge structures. That is, analogy leads to learning something more general, which is the abstraction of similarities shared by the source and target (Halpern et al. 1990; Harrison and Coll 2007; Prawat 1989; Rumelhart and Norman 1978; Vosniadou and Ortony 1989). Analogical reasoning has been investigated for some time in four-term analogy problems, which are used in IQ tests (Sternberg 1977).

When dealing with a much more complex phenomenon, a much more sophisticated process should be followed for analogical reasoning and learning (Brown and Salter 2010; Gentner 1983, 1989; Gick and Holyoak 1980, 1983). One way would be the structure-mapping approach, which refers to a structural alignment between domains. Only relational similarities shared by the source and target are preserved in the mapping of systems of predicates linked by higher-order relations, that is, relations between relations. For instance, in the analogy between the atom and the solar system, predicates such as "bigger than" or "hot" are not mapped from the source to the target, but predicates such as "cause" are. That is, systematically, a preference for interconnected systems of relations governed by higher-order relations characterizes the structural alignment (Gentner 1983, 1989; Steinhart 2001).

Another way would be multi-constraint approach, which deals with how individuals are driven by three different types of constraint in the use of analogy: similarity, structure, and purpose. At any level of abstraction, correspondences of similarities between the concepts are implied in an analogy. Moreover, structural parallels between the source and target domains underlie analogical mapping. Finally, the analogy is used toward researcher's goal (Holyoak and Thagard 1989, 1995, 1997; Ruiz and Luciano 2011). All different approaches in analogical

[7] See also Gibbs (2008), Holland, Holyoak, Nisbett, and Thagard (1986), and Holyoak and Koh (1987).

[8] See Gentner and Gentner (1983), Halpern (1987), Rigney and Lutz (1976), Royer and Cable (1976), Rumelhart and Norman (1981), Schustack and Anderson (1979), and Zheng and Song (2010).

reasoning emphasize the mapping process through which source features are transferred to the target and a more abstract structure connecting the two domains is elaborated.

Analogy, as a cognitive tool in learning processes, mainly facilitates the coding and organization of knowledge,[9] access to and retrieval of knowledge from memory,[10] and overcoming misconceptions. Different models for teaching scientific analogies have been proposed (Brown and Salter 2010; Dagher 1997), such as bridging analogies (Brown and Clement 1989; Brice and MacMillan 2005), multiple analogies (Chiu and Lin 2005; Spiro et al. 1989), elaborate analogies (Paris and Glynn 2004), student-generated analogy (Spier-Dance et al. 2005; Wong 1993), or structural alignment (Mason 2004) models. In general, analogies are powerful tools in teaching and learning at all school levels in certain conditions (Dagher 1997; James and Scharmann 2007; Oliva et al. 2007). First, a source domain from which to draw relevant information should be accessible to students. For instance, in order to use water pump to help students understand electric circuits, students must have some knowledge about water pumps and how they work. Second, students should be able to identify the structural similarities between two domains to produce an appropriate transfer. Third, students should know for what purpose they are using the analogy. If these conditions are not met, analogies may mislead students' thought processes (Dagher 1995; Duit et al. 2001; Glynn et al. 1995; Mason 1994; Ruiz and Luciano 2011; Treagust et al. 1996).[11]

3.2.3 Personal Experience

My own experience in using entertaining metaphors has been positive. In the winter of 1993, I started to gradually use them in my classes. Since then, I have gathered more and more ideas, cartoons and illustrations. On a casual basis, I have found them, over and above what has been discussed previously, to be beneficial to the class by adding new dimensions, and creating a friendlier, relaxed environment. These characteristics encourage the students to be more attentive and interested in classes, and the course as a whole. Some indications, supporting this position are, for example, that a part-time M.B.A. (Master of Business Administration) student, who had passed the course, came back and sat through it again. Another part-time M.B.A. student asked me for a copy of the cartoons and illustrations, because he was going to use them in his presentations at work. Other

[9] See Hutchison and Padgett (2007), Mayer and Gallini (1990), and Paivio (1971, 1986).

[10] See Halpern (1987), Hayes and Tierney (1982), Mayer and Bromage (1980), Pena and Andrade-Filho (2010), and Schustack and Anderson (1979).

[11] See also Gibbs (2008), Glynn, Britton, Semrud-Clikeman, and Muth (1989), Halpern (1987), Rogers (1960), Spiro, Feltovich, Coulson, and Anderson (1989), and Vosniadou and Schommer (1988).

students have indicated that they like the cartoons and illustrations that were displayed in this course. These indications prompted me to write this chapter in order to share my experience with colleagues.

3.3 Introduction of the Case Method

The lecture method is an efficient method when the transfer of knowledge is the primary objective. However, when the objective is critical thinking or problem-solving, the case method offers substantial advantages. To prepare for the case method, both teachers and students must modify their traditional roles and responsibilities.[12]

Students are often brought up in an educational system, which is based on the lecture method, with much structure, certainty, and control. To them, the use of the case method is new and frustrating. In the case method, students are faced with uncertainty, difficulty, and complexity, which they must organize and manage it.

The foundation of the case method[13] should be introduced to them in a friendly manner. The foundation is best introduced in simple terms and should be compared with the lecture method, with which they are most familiar. This is because there is a good deal of un-teaching and un-learning involved.

The lecture method has great advantages: It is efficient, and it is economical of the time, energy, and the patience of instructor and student. Students seem to possess a sureness, a precision, a firm understanding, which is remarkable for the relatively short time which they have spent on acquiring their knowledge.

Compared to the lecture method, the case method has a different purpose and brings about a corresponding different result. Businesspeople must be able to solve practical problems that arise in new situations. Accordingly, education should consist of acquiring the ability to act in new situations. That is, the focus of education is not gaining knowledge but gaining skills to act.

The introduction can be made friendly by utilizing entertaining metaphors. This chapter shows how these can be accomplished generally in any business course, with some specific reference to finance, in which the use of the lecture method is often more prevalent than it is in other areas in business education.

The entertaining metaphors approach is an audiovisual one. The audio component is performed by the professor. The visual component is covered by slides shown on an overhead screen. The slides consist of exhibits, which are used as metaphors. This approach enhances visualization, motivation, and association in student learning.

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[12] The author has heavily benefited from the insights of Erskine et al. (2003) and Mauffette-Leenders et al. (2007). See also Christensen (1991) and Christensen and Hansen (1987).

[13] For a foundational comparison of the lecture and the case method in a philosophical context see Ardalan (2003a and 2003b). See also Ardalan (2006, 2008a, b, and 2013).

This chapter focuses on the use of entertaining metaphors in the introduction of some of the most fundamental aspects of the case method. The discussion of the other aspects of the case method can be added as well.

The entertaining metaphors are so because they are cartoons and metaphorical. They are in the form of transparencies that are shown on the overhead screen while the professor introduces the course and the field. The professor discusses the topic without any reference, for the most part, to what is being shown. It is the students' role to relate what the professor is discussing to what is displayed on the overhead screen. In fact, for the student, finding the relationship between what the professor is discussing and what is being exhibited, makes the metaphors even more entertaining. The entertaining metaphors are placed at the end of this chapter.

In the following presentation, the exhibit or slide number appears first. Next, there is a short description of the relevant material discussed in class. The slides are placed at the end of the chapter.

Exhibit 1: At the beginning of a case course, students naturally have many questions regarding different aspects of the case method: What is involved in a case? and What is required of them?

The educational goal of the case method is for the students to gain practical knowledge and to be able to apply logical and correct reasoning in every subject. The case method has proven itself a most effective educational vehicle in situations where decisions are required and issues must be solved. The case method is participatory, student oriented, and involves active learning environment.

A case is a description of an actual situation, which commonly involves a challenging problem or issue that requires a decision by a person (or persons) in an organization.

A case is a partial, historical, clinical study of a real-life situation that is faced by an administrator or managerial group. It provides substantive and process-related data that are essential to an analysis of the situation. It requires the listing of alternatives, a decision for action, and its implementation, which recognize the complexity and ambiguity of the practical world. A case is usually presented in narrative form and encourages student involvement.

A case is a record of an actual business issue that includes the surrounding facts, opinions, and prejudices upon which executive decisions would depend. These real and specific cases require students to analyze, discuss, and finally decide on the necessary action that should be taken.

In the case method, students should place themselves in the shoes of the decision maker in the business situation in order to decide what is to be done about the issue at hand. The case is basically a complex puzzle and students are required to make a decision with respect to the issues involved. Students bring their own values, age, gender, background, theoretical and practical understanding, training, skills, expertise, biases, and culture into the position and the situation in place. The decision, issue, or opportunity becomes theirs. Taking this responsibility is one of the major challenges in the use of cases. It is much easier to stay as an outside observer, as required by the lecture method.

In a case, there is usually an immediate issue that refers to a specific decision, problem, challenge, or opportunity faced by a decision maker. In real life, a case is not normally repeated, therefore, the purpose of being concerned with the immediate issue of a case is to develop an understanding of the basic issues underlying it. This is because basic issues tend to be commonly present. Dealing with the details of a case helps in developing an approach, which is generalizable to other situations.

Exhibit 2: There are two fundamentally different views on how to approach a problem. The view that underlies the lecture method encourages a microscopic look at the details of the issue at hand. On the other hand, the view that underlies the case method encourages not only a deep look at the details, but also a global look.

Exhibit 3: The view that underlies the lecture method, with its emphasis on objectivity and the observation of the object by as an observer, encourages the finding of exact relationships among the elements of a given phenomenon or issue. We see this approach in the current standard business courses and textbooks, e.g., in finance,[14] where detailed relationships is mostly expressed in exact mathematical terms. Note that, although the level of mathematics at the introductory level is not in any way high, in advanced graduate courses, sophisticated mathematics is used.

Exhibit 4: In the lecture method, therefore, the professor spends most of the class time at the board deriving or applying those exact relationships.

In the lecture method, teaching is telling, knowledge is facts, and learning is recall. Teachers deliver factual information, and students receive it. Learning is satisfactorily completed when the student successfully transfers factual material back to the teacher at a specific time. Students go through an educational process, which is devoted to finding answers, by applying rigorously defined methods to questions or problems carefully posed by others. When these students first encounter the case method of instructions, they become uncomfortable, confused, and ineffectual. In the case method, the students' role, expectations, and responsibilities are much different than in the lecture method. The student is responsible for doing a thorough analysis of the case at hand.

Exhibits 5 & 6: The view that underlies the case method encourages the interpretation of the details as well as the big picture. Let us look at exhibits 5 and 6 to see that this is, in fact, what we do in our daily lives.

Consider the calendar that we use every day. Exhibit 5 shows where we note our appointments and plans for each hour on any specific date, Wednesday, March 20, 2012. We certainly make those plans with a view to the rest of the week, for which we have other plans. The whole week is shown on both pages of the calendar. Then again, our weekly plans are made within our monthly ones. For

[14] See, for example, Brealey, Myers, and Allen (2011), Brealey, Myers, and Marcus (2012), Brigham and Ehrhadt (2011), Brigham and Houston (2009), Keown, Martin, Petty, and Scott (2008), Ross, Weterfield, and Jaffe (2008a), and Ross, Westerfield, and Jordan (2008b).

example, our plans for March and April, which are shown on the lower half of the right-hand page of the calendar, contain the week of March 20. Our monthly plans are, in turn, made within our longer-range plans for the years 2013 and 2014. This is placed at the beginning of the same calendar, which appears in exhibit 6. In the same way, we approach business cases. We look at details within a company, but never lose sight of the big picture.

Exhibits 7 & 8 and 9 & 10: The case method places great emphasis on the role of the context. Each case needs to be seen in context, not only in terms of topic or theoretical coverage, but also in its other dimensions. This plays a crucial role in what we see, in our interpretation of the case and in the issues under consideration. In exhibits 7 and 8, whether we see the same object as "a man washing his face" or "an embrace" reflects the important role of the context in which we interpret information. As another example, in exhibits 9 and 10, whether we see "three penguins" or "three Asian gentlemen" reflects the critical role of the context in what we see.

A case mostly provides information about the background of the organization as well as the industry. That is, such information provides the context for the issue, which emphasizes one of the prime reasons for using cases. In a case, there are several decision options and the preferred one depends on the circumstances, i.e., the context. In other words, cases are useful because there do not exist standard universal solutions.

Exhibit 11: By big picture and context, we mean, what goes on in the industry, and in the national and international economies. For instance, the national budget deficit, which is a major macro-economic variable, affects all aspects of the economy and the businesses operating within it.

Exhibit 12: In the lecture method, knowledge is expressed in the form of a speech. The student is not only almost always disallowed to see anything different from the lecturer, but is also required to replicate and repeat what the lecturer has presented. There is almost no allowance for the student to see the case, or the phenomenon, for himself or herself, share his or her views, and obtain insights from the views expressed by others. The lecture method of teaching and learning reminds one of ancient drawings, in which artists were limited in dimensions and in which there was almost no opportunity for them to express themselves to any great extent.

Exhibit 13: Comparing the previous exhibit with this one is like comparing the lecture method to the case method. In this exhibit, the third dimension is brought in, and we clearly see the role and place of the artist in the drawing, as well as the drawing itself. Moreover, the artist sees the room in a special way, which is different from how most of us are accustomed to seeing a room, i.e., rectangular. The artist is seeing the room in a unique way and is sharing it with us.

Exhibit 14: We have much in common. We have some similar interests, values, and behaviors.

Exhibit 15: Most importantly, we all like, and are interested in, business administration.

Exhibit 16: However, there are differences among us. We come to the class from different backgrounds and with different intentions.

Exhibit 17: Some of us may be interested in going into detail, while others may not be that patient. Or, some of us may be interested in and familiar with some aspects of an issue, while others may be interested in and familiar with other aspects of it. Or, some of us may see the case in a certain way, whereas others may see it in a different way.

Exhibit 18: In the case method, we discuss cases. This is because each one of us interprets the case differently and looks at different aspects of it. To see this, let us look at exhibit 18. What do we see? Do we see "a cowboy hat?" Or, do we see "a man?" Or, do we see "a man at the barber?" Or, do we see "a man wearing a turban?"

The case method regards truth as relative, reality as probabilistic, and structural relationships as contingent. Therefore, teaching and learning are most effectively accomplished through discussion rather than exploration. The case method regards real-world phenomena as being complex and simple theoretical relationships as having limited use. Therefore, direct communication from the teacher to the student is of little value. The emphasis of the learning process should be on the development of understanding, judgement, and intuition.

Exhibit 19: Each of us likely sees a case differently. This constitutes a spectrum for analysis and discussion. A group of us will have a similar interpretation that differs from the rest. But even that group, within itself, contains a spectrum of finer interpretations. This is very much the same as the spectrum of colors from a prism. In the same way that combining all the colors together creates a clear white light, combining our different viewpoints creates a clear view of the case.

Exhibit 20: The case method states that each one of us sees the case from a different angle, and it is by sharing, and putting these together, that each one of us obtains a better perspective. The case method of learning focuses on the discussion of the cases, where the joint stakeholders are teachers and students.

Exhibit 21: As we have noted, each one of us noticed a different aspect of the object; and, by sharing our observation with the rest, we came to a better understanding of the object we saw. We approach cases in the same way. That is, each of us first analyzes the case individually, then within a small group. Afterward, we collectively discuss what each one saw, and how each one analyzed it and made a decision. Next, we exchange our ideas to get a better understanding of the case and make our own decision.

In order to enhance expression and exchange of ideas, participants should be well-prepared for small group discussion. Each participant uses his or her own understanding and experience to analyze the case.

In the case method, the analysis involves the problem-solving model that consists of the following steps:

(a) What are the objectives of the organization?
(b) What is the decision or the problem?
(c) What are the key relevant facts?
(d) What are the alternatives?
(e) What are the decision criteria?
(f) What is your analysis of the alternatives in view of the decision criteria?
(g) Which alternative do you recommend?
(h) What is your plan of action for implementation and what results do you expect?

Decision making is complex when students are faced with several issues with multiple objectives and decision criteria. Typically, there are several sensible course of action to a case. What is important is the students' analysis based on the available information and the student's justification for deciding on a certain alternative. Indeed, each student creates a path to an answer.

In the case method, we learn by doing and by teaching others. What we learn becomes second nature and stays with us. By identifying, analyzing, and solving issues in a variety of cases, we become prepared for our professional work. The case method of learning is based on the philosophy that students learn better by being actively involving in their own learning.

Exhibit 22: Class participants should do their homework first by themselves, then with their group members. They should not ask for easy outside help. In this way, they learn the material better, and their problem-solving skills improve much faster. Normally, cases do not have right or wrong answers. The quality of students' solution depends largely on their decision-making skills. Students should look at the case solving tasks as a process and manage it as a process.

Exhibit 23: In discussions, participants are free to express their views, values, and attitudes with respect to any aspects of the case. They should feel free to let others know what their views are. Other participants will balance their views and preferences and change the way they saw the case accordingly. But, if some participants do not make changes in their views as per suggestions made by others, it is not that they have neglected those contributions. But, rather, that there are other views and values involved which are more persuasive to them.

Usually, each group has a variety of skills, cultures, experiences, and expertise. Group discussion is enriched by the variety of perspectives from members with diverse backgrounds. A balance of quantitatively and qualitatively oriented members improves the overall learning from the group discussions. Group members share their ideas and insights. They collaborate, rather than compete. Each student reaches his or her own decisions based on individual preparation and small group discussion.

Exhibit 24: Everyone should be open to suggestions. The case method strives on "the give and take" involved in case discussions. Small group discussion provides students with opportunities to check their insights, assumptions, and preparations against those of others; clarify their understanding; listen attentively and critically to others; and argue for their positions based on their individual

preparation. Small group discussion uses the group synergy to push beyond the analysis reached by each individual member.

Exhibit 25: After the participants do the cases by themselves and discuss them in small groups with their group members, they come to class better prepared, then the cases will be discussed in the class. It is important that everyone should feel free to express his or her ideas. The professor will express his or her analysis as well. Do not forget that his or her views are as good as that of any other participant. The professor also facilitates the discussion and the decision-making process and his or her emphasis will be to make sure that the learning process is on proper route.

The advantage of the case method is that different analyses usually produce different correct answers. In other words, there is no one correct answer to a case. Keep in mind that, due to their nature, case classes often appear disorderly since they cannot be programmed as in the lecture method.

Effective students display the following characteristics:

1. They prepare, both through reading and analysis of the case under consideration.
2. They offer their viewpoints where these differ from the class in the expectation of:
   (a) Improving their thinking and skills at analysis.
   (b) Improving the class development of the case.
3. They develop their theoretical and conceptual model(s) of the field under study, as well as their skill at problem-solving.
4. They make inferences or generalizations from each case vehicle undertaken.

Exhibit 26: In the end, participants can make their own informed decision with respect to the issues in the case because they will have a much better view of the whole case than the limited view with which they initially started. The case method process is inductive, unlike the lecture method that is deductive.

Although every case is different, the process of learning how to learn is generalizable. The case method provides students with the opportunity to develop a diverse set of skills:

1. Analytical skills
2. Critical thinking skills
3. Decision-making skills
4. Application skills
5. Oral communication skills
6. Time management skills
7. Interpersonal or social skills
8. Creative skills
9. Written communication skills.

The fundamental principles underlying the case method and its ability to involve the student in a highly personal learning experience may be summarized as follows:

1. The primacy of situational analysis,
2. The imperative of relating analysis and action,
3. The necessity of student involvement,
4. A non-traditional instructor role, and
5. A balance of substantive and process teaching objectives.

3.4 Conclusion

This chapter showed how entertaining metaphors can be used to introduce in simple terms and in a friendly manner some of the most fundamental views and principles that underlie the case method to students who have not been exposed to the case method at all and, therefore, find it new and frustrating.

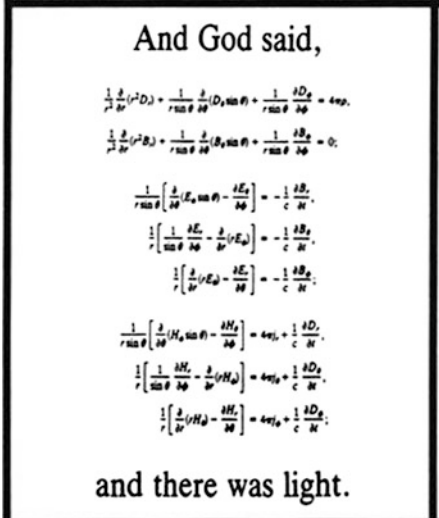
This chapter showed how entertaining metaphors can be used to introduce the case method. In order to make the world of education more attractive to students, academicians can incorporate entertainment in their courses. Given the importance of the introduction to the case method, this chapter made an attempt in that direction. This approach has the capability of being applied to other fields and subfields of study. The author, as well, has successfully used this approach in the capital structure session and capital markets session of an introductory finance course.[15]

[15] See Ardalan (2008a, b, and 2009)

Appendix

Exhibit 1

Exhibit 2



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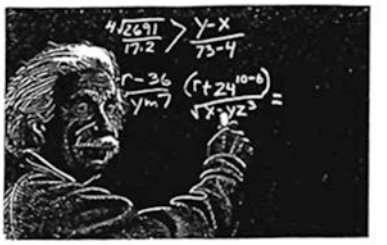
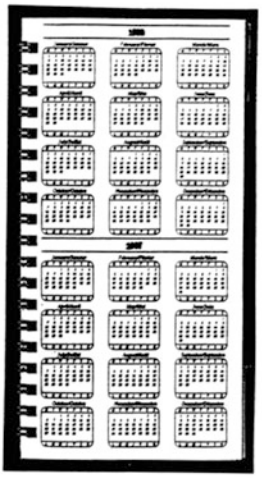


Exhibit 4

Exhibit 5



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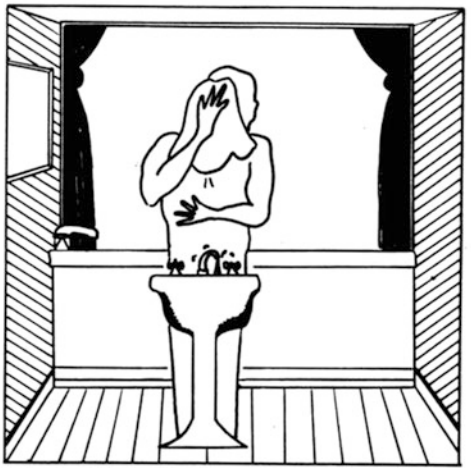

Exhibit 7

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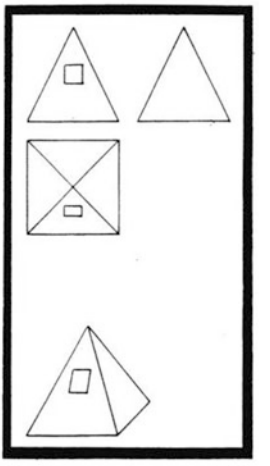

Exhibit 20

Exhibit 21

Exhibit 22

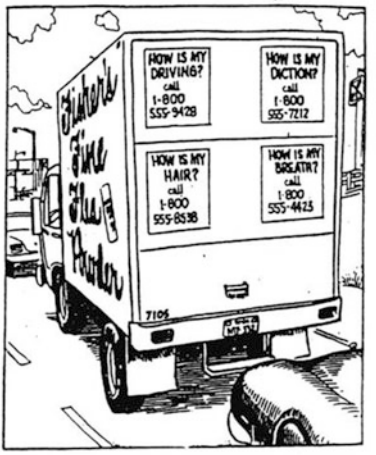

Exhibit 23

Exhibit 24

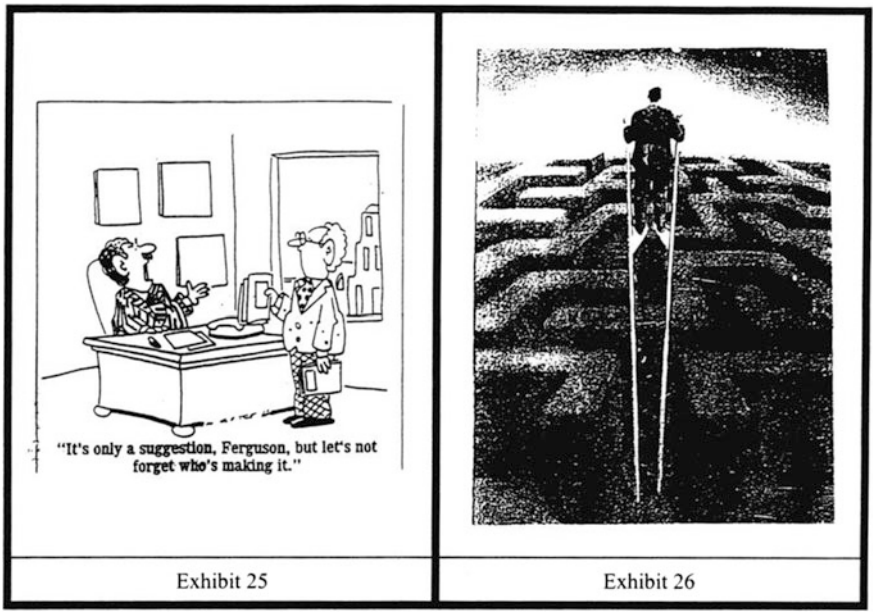

Exhibit 25 Exhibit 26

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Part III
Learning Through Construction

Chapter 4
Case-Study Instruction in Educational Psychology: Implications for Teacher Preparation

Alyssa R. Gonzalez-DeHass and Patricia P. Willems

Abstract Case-study instruction has become increasingly popular as a way for preprofessional teachers to actively engage in problem-solving for real-life classroom situations. Case-study activity allows for social dialog and exploration in an atmosphere of shared learning among peers and instructor, and it also affords prospective teachers the opportunity to see how a teacher works jointly with other stakeholders such as the school principal, guidance counselor, and students and their parents in order to assist a student's academic learning. Benefits associated with this method of teaching include preservice teachers gaining an appreciation for the complexities involved in teaching, opportunities for scaffolding of critical thinking skills, students being involved in authentic learning experiences in teacher decision-making, and student motivation to learn academic content. The chapter also includes suggestions for instructors in teacher preparation programs wishing to successfully incorporate case-study instruction into their classrooms.

The case-study method of instruction affords college students the opportunity to see the real-world applications of what they are learning (Grupe and Jay 2000), and the use of case studies has been proposed as a way for preprofessional teachers to actively engage in problem-solving for real-life situations (Wright and Heeran 2002). The purpose of this chapter is to examine current research on the use of case-based instruction and to consider how this method might be of benefit to students enrolled in educational psychology courses. The use of case-based instruction to teach courses in educational psychology has become increasingly popular, and it has been proposed as a promising approach to helping preservice teachers' bridge theory and practice (Engle and Faux 2006; Patrick et al. 2011).

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4.1 Case-Study Instruction and Teacher Preparation

Case-study instruction uses descriptive stories that narrate classroom dilemmas and asks students to discuss theoretical applications of course material as they engage in hypothetical classroom problem-solving and teacher decision-making. Cases can be written from various perspectives, focus on groups or individuals, provide data or evidence to review, describe outcomes, and/or pose dilemmas, hence making their use very versatile. The case method is used in fields other than education. Areas such as law, medicine, and business use this approach to instruction; the case method is characterized by centering instruction and focusing curriculum around the use of case studies (Heitzmann 2008; Merseth 2008).

Since teaching educational psychology involves preparing educators, cases consist of teaching scenarios that are geared toward the application of theoretical knowledge in an authentic teaching setting. Teaching is a complex profession that requires high levels of multitasking in order to successfully instruct students and handle classroom disruptions and student misbehaviors. Therefore, teachers must be able to make decisions quickly and effectively while maintaining the flow of the classroom and minimizing any impact on instruction. Moreover, due to the public aspect of the teaching profession, teachers' decisions are often on display and errors in performance are subject to scrutiny and criticism (Ching 2011). In addition, in today's classrooms, teachers are expected to have the ability to engage learners from diverse backgrounds while skillfully using a variety of teaching techniques resulting in new challenges in the preparation of teachers (Darling-Hammond and Hammerness 2002; Darling-Hammond and Snyder 2000). Being that most preservice teachers do not possess extensive classroom experience when enrolled in teacher education programs, working with case studies provides them with opportunities to implement theory, test theoretical concepts, and speculate on making decisions that would affect their future classrooms.

Interest in case-study instruction developed over the last two decades and has become an important base from which to ground preservice teacher education (Darling-Hammond and Hammerness 2002; Heitzmann 2008). In 1986, the Carnegie Forum on Education and the Economy Task Force on Teaching as a Profession (1986) suggested case studies be integrated into the instruction of future teachers and thus began the rise of using cases in research and in practice. Since then, case-study research has shown that using cases in preservice instruction can promote student learning, lead to a better understanding of the connection between theory and practice, and show increases in problem-solving decision-making, critical thinking, and self-efficacy for educational situations (Brooke 2006; Bruning et al. 2008; Haley 2004; PytilikZillig et al. 2011). Students enjoy the nature of learning via a case study because it provides them with a chance to positively interact and apply their knowledge in a way that is both practical and fun (Brooke 2006). And being that teaching cases exist in the form of narratives, they engage students' interest, capture their attention, and assist in retention in memory (Ching 2011).

With the growth of technology, case studies can also be in the format of a video instead of a narrative; video-based cases provide an additional component to the instructional scenario in that they provide the future teachers an opportunity to actually view classroom scenarios (Barnett 2008; Bencse et al. 2001). Video-based cases also appear as learning tools that accompany a number of educational psychology textbooks on the market today. In some textbooks, the cases are mentioned for discussion throughout the text (as is the case for *Educational Psychology* by Tuckman and Monetti 2011 and *Psychology Applied to Teaching* by Snowman and McCown 2012), while in others, the video cases are part of their supplemental package (as is the case for *Educational Psychology* by Slavin 2009; *Educational Psychology* by O'Donnel et al. 2007). Whether the cases are in the form of videos or are written narratives within the textbook (see *Ed Psych* by Bohlin et al. 2009; *Educational Psychology*: *Windows on Classrooms* by Eggen and Kauchak 2009; *Educational Psychology: Developing Learners* by Ormrod 2011, *Educational Psychology* by Santrock 2011, *Educational Psychology* by Woolfolk 2011), case studies are now an established part of most educational psychology textbooks used today. In addition, to the cases incorporated into educational psychology textbooks, there are also stand alone case-study books (see *Educational Psychology Casebook* by Willems and Gonzalez-DeHass 2006; and *Casebook for Educational Psychology: Theory and Practice* by Slavin 2008) that can be used in conjunction with the major textbooks to teach educational psychology.

Therefore, case-based instruction has become a mainstay in many education programs and used by many professors in their courses; case studies provide an effective way to improve teacher training by infusing real-world application and interaction while promoting student learning and enhancing knowledge (Brooke 2006; Haley 2004; Patrick et al. 2011; Powell 2000; Sudzina 1997). Case-based instruction is a tool in teacher preparation that supports and nurtures preservice teachers as they evolve from novices to experts. By studying real-world classroom situations, teacher education students can analyze a variety of circumstances using the pedagogical and theoretical knowledge that they have been taught (Barnett 2008).

4.2 Case-Study Instruction as Constructivist Pedagogy

Case studies can be utilized to prompt classroom discussions and encourage future teachers to reflect about their assessment of the case (Merseth 2008). Because the case itself can be written from various perspectives and deal with a wide range of topics, it offers instructors a multitude of real-world scenarios from which to structure learning or from which students can learn from. Case-study learning can be viewed as a constructive approach to teaching in which learning, from a sociocultural perspective, takes place in context. Preservice teachers using case studies acquire their knowledge through the narrative cases that represent real-life teaching situations; therefore, their knowledge and understanding is embedded in the context (Lave and Wenger 1991; Kim and Hannafin 2008a).

Contextual knowledge in case studies can demonstrate any aspect of the teaching profession; cases can show expert teachers' use of different instructional methods, classroom management approaches, or successful and unsuccessful interactions with students. In keeping with the sociocultural perspective, cases can offer instructors the opportunity to scaffold their students' learning. A classroom scenario written from the standpoint of the student allows the instructor to prepare preservice teachers to view classroom situations through the eyes of their future students. Thereby, demonstrating how teaching in context allows preservice teachers to gain a better appreciation on how to effectively address and incorporate their students' individual needs, culture, and backgrounds (Kaste 2004; Kleinfeld 1998). Cases can also demonstrate the collaborative nature of teaching by illustrating how a teacher works jointly with other adults such as the school principal, guidance counselors, students' parents, and coaches in order to assist a student, thereby reinforcing the multi-dimensional aspects of teaching (Ching 2011; Merseth 2008).

Teaching practices that build on the social constructivist perspective allow for social dialog and exploration in an atmosphere of shared learning, foster group reflection and multiple viewpoints, and encourage meaningful group activities around common interests and authentic real-world problems (Bonk and Cunningham 1998). Constructivist practices emphasize the importance of stimulating students' self-regulated and active learning, connect learning to authentic and real-life contexts, and encourage students through open-ended questions and guided discovery (Erdogan and Campbell 2008; Mayer 2004; Thoonen et al. 2011). Essentially, social constructivism emphasizes the belief that knowledge is constructed when individuals interact socially and talk about shared tasks or dilemmas (Driver et al. 1994). Collaboration within a community of learners is an opportunity to reflect and share one's perspective with others and to negotiate meaning and develop better solutions (Alesandrini and Larson 2002; Driscoll 2005).

Overall, the case-study method of instruction aligns with constructivist teaching methods that allow for student discovery and promotes group interaction and cooperative learning activities that foster multiple viewpoints and encourage student dialog. By sharing various viewpoints based on their varied backgrounds and experiences, students can come to a better and more informed understanding. The use of case-study instruction in educational psychology is a "natural fit" with constructivist principles that view learning as "interactive, socially constructed, collaborative, and problem-related…" (Sudzina 1997, p. 207).

4.3 Benefits for Case-Study Instruction

4.3.1 An Appreciation for the Realities of Classroom Teaching

"The life experiences of the majority of college students is often far removed from the realities faced by many of the individuals they will be responsible for serving

in their professional lives" (Wright and Heeran 2002, p. 114). And unfortunately, some preservice teachers do not yet appreciate the complexities involved in classroom teaching. Fortunately, instructors in higher education can begin to remedy this lack of perspective through constructivist pedagogy in case-study instruction. Teacher preparation programs should be exposing prospective teachers to the realities of classroom decision-making throughout their academic program. "What is becoming increasingly apparent is the developmental nature of learning to teach…The goals, methods, and philosophies of teacher education programs should address the needs of prospective teachers at various points in their development" (Harrington 1995, p. 203).

Coursework in educational psychology is often considered foundational knowledge for preservice teachers enrolled in traditional teacher preparation programs. Often, students take these courses early in their academic programs, far in advance of their student teaching internship. Case studies in educational psychology can serve as facilitators for actual teaching experiences and represent a middle step between coursework and actual teaching experience (Greenwood et al. 2002). "Effective P-12 classroom interventions may more likely occur if prospective teachers encounter teaching realities early in their preparation programs and learn how to translate the emerging knowledge base into professional practice." (Herman 1998, p. 391).

Courses in educational psychology might operate as classroom learning communities where prospective teachers, engaging in case-based instruction, might experience teacher decision-making of realistic classroom dilemmas with both teacher and peer support. Case-study instruction provides the opportunity for prospective teachers to begin to understand the dilemmas teachers truly face on a daily basis, and it encourages students to appreciate the multiple perspectives of different educational stakeholders. Instructors will want to provide opportunities for students to share their points of view and listen to the alternate perspectives of their classmates. As individuals experience having their current understanding challenged, they must wrestle with classroom issues and engage in assimilation and cognitive re-organization. These interactions stimulate the individual to think about classroom issues in increasingly complex ways.

The instructor's role becomes that of a facilitator who ensures that alternative views are encouraged but who also clarifies and reinforces suggestions that are commensurate with what is known about effective teaching as well as appropriate given the practical constraints teachers must work within. By discussing classroom-based dilemmas, teachers can enhance preservice teachers' understanding of educational psychology as well as their appreciation for the diversity and intricacy of classroom life. Research demonstrates that case-based teaching can enhance preservice teachers' cognitive flexibility and perspective-taking as well as enlighten them as to the complex nature of teaching (Ching 2011; Heitzmann 2008; Lundeberg and Scheurman 1997; Sudzina 1997).

Because of the diverse nature of learning contexts, prospective teachers cannot come to understand the intricacies of teaching through only the simple presentation of various teaching methods and techniques (Harrington 1995). Undoubtedly, lecture methodologies have their use in introducing important theoretical

background material to students. However, lectures and examples that constrain the conceptualization of larger problems are ineffectual and do not introduce prospective teachers to the complexity of classroom events nor do they encourage them to approach authentic problems from multiple perspectives (Risko 1991). In contrast, case-based teaching has the power to illuminate the challenges and realities of today's schools, and it encourages future teachers to look beyond simplistic explanations for student, teacher, and parent behaviors in the classroom (Sudzina 1997). This is especially true if case-based instruction is devised around complex, authentic, problematic, and ill-defined cases that mirror the multifaceted nature of teaching and therefore help prepare future teachers to face difficult situations in real classrooms (Ching 2011; Kim and Hannafin 2008a; Risko 1991). Consequently, not all case-study instruction is capable of reaping the same educational benefits and learning outcomes. Instructors in teacher preparation programs must look at how they are using case-based instruction, an issue we return to later in this article.

4.3.2 Authentic Learning Experiences

It has been said that learning and knowledge are situated in physical and social contexts, that the transfer and use of knowledge is affected by the context in which learning took place, and finally, that students often acquire decontextualized knowledge that they cannot use in everyday life because they lack the entrance into the community and the culture that uses such knowledge (Brown et al. 1989). It has also been said that educational psychology courses have traditionally made too little provision for the application of theoretical knowledge and the development of professional decision-making (Greenwood et al. 2002). The traditional curriculum of educational psychology courses often includes abstract psychological concepts which at first glance may seem dispensable to prospective teachers until the utility of these theories is made apparent by grounding them in concrete teaching experiences. In this respect, exposing preservice teachers to case-based instruction not only introduces them to the realities of classroom teaching, it also affords them opportunities to apply their learning in authentic classroom contexts and engages them in teacher decision-making experiences.

In more recent years, educational psychology instructors are coming to see the importance of supplementing theoretical coverage with opportunities for application and authentic learning. Authentic instruction utilizes classroom activities that have some connection to real-life tasks students will face outside the classroom. Authentic learning involves real-world problems that mimic the work of professionals in that discipline; utilizes open-ended inquiry, thinking skills and metacognition; engages students in discourse and social learning among a community of learners; and empowers students through individual choices to direct their own learning projects (Rule 2006). It is through these authentic activities, including that of case-study instruction, that learners are exposed to a particular

community of practice or culture's use of a particular skill and as a result enhance their learning and transfer of that skill.

Case studies provide the forum for reflection and application of psychological concepts into classroom decision-making. "Learning to be systematic in decision-making and to be aware of cognitive processing during decision making takes just as much practice as acquiring relevant bodies of psychological, sociological, pedagogical, and organizational knowledge. In short, to be an effective decision maker, one needs to practice decision making….In education, it (case method) can provide the student with the opportunity to translate theories, principles, and methods into practice" (Greenwood et al. 2002, p. 281). Through the use of cases, instructors can connect academic learning with reality beyond the classroom, a practice that speaks to the heart of constructivist classroom methods (Mayo 2002). The case-study approach encourages preservice teachers to engage in active problem-solving rather than passively receiving theoretical content (Wright and Heeran 2002). Across subject matter disciplines, case studies help students to see real applications of their class work while placing the bulk of the responsibility on the student to analyze situations and offer solutions (Grupe and Jay 2000). And as the field of educational psychology looks to strengthening its role in teacher education, there has been increasing use of cases to contextualize content and promote critical analysis of classroom situations in an effort to make content more relevant and meaningful to preservice teachers and to emphasize theoretical applications to the classroom (Patrick et al. 2011).

Researchers have often likened case-study instruction to that of problem-based learning (PBL) (DeMarco et al. 2002; Wright and Heeran 2002). PBL refers to students acquiring knowledge and skills through real-life problems that are presented in context with the support of teachers and experts (Hung 2002) and occurs as a result of students' efforts to solve a complex problem by identifying their own learning needs, locating resources to meet those needs, and applying what they have learned to the problem situation (Pedersen and Liu 2002). PBL is focused on engaging students in a problem-solving activity that students can relate to and see as meaningful and has been discussed as a viable instructional approach, particularly with that of older students from middle-school upwards into higher education.

Research on the beneficial outcomes of case-based, PBL is steeped in the annals of medical research. As Aspy et al. (1993) discuss, for many years, medical schools have explored alternative ways of educating future physicians, including PBL where students are given medical records and asked to determine a patient's medical problem and devise treatment. The cite-specific PBL programs that resulted in learners who were more self-directed, mastered essential content, were less threatened by the learning environment, and were more able to transfer learning across situations. Researchers have proposed that for nursing students, case studies provide opportunities for students to actively experiment with solutions to dilemmas within the safety of their coursework (DeMarco et al. 2002).

The implication is that such an enriching PBL environment might also support the education of preservice teachers. The proposed benefits to students' learning are diverse including helping students to engage in critical and creative reasoning, open-minded reflections, active learning and problem-solving, application of relevant concepts and more sophisticated explanations, and the construction of flexible knowledge (Hmelo-Silver 2004; Hung 2002). In particular, students in a problem-based educational psychology higher education course were found to identify appropriate course concepts and apply them to multiple problems in increasingly sophisticated ways (Hmelo-Silver 2004).

Instructors in educational psychology can even use case-based instruction as a way to authentically assess students' mastery of important academic content. Across grade-level and subject matter domain, there is increasing interest in creating authentic classroom assessments that mirror the real-life context (Mayo 2010; Moon et al. 2005; Svinicki 2005). Some of the proposed benefits of using authentic assessment include a richer understanding of student learning on the part of instructors, student motivation and engagement in learning, students' seeing the value and meaningfulness in the activity, opportunities for embracing multiple intelligences, a focus on higher-level thinking and problem-solving, and greater transfer of student learning to the real-world (Darling-Hammond et al. 1995; Day 2002; DeCastro-Ambrosetti and Cho 2005; Gulikers et al. 2004; Janesick 2006; Svinicki 2005; Wiggins 1998). In K12 education, students might be asked to translate aloud a foreign language passage in a book, conduct a science experiment, play a musical instrument, or write a newspaper editorial in an effort to truly capture whether the student can think like a foreign language expert, a scientist, a musician, or a newspaper editor.

The same can be said for the use of case-study instruction in courses of educational psychology. Instructors can better assess whether prospective teachers can, in fact, think like an expert teacher. Authentic assessment can require students to utilize knowledge from different subject domains. For instance, a classroom challenge may require students to read and reflect on the current research literature on effective teaching, apply learning and developmental principles, and yet also take into account complex social or contextual dynamics. Authentic assessment in higher education psychology or teacher preparation courses, including case-based instruction, inspires students to construct and apply knowledge in more meaningful and task-specific ways, and when done cooperatively allows for group feedback to encourage students' growth and development (Janesick 2006; Mayo 2010). When used in educational psychology courses, case analysis assignments can range from simply preparing case notes to full-blown literature reviews and audiovisual presentations, and peer reviews allow for the opportunity to examine preservice teachers' grasp of issues and feasibility of their proposed classroom solutions (Sudzina 1997). Case-based teaching allows for more in-depth coverage of theory, involves students in addressing higher-level questioning, and appears to enhance the amount of content learned in educational psychology (Sudzina 1997).

4.3.3 Scaffolding of Critical Thinking Skills

Case studies also offer the opportunity for students to engage in critical thinking (Grossman 1994; Harrington 1995; Heitzmann 2008). It has been proposed that case studies have the potential to be experiential and transformational learning opportunities where learners transform abstract events into knowledge and students experience significant changes in abstract reasoning, critical thinking, reflective judgment, and conceptual complexity (Kreber 2001). As previously discussed, case-based instruction affords the opportunity for prospective teachers to explore the multiple perspectives of diverse stakeholders in education (Harrington 1995; Risko 1991). Students, teachers, parents, and administrators might view a particular dilemma differently. "Awareness of alternative perspectives is not only a key aspect of critical thinking but may be a necessary step to being able to reflect on and critique our own perspective and, when necessary, move beyond it" (Harrington 1995, p. 209). Consequently, consideration for these diverse perspectives can lead to more thoughtful action at the decision-making table.

Critical thinkers gather and assess information, ask vital questions, come to conclusions, apply their learning to real contexts, and reflect on their learning (Paul and Elder 2001). In preservice teacher preparation, case-based instruction "provides opportunities to marshal and evaluate evidence for judging alternative interpretations and actions…" (Harrington 1995, p. 204). "In particular, case studies help educational psychology students learn how to frame problems, understand the tacit knowledge they bring to such situations, and value multiple theories of action" (Herman 1998). Lundeberg and Scheurman (1997) employed the use of case studies before and after units of instruction in educational psychology as a way to anchor understanding of theoretical concepts. They concluded that students' learning was affected by the case study by comparing their responses to the cases before and after instruction and that students benefit from repeated discussion of cases because it allows for novel problem-solving and critical thinking, reorganization of ideas, and opportunities to evaluate others' viewpoints. Other work has also found case-based pedagogy to encourage psychology students' critical thinking and higher-level conceptual understanding (Mayo 2002).

These findings are not entirely surprising. Often, instructors will offer case-based instruction during group activity such as group discussion or group projects. Research has long demonstrated that cooperative learning activity benefits students' higher-level reasoning, critical thinking, and problem-solving skills (Gillies and Boyle 2010; Johnson and Johnson 2009; Qin et al. 1995; Vermette 1998). "Within cooperative learning groups there is a process of interpersonal exchange that promotes the use of higher-level thinking strategies, higher-level reasoning, and metacognitive strategies" (Johnson et al. 1995, p. 46). In addition, PBL that was discussed as being similar to case-based learning earlier in this article also emphasizes the authentic aspect of learning in context. Instructors create real-world problem that students will attempt to solve within a particular educational situation. PBL is made up of real-world problems that are meaningful to students,

collaborative problem-solving communities where students are self-directed and actively involved in critical thinking and other higher-order thinking skills (such as the ability to apply, analyze, synthesize, and evaluate), opportunities for scientific thinking (identification of problem, generation of hypotheses, inquiry, and investigation), incorporation of multiple learning resources, and culminating/assessment activities that allow learners the opportunity to demonstrate their mastery of material (Echeverri and Sadler 2011; Hung 2002; Hushman and Napper-Owen 2011; Own et al. 2010; Stepien and Gallagher 1993; Savoie and Hughes 1994; Sears 2003; Sungur and Tekkaya 2006; Yadav et al. 2011).

In Vygotsky's contextual theory, the pathway to expertise is associated with immersion in a particular social situation over time with individuals acquiring skillful knowledge and the ability to engage successfully in the discourse, norms, and practices of the particular community of practice (Vygotsky 1962). Individuals come to understand multiple perspectives on a particular subject that helps to broaden their own current conceptions. Consequently, being exposed to peer and instructor knowledge and experience helps to scaffold students' understanding of classroom teaching and their ability to think critically about it. So while they may be defending their own viewpoints at times, they also recognize and respect an alternative viewpoint of a classmate. "Ambiguity surrounding the case and value judgments of the students foster good discussions and the search for better decision models. Cases encourage participation, debate, reflection, and understanding. Students attack cases from various viewpoints, differences in values and perceptions become obvious" (Grupe and Jay 2000, p. 123). Essentially, students are placed in an authentic environment where they receive guidance and scaffolding from a knowledgeable mentor and peers with varied experiences and prior knowledge. Course instructors can offer guided assistance where students model, clarify, and apply relevant cognitive skills. Therefore, giving prospective teachers opportunities to talk about practices encourages them to generate and share ideas consistent with a community of practice and develop the analytical skills of experienced teachers (Kim and Hannafin 2008a). Knowledge is invented and reinvented as prospective teachers interact with each other during authentic learning experiences reflecting real-life teaching challenges.

4.3.4 Student Motivation and Engagement

In general, teachers report that problem-based inquiry helps students' attentiveness and active participation, motivation and self-directed learning, and acquisition of subject matter knowledge and overall learning (Havorson and Wescoat 2002; Savoie and Hughes 1994; Stepien and Gallagher 1993). PBL students have higher levels of intrinsic goal orientation, task value, use of elaborative learning strategies, and metacognitive self-regulation in comparison with students instructed in a more traditional teacher and textbook-centered fashion (Sungur and Tekkaya 2006). Rather than being passive recipients, self-regulated learners actively

contribute and exercise control over their academic learning goals (Schunk et al. 2008). They establish goals for their learning, focus their attention and apply relevant learning strategies, monitor and adjust their progress accordingly. In general, authentic tasks have the potential to improve student's engagement in their work as well as their retention of information (Burton 2011). Tasks that are imbedded within authentic learning experiences are valued by students who see clear connections between curriculum content and relevancy to work-related decision-making.

In fact, case-study instruction is associated with intrinsic motivation among nursing, introductory psychology, and educational psychology students (DeMarco et al. 2002; Herman 1998; Mayo 2002). Cases can be intrinsically motivating if they are realistic and personally relevant, and this in turn promotes self-directed learning where activities are seen as valuable and interesting (DeMarco et al. 2002). Prospective teachers will see the inherent value in engaging in experiences that simulate the complexity of classroom life, and they will welcome and engage in opportunities to whether classroom challenges effectively. It may be that case-based learning naturally engages students to share their ideas on why a particular classroom challenge might be occurring and to offer their suggestions as to how to best resolve an issue they may encounter in their own professional teaching. Students find case-based instruction to be "realistic, helpful, and challenging, but also as interesting, rewarding, and enjoyable" (Mayo 2002, p. 71).

Future research on the case-study method of instruction in educational psychology should continue to uncover the relationship between this method and student motivation. In particular, it would be of interest to see how using cases in educational psychology classes might impact the learner's achievement goal orientation for learning and applying course concepts. Students' goal orientations have proven to be influential on their employment of beneficial academic behaviors (Ames 1984; Ames and Archer 1988; Archer 1994; Dweck 1986; Dweck and Leggett 1988). Further, research indicates that classroom practices can influence the goals students adopt, and that educators should strive to create mastery-oriented classrooms by engaging students in authentic tasks that hold real-world significance, by examining the authority or degree they involve students in academic decision-making, by defining success in terms of individual improvement and learning something new, and by reflecting on the classroom climate they create (Furner and Gonzalez-DeHass 2011). Students driven by mastery goals will thrive in a classroom climate that helps students to feel they can take risks, make mistakes, reveal their lack of understanding, and seek help during their internal drive toward growth and personal mastery. These classroom characteristics naturally align with case-study instruction, and research should examine whether the case-study method is associated with a more mastery-oriented approach to learning.

4.4 Effective Case Study Instruction

4.4.1 Establishing a Collaborative Community of Learners

As mentioned earlier in this article, collaboration within a community of learners is an opportunity to reflect and share one's perspective with others and to negotiate meaning and develop better solutions (Alesandrini and Larson 2002; Driscoll 2005). Individuals come to be exposed to multiple perspectives on a particular subject that may help to better inform and broaden their own current conceptions. So the ideal usage of case-study instruction will cultivate a collaborative learning environment where students are encouraged to talk about classroom teaching practices and to engage in decision-making under the guidance of their course instructor. This opportunity for discourse among a community of learners is a dominant theme inherent to authentic learning, and when used effectively will allow the student to take the role of the inquirer who engages in critical, creative, and metacognitive thinking and will establish a collaborative community of learners who can scaffold each other's learning (Rule 2006). Having conversations and sharing stories helps novice teachers develop a sense of membership in the professional teaching culture, and using cases allows course instructors to share personal experiences and wisdom about relevant teaching practices (Kim and Hannafin 2008a). During these discussions, the course instructor capitalizes on the opportunity to respond to students and scaffold their learning (Sudzina 1997).

Sometimes, case-study discussion can occur within small-group instruction where students break up into smaller groups within the class to brainstorm solutions to teaching challenges before joining in a discussion undertaken by the class as a whole. And just as with all small-group work, care should be taken into how these learning groups are structured. Research on small-group cooperative learning has demonstrated the importance of creating opportunities for students to work with students from diverse backgrounds (Jacobs et al. 2002; Johnson and Johnson 2009; Slavin 1995; Vermette 1998). Students will benefit from the opportunity to work in heterogeneous groups with students of mixed ability level, socioeconomic status, racial or ethnic background, and gender. Students with varying backgrounds, experiences, and mastery of curriculum content will be able to offer divergent viewpoints, scaffold each other's appreciation of the various nuances in a classroom situation, and pose alternative ideas for practical and effective teaching solutions. This ability to work with a diverse group of individuals will be an invaluable skill when students enter the teaching profession and must be able to consistently appreciate the multiple perspectives of diverse educational stakeholders.

Building a community of learners might take another page from what we know about effective collaborative learning and that is to begin with opportunities for team-building (Jacobs et al. 2002; Slavin 1995). It can be helpful to start off on a non-academic task that helps to build group collegiality and a learning atmosphere where students feel safe to voice their opinions. Perhaps students share a little about their own experiences in teaching, whether as a teacher, student observer, or as a parent.

Or perhaps they share their reasons for entering the teaching profession. These early experiences will allow students to develop trust in each other and the cooperative activity itself. This trust and confidence will come in handy later as students take on increasingly challenging activities involving classroom problems that lack clear-cut resolutions, call for sensitivity to diverse perspectives, and demand accountability to the various individuals affected in a given classroom scenario.

4.4.2 Complex Cases that Mirror Classroom Realities

While an important goal of teacher education is to help prospective teachers apply classroom learning to real classroom challenges, the reliance on lectures and examples that constrain accurate representations of issues, or the use of case studies that oversimplify complex problems, do little to convey the intricacy of classroom challenges nor do they engage teachers in actively analyzing problems from alternative perspectives (Risko 1991). Instead, effective case-study instruction will engage students with open-ended and unstructured cases with complex problems. The challenges depicted in cases should reflect the challenges teachers face in the classroom today. This is the hallmark of authentic learning practices where activity is ill-defined, problematic, and not easily answered (Kim and Hannafin 2008a). Cases can be as current as what is being talked about in the news, can engage students in problem-solving of situations that lack clear-cut answers, and can encourage them to look beyond simplistic explanations and instead to seek information from multiple sources (Sudzina 1997).

In the spirit of capturing more authentic learning, a good case will also require students to utilize the professional knowledge and skills expert teachers simultaneously draw on in actual classroom decision-making and incorporate knowledge from different subject domains. Cases can incorporate a multitude of the content areas of educational psychology including student development, individual differences, student diversity, learning theories, student motivation, classroom management, and assessment (Sudzina 1997). For instance, a classroom challenge may require students to read and reflect on the current research literature on effective teaching practices, apply learning and developmental principles, and yet also take into account complex social or contextual dynamics. A good case does much more than just tell a story; it offers a detailed description of a real-life situation that could happen in an actual classroom, lacks an obvious and clear-cut answer, raises thought-provoking issues, contains elements of conflict, and encourages empathy for the characters (Kreber 2001).

4.4.3 Encourage Perspective-Taking

Case-study instruction should encourage students to consider their solutions for classroom challenges from alternative perspectives and from the viewpoint of the

multiple stakeholders affected in the case being discussed (Harrington 1995; Heitzmann 2008; Risko 1991; Sudzina 1997). As mentioned previously, awareness of alternative perspectives is a key aspect of critical and reflective thinking that leads to better professional reasoning (Harrington 1995). This includes discussion that not only identifies the perspectives of individuals represented in the case but also some consideration for how different stakeholders might be affected by any decisions that are made. Just as instructors might prompt students to consider divergent theoretical applications, they should also pose questions that cue preservice teachers to consider how diverse stakeholders will be affected by their decisions. Instructors can even structure case-study activity around role-playing by assigning specific students to take on the part of the students, teacher, parents, or administrators in the case. In reality, teachers must balance competing perspectives for how a parent views the situation may be different from how the teacher or administrator views the same situation, and how one theoretical tradition applies to case issues may differ using the lens of other theoretical approaches (Harrington 1995).

This appreciation and willingness to listen to alternative perspectives begins in preservice teachers' coursework. Course instructors should take the time to demonstrate to students the beneficial value of listening to alternative viewpoints during case discussion and how listening to divergent suggestions will lead to better decision-making (Sudzina 1997). Students in educational psychology will each have varying levels of classroom experience and background knowledge. Some will have had the benefit of some teaching experience through substitute teaching, classroom volunteering, and student observations. Others will have rich experiences working with teaching children as parents, aunts and uncles, and even grandparents. In effect, preservice teachers are afforded the opportunity to view classroom challenges and take into account alternative perspectives on proposed solutions posed by their peers, much as they would be asked to remain sensitive to the alternative viewpoints of students, parents, and administrators when making decisions in their own future classrooms.

4.4.4 Scaffold Students' Reflection and Critical Thinking Skills

Awareness of alternative perspectives is a key aspect of critical and reflective thinking, and case-study instruction can help students to reflect on their own analyses, the assumptions that influence their worldviews, and the limitations of their thinking (Harrington 1995). Unfortunately, this level and quality of thought is not automatically a result of case-study discussion. Course instructors must make a conscious effort to scaffold students' reflection and critical thinking skills. Instructors can guide prospective teachers on how to reflect on their experience during case-based activities, identify important insights, and transfer learning to

new situations (Kim and Hannafin 2008a). In this respect, students might be guided in defining the problem and the relevant facts in the case, applying relevant theoretical and pedagogical knowledge to understand the problem, reflecting on the assumptions that guide their decisions, and supporting and validating their arguments (Heitzmann 2008).

As course instructors attempt to guide prospective teachers' ability to think critically and reflexively about case issues, they can build on the following suggestions for fostering critical thinking skills (Ennis 2011; Ormrod 2011):

- Model critical thinking by verbalizing your thinking as you go through the steps of evaluating the accuracy, credibility, and value of a line of professional reasoning and teacher decision-making.
- Urge students to be pause and reflect on ideas instead of making snap judgments. Ask them to validate their explanations, the reasons behind them, and whether they are good sources of information.
- Encourage students to remain alert for alternative explanations, hypotheses, or points of view.
- Occasionally ask students to defend an alternative theoretical perspective or pedagogical approach.
- Have them develop their positions in a written assignment that provides support for their assertions as well as any ongoing weaknesses that may remain unaddressed.

And as with the scaffolding of any new skill, course instructors will have to offer a great deal of support and modeling of critical thinking skills initially before transitioning to the use of guided questions and cues that will prompt students' reflection. Gradually, students will become more adept in their critical analysis and take on more responsibility for asking critical questions and reflecting on their suppositions. This ability to pause, reflect, and ask questions for deeper meaning is foundational to critical thinking for "thinking is not driven by answers but by questions" (Paul and Elder 2001, p. 46). When structured appropriately, case-based teaching can enhance preservice teachers' critical thinking, perspective-taking, and cognitive flexibility (Ching 2011; Heitzmann 2008; Lundeberg and Scheurman 1997). Through this process, prospective teachers come to a better understanding of the conceptual complexity involved in analyzing cases, and they can develop the cognitive flexibility necessary for more adaptive responses to the changing situational demands teachers face (Ching 2011).

4.4.5 Revisit Cases

Research has demonstrated that case studies can be used at the beginning of instruction to serve as an "anchor" for the upcoming lesson or at the end of instruction as a way to demonstrate students' mastery of content (Lundeberg and Scheurman 1997). This research demonstrates that students may continue to think

about cases even as they are introduced to new concepts, in effect, strengthening their grasp of class concepts just being introduced as well as those covered previously. Then, as students gain more experience with case analysis, they become more reflective, more aware of alternative viewpoints, more knowledgeable of the most effective practices, and less likely to jump to the simplest resolution (Sudzina 1997). Because of this, it will be beneficial to revisit cases brought up early in the semester as students' mastery of course concepts grows and their ability to reflect critically about case challenges expands. Instructors can even use case discussion to expose student misunderstandings and modify ongoing instruction in order to review and reteach pertinent content (Sudzina 1997).

It has been suggested that case-study instruction should avoid confusing students with too much detail early on by gradually increasing the level of complexity in the cases that are presented to students (Kreber 2001). One way to go about the revisiting of cases is to initially cover cases from the standpoints of the theories that are introduced for that day's lesson before concluding at the end of the course with a more summative discussion that looks back across the pertinent theories and their application to the case. For instance, initially, students might focus on the angle of developmental theory that applies to a given case, later in the course they might step back and examine the case from the standpoint of what we know about learning or student motivation. Therefore, during initial discussions of the case, students are becoming versed in the language of individual theories, seeing their application to authentic classroom challenges, and gaining opportunities for educational decision-making. Later in the course, as students have gained more experience in reflexive and critical thinking surrounding case analysis, they can revisit cases to reflect on the complexity of the multiple perspectives of the different stakeholders involved as well as the synergy of the diverse theoretical perspectives that educational psychology offers in assisting the teacher decision-making process.

4.5 Effective Authentic Assessment

While the interactive class discussion element of case-study instruction is often highlighted, instructors in educational psychology can also use case-based instruction as a way to authentically assess students' mastery of important academic content. Assessment can be both formative (assessing entry-level knowledge) and summative (measuring growth and understanding across the course) and range from asking students to prepare written notes in response to the case to more formal presentations that include overheads or handouts and reviews of the literature (Sudzina 1997). And what we know about effective authentic assessment practices can be applied to the use of case-study instruction in this capacity. Research offers some general criteria for the effective use of authentic assessment (Gulikers et al. 2004; Moon et al. 2005; Wiggins 1998). Assessment should:

- reflect the usage of information or skills in the real world
- be conducted in situations similar to the real-life context and occur in a social context that is present in real-life contexts
- require judgment and innovation in solving unstructured problems
- allow for feedback, practice, and revision
- evaluate students' work against rubrics that help students to understand what is expected of them, establish a clear channel of communication between teacher and students, take the guesswork out of the assessment process, and outline important criteria students should demonstrate in their product or performance (DeCastro-Ambrosetti and Cho 2005; Fischer and King 1995; Janesick 2006; Moon et al. 2005; Wiggins 1998).

Many of these tips parallel suggestions already discussed thus far in the effective use of case-study instruction during case discussion. For instance, assessment should reflect the skills that teachers will use in the classroom, and cases should require students to utilize the professional knowledge and skills expert teachers simultaneously draw on in actual classroom decision-making by incorporating knowledge from different subject domains like human development, learning theory, motivation, classroom management, or the use of effective assessment. They must balance the alternative viewpoints of students, parents, and administrators and strive to make decisions that are sensitive to various stakeholders, just as practising classroom teachers must do. Educational psychology instructors should also engage students with unstructured cases with complex problems that reflect the challenges teachers face in the classroom today. And while they may discuss cases from the standpoints of the theories that are introduced for that day's lesson, they can revisit cases toward the end of the course with a more summative discussion that looks back across the pertinent theories and their application. These discussions allow for ongoing feedback, opportunities to practice theoretical application, and the chance to reflect, expand and revise one's thinking as they prepare to demonstrate their professional knowledge within a final culminating project or paper.

Students can then incorporate what they have learned from case discussions into a culminating project or written assignment. As one might expect, using authentic assessments like case-study assignments will add a bit of complexity to the evaluation process of students' final products. An effective way to evaluate students' work might be through the use of rubrics that outline important criteria students should demonstrate in their product or performance (DeCastro-Ambrosetti and Cho 2005; Fischer and King 1995; Janesick 2006; Moon et al. 2005; Wiggins 1998). Rubrics provide a description of student performance that designates requirements for each rubric score's points, and their usage adheres to the belief that effective assessment begins with reflection about what students should know and how that knowledge will be appraised (Mabry 1999). Rubrics help students to understand what is expected of them, establish a clear channel of communication between teacher and students, and make grading more objective (DeCastro-Ambrosetti and Cho 2005). Instructors in educational psychology can develop criteria for what is to be included in a case-

study paper, whether it be necessary core content areas or required outside support from the relevant research literatures, and share criteria with students at the beginning of the course.

4.6 Traditional or Web Environment

Case-based instruction could easily be adapted to both the traditional classroom environment or via distance learning and Web-assisted instruction. As stated previously, many instructors use case studies as a vehicle for classroom discussion. In the Web environment, this discussion could take place on either synchronous or asynchronous discussion boards and chat rooms. Bonk et al. (1998) explored whether preservice teachers' use of case studies via the Web would impact their learning of educational psychology. The authors found many positive results with regard to the Web, including students' diligent involvement in postings and communication, reciprocate interaction among many stakeholders such as students, instructors, cooperating teachers, as well as peer support and social acknowledgment.

An advantage to using case studies in online learning environments could also lie in its potential to reduce the amount of class time that is spent on case discussions and feedback, which otherwise could be a concern if instructors find limited instructional time to be a factor and are deciding whether they use case studies in the classroom versus just focusing on methodically teaching conceptual knowledge. Bruning et al. (2008) conducted a study that compared the use of case studies in both a traditional course as well as in a distance learning course and found that students engaged in both types of case-study discussions (traditional and Web) improved in their ability to critically analyze novel cases when compared to students that had not been taught using case studies. Similarly, Pytlik-Zillig et al. (2011) also found that students engaging in case-study instruction via online learning or via face-to-face classroom instruction outperformed students that did not receive case-study instruction when presented with new teaching scenarios. Therefore, regardless of whether students engaged in case-study learning and discussion face to face or in a distance learning environment, they still were able to benefit from the use of cases for learning of the conceptual knowledge. Hence, the critical ingredient may truly be the opportunity for dialog and the exchange of ideas that can occur in either forum.

Video-based instruction provides the opportunity for viewing authentic classroom events where the student viewer has the chance to come to their own interpretation of events (Risko 1991). In this respect, viewers can observe the actual environmental context and the verbal responses and facial expressions of both teacher and students. Barnett (2008) found positive educational experiences when preservice teachers engaged in the use of a Web-based program called the inquiry learning forum (ILF). ILF provided the students with the opportunity to view teaching videos, artifacts, student work, and use outside resources while

engaging in asynchronous discussion forums. Therefore, online learning with multimedia cases offers students a host of opportunities in which to interact with the case study. With the use of hypertext links, a student could have access to real-life interviews or chats with expert teachers, work samples and archival data for each case, and case libraries as well as receive case-based instruction in the form of an apprenticeship (Kim and Hannafin 2008b).

Scaffolding techniques can also be introduced into the Web environment in order to parallel the types of interactions that would be typical in the face-to-face environment. Demetriadis et al. (2008) conducted a study that demonstrated that students involved in a Web course using case-based learning improved their conceptual knowledge of cases when a scaffolding questioning strategy was implemented. The questioning strategy served to scaffold students' learning and guided their attention to the most important aspects of the case, thereby assisting in their problem-solving of the case at hand and their ability to transfer this knowledge to future novel cases. Thus, while the online environment undoubtedly opens the door to new possibilities in the use of case-based learning, it seems that the key to students learning from case studies is not contingent on the traditional classroom environment versus the online learning platform but rather in the process that is involved. Kim and Hannafin (2008b) suggest that case-based learning is grounded in a design that involves retrieving previous experiences in case-based form that relate to the problem or the new case that the preservice student is faced with, and when their prior knowledge is not enough the student will acquire new information and concepts that they can apply to successfully resolve the case. Therefore, they are building their knowledge base for future use, and this process is the same regardless of the way in which the case is presented.

4.7 Conclusions

The use of case studies is becoming increasingly popular as a way for preprofessional teachers to actively engage in problem-solving for real-life classroom situations as they analyze a variety of classroom scenarios using the pedagogical and theoretical knowledge that they have been taught. Building on the social constructivist perspective, case-study instruction allows for social dialog and exploration in an atmosphere of shared learning among peers and instructor, fosters group reflection and multiple viewpoints, and encourages meaningful group activities around common interests and authentic real-world problems. Cases can also demonstrate the collaborative nature of teaching by illustrating how a teacher works jointly with other stakeholders such as the school principal, guidance counselor, students' parents, and students themselves in order to assist a student's academic learning. Benefits associated with this method of teaching include prospective teachers gaining an appreciation for the complexities involved in teaching, opportunities for scaffolding of critical thinking skills, students being involved in authentic learning experiences for teacher decision-making, and student

motivation to learn academic content. However, instructors in teacher preparation programs must look at how they are using case-based instruction. Ongoing research on this method reveals that the most effective case-study activity will establish a collaborative community of learners, utilize open-ended cases that mirror the complexity of classroom life, encourage multiple perspective-taking, scaffold students' critical thinking and reflection skills, revisit cases more than once, and incorporate what we know about effective authentic assessment when culminating in projects or written assignments.

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Chapter 5
An Experiential Learning Approach to Teaching Business Planning: Connecting Students to the Real World

Manisha Karia, Hanoku Bathula and Malcolm Abbott

Abstract In recent years, a number of business schools around the world have moved from traditional lecture-style teaching to other learning approaches in imparting skills. In this chapter, we present the results of an evaluation of a business planning course that departed significantly from the traditional lecture-style teaching approach to a more student-focused experiential learning approach in order to acquire entrepreneurial knowledge and skills. In doing this, we provide a description of the content and delivery of the course and then examine its impact on the learning outcomes for students. Using a survey method, we collected data from 161 final-year bachelor students to gauge the success of the course. The findings indicate that the content and the delivery mode of the course are appropriate. In addition, students report gains of relevant entrepreneurial knowledge and skills which can assist them in setting up and managing a business. However, the learning gains in the finance area are comparatively limited, suggesting the need for a different type of pedagogy for this particular functional area of business. The findings from this study have implications for curriculum designers, career planners, and potential entrepreneurs.

Keywords Business education · Entrepreneurship · Business planning · Experiential learning · Student-led learning

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5.1 Introduction

Tell me and I'll forget; show me and I may remember; involve me, and I'll understand—
A Chinese proverb

The role of higher education toward economic development is well documented by scholarly literature (Porter 1990). In this context, the rising pressures of recent years associated with globalization and the more uncertain business conditions that this process creates highlight the importance of higher education to modern business managers (Hay 2008; Marginson and van der Wende 2007). This is particularly so in the case of business education as it is focused on the intellectual capabilities, and the technical and critical thinking skills required by graduates to be successful in a modern business climate (e.g., Skinner et al. 2004; Snyder 2003; Higgins and Elliot 2011). These scholars have argued that business education should also impart knowledge and skills in a range of areas such as general problem-solving, decision-making, communication, coordination of resources, creativity, and the ability to deal with financial matters (Cheung 1998; Holter and Kopka 2001; Özdemir et al. 2006; Snyder 2003; Arthur et al. 2012). Imparting knowledge and skills is therefore an onerous and complex process, both for students and their teachers.

Business education itself has become a very important part of modern higher education, in many cases making up the largest single proportion of students enrolled in colleges and universities. In the USA in 2009, for instance, students of business and economics made up around 22 % of all enrolments in four-year degree granting institutions (National Center for Education Statistics 2011). Similarly, in the world's largest higher education system, namely China, students of business and economics make up 28 % of enrollments in regular institutions of higher education (China, Ministry of Education 2011). These sorts of figures are typical across most countries, which suggest that the quality of business education is a critical issue as it is likely to impact their economic development.

From an entrepreneurial perspective, the main aim of business education is to improve the capability of students to identify promising business opportunities, to evaluate these opportunities in terms of their feasibility, and to visualize a business model that can be made commercially successful (Thandi and Sharma 2004). To achieve this purpose, many universities offer a course in the area of business planning either for a new venture or for the expansion or re-launch of an existing product (Cordell 2001). It is argued that skills gained through business planning exercises enhance the entrepreneurial capabilities of future business managers, help them to succeed in a turbulent business environment, and also have the potential to reduce the number of business failures (Perry 2001).

An important factor that contributes positively toward preparing students for managerial positions is their sense of ability to perform a specific set of actions, which is referred to as self-efficacy (Bandura 1997). By improving self-efficacy, potential entrepreneurs should be able to improve their decision-making abilities and raise their general confidence to achieve desired results. In this context, a study of MBA students found a positive relationship between students' self-efficacy and

their intentions to become entrepreneurs (Zhao et al. 2005). Therefore, improving self-efficacy and entrepreneurial intentions among students can be expected to improve the entrepreneurial climate of a country, which in turn can result in economic development.

But, what is the effective way to teach the necessary relevant skills and improve self-efficacy of future managers? Arthur et al. (2012) observes that it is important to consider whether what is being taught consists of the right material and uses appropriate delivery methods that will promote and foster contributions to individuals and society. Accordingly, higher education institutions have moved away from the traditional classroom-based lecture-type teaching. Instead, they have adapted a more practical approach to learning, with a combination of several pedagogical tools aimed at providing experiential learning. Prominent among the practical approaches are computer simulations, case studies (written and live cases), client-sponsored projects, data modeling and decision-making, field visitation, and role playing (Cordell 2001; Solomon et al. 1994). Advances in information and communication technology provide a new platform for experiential learning (e.g., Arnold and Paulus 2010). In addition, business education has also focused on several "applied and cross-border skills," which are necessary for students to work successfully in the business community (Cordell 2001). Other scholars (Blaylock et al. 2009) have suggested use of clinical models used by nursing schools in business teaching by integrating theory and practices. A common underlying objective of all these approaches is to provide students with a more practical learning experience that will better prepare them for their business careers.

The purpose of this study is to evaluate the relevance and effectiveness of a business planning course taught in an undergraduate business program at a higher education institution in New Zealand. The course is taught using a uniquely structured program that is based on experiential learning approach, the details of which are described later in the chapter. The rest of the chapter is presented in four sections. First, we briefly review the literature on business planning and the teaching of business planning. Second, we describe the content and delivery of the business planning course considered in this study. Third, we present the empirical results of our study to evaluate the business planning course. In the last section, we make some conclusions, as well as present a set of recommendations.

5.2 The Purpose of Business Planning and the Manner in Which It Is Taught

Tertiary-level business education helps to develop specific managerial and entrepreneurial skills. Such skills add to the increased level of human capital formation and make a significant contribution to economic growth (Porter 1990). Recognizing the importance of business education, governments, companies, and individuals have all become increasingly interested recently in improving managerial and entrepreneurial skills. This means an increase in investment in higher education in

general and business education in particular. In addition, concerns have been raised in many countries about the need to raise not just the student numbers entering higher education, but also the need to raise the quality and relevance of higher education. It is argued that imparting specific practical skills in the area of entrepreneurship will make a positive contribution to the creation of appropriate human capital.

Business planning is at the core of entrepreneurial processes. A business plan is a comprehensive written report of the goals of the business, and includes a discussion of the business concept, the operational plan, the marketing plan, any relevant financial issues, any organizational structure, and finally legal requirements that are important to the operation of the enterprise (Meloy 1998; Zuckerman 2004). The main objective of business planning is to minimize the uncertainty of future events, while pursuing business goals (Hindle and Mainprize 2006). It acts as a road map that details the starting point, the direction, and the destination of a business (Svatko 1988), and clearly identifies the milestones to be achieved right from the start of the business until it becomes a viable commercial venture.

Regarding the efficacy of using business planning, evidence suggests that business owners who prepare business plans in advance perform well compared with those who do not, and those who have a plan before starting a business have a lower risk of failure, as against those who have no such plans (Shane and Delmar 2004). Business planning therefore compels businesses to think about issues such as environmental changes, and also ensures their ability to make sound financial investments after having identified risks, thereby increasing the chances of success in the business (Zuckerman 2004). Therefore, preparation of a business plan is a necessity for modern businesses.

Recognizing the importance of business planning, Baker et al. (1993) observe that written business plans are used not only by start-up companies, but also by existing firms. Existing firms may use them, they argue, to embark on new ventures or to revitalize a failing product line. Others have emphasized the use of business plans to enhance the chances of a firm's survival and success (Cordell 2001; Hormozi et al. 2002; Perry 2001; Schamp and Deschoolmeester 1998) and also the role played by business plans in minimizing the chances of business failure (Perry 2001).

Businesses, therefore, should draw up detailed written plans in which all critical functional areas, such as sales, staffing, human resources, and finance, are examined. Furthermore, Armstrong (2001) maintains that the true objective of business plans is to impart appropriate attitudes and motivations to the managers and staff of an enterprise. When entrepreneurs and staff of businesses have growth-generating and planning attitudes, they are found to generate higher business growth (Schamp and Deschoolmeester 1998). Hence, students learning business planning process learn not only the preparation of business plan document but also have an opportunity to acquire relevant entrepreneurial attitudes that can assist their future endeavors.

Although several studies cite the benefits of business planning, not everyone is keen on using business plans in an era of uncertainty and a constantly changing business environment. For example, Hindle and Mainprize (2006) express concern that the strict adherence to "the plan" can lead to a business failure, through the

lack of flexible responses to changing business conditions. Honig (2004) observes that business plans restrict participants from thinking outside the box, and limit the framework of available options and potential solutions due to a constantly changing environment. Despite these criticisms, the weight of evidence implies that the importance of business planning should not be overlooked. Price and Meyers (2006), for example, explain that business plans are very important because they are a tool for the conceptualization and packaging of ideas. At the very least, good business plans can be effective in reducing the odds of business failure (Crawford-Lucas 1992; Shane and Delmar 2004).

In spite of the importance of business plans to the operation and success of businesses, not all students who undertake undergraduate business programs learn about the manner in which business plans are created. Instead, students are often introduced to them in a rather ad hoc manner, with a variety of teaching techniques used in their classroom-based teaching. In many cases, students of business are not exposed to the creation of business plans until they are in the workforce. This is unfortunate, as the study of business planning not only exposes students to a commonly used tool in business, but it can also be used as a way to impart practical knowledge to students prior to taking up employment.

As a pedagogical tool, teaching the design and development of a business plan can help to enhance students' entrepreneurial abilities. It can prepare them to analyze future scenarios (Bers et al. 1997), understand the financial future and funding-related issues (Mason and Stark 2004), identify and minimize risks (Sykes and Dunham 1995), and use it as a communication device (Baker et al. 1993). Realizing the benefits of these plans, business plans are promoted by educational and governmental institutions, bankers and investors in order to promote the success of businesses (Honig 2004). Business plans are generally taught to professionals in organizations through special training sessions such as enterprise workshops, although some gain knowledge of developing plans through their formal education. Currently, teaching business planning has become much more common in business curricula round the world. Business planning not only gives the students the necessary confidence to start a new venture, but also provides them with the skills to manage it competently by exposing themselves to "real-world experience," but without the concomitant financial risks. Therefore, business planning is taught in several courses such as entrepreneurship, new venture management, small business management, and enterprise training and development (Hills 1988; Cordell 2001).

By completing a business plan, students gain a broad understanding of the main functional areas of business such as production, operations, marketing, management, finance, law, and technology. It is necessary to mention that these skills will not only help students to learn about business planning, but also prepare them for managerial jobs. Typically, planning and preparing a business plan involve different activities such as industry research, competitor analysis, production and development, marketing, financial planning, human resources, suppliers, critical risks, and future growth potential, to name but a few. On the whole, the focus is on developing conceptual skills to integrate information from various sources and to channel resources to meet the stated objectives of the business.

To encourage students to gain more realistic and practical experience, some scholars have suggested an experiential approach to teaching business plans (Honig 2004; Peterman and Kennedy 2003; Higgins and Elliot 2011). Unlike the traditional learning theories that focus on learning as behavior or cognitive outcomes, experiential learning theory emphasizes learning as a process (Kolb 1984). In fact, learning is considered to be a continuous process that consists of acquiring new knowledge, changing old ideas and even integrating the two. Learning takes place during interactions between the person and the environment (Kolb 1984). In its essence, the experiential learning approach consists of four stages of learning. These are as follows: concrete experience, reflective observation, abstract conceptualization and active experimentation, and all are necessary to transform an experience into effective learning (Kolb and Kolb 2005). Through this method of learning, students come face to face with the real world and make decisions that are real in their nature (McCarthy and McCarthy 2006).

Experiential learning helps students to explore new areas, tolerate risk, and learn from failures. Supporting this view, Lucas and Cooper (2004) argue that pedagogical approaches that focus on entrepreneurship enable participants to gain confidence and provide a chance to build self-efficacy. Higgins and Elliot (2011) endorse educational methods such as experiential learning by primarily focusing on the "role of practice as a process of learning" (p. 358). This allows student learners to go through the motions of a real entrepreneur, collect real-time data and deal with real actors in real situations, which helps them in learning from multiple perspectives of interaction. Such learning would therefore result in the creation of knowledge based on the transformation of experience (Kolb 1984). In this context, three types of learning outcomes may be noted: affective, knowledge, and skill-based outcomes (Kraiger et al. 1993). Affective learning outcomes refer to the changes in the learners' motivation and attitudes, while knowledge outcome is about the quantity and type of knowledge gained. The third type of outcome, namely skill-based learning, focuses on whether the learners are able to apply the newly learned behaviors in work or other settings.

In order to understand some of the advantages of the experiential approach to the teaching of entrepreneurship skills in general and business planning in particular, it is useful to undertake a study of a long-standing course of this sort. By investigating the success and problems associated with this single course, it is possible to learn something about the advantages to students of undertaking their own studies of business planning. Further, it will assist in the development of business programs that are better suited to preparing students for the modern business workplace.

5.3 Description of Business Planning Course

The business planning course that is the subject of this study is delivered as a capstone course of an undergraduate program of a business school based in Auckland, New Zealand. Just as is true of most other countries, business degree

programs make up a substantial part of the delivered degree programs of the New Zealand higher education sector. In 2010, for instance, business and economics students made up 40 % of enrollments in bachelor's degrees in the New Zealand higher education sector, making it by far the largest group of students in the sector in New Zealand (New Zealand Ministry of Education 2012).

The course that was examined in this study has been taught for over eight years and is well established. It is a capstone course of the business degree program. Capstone courses are becoming increasingly popular in business degree programs as they seek to integrate much of what has been taught in the previous courses. Further, their content and quality are important in determining the overall relevance and effectiveness of business education. As such, students of the course being examined are required to draw upon the knowledge gained from other courses studied previously. Therefore, this capstone course acts as an important transitional course between formal studies and the careers of the students.

The main objective of this course is to impart the knowledge and skills needed to prepare a robust business plan that recognizes all potential opportunities and critical risks of a new venture. As part of the course, students are required to draw up a specific business plan using the knowledge gained from other undergraduate courses previously studied in the degree program such as Management, Marketing, Accounting, and Economics. Typically, the final report of the business plan includes as follows: an executive summary, a mission/vision statement, a business concept, unique capabilities, any marketing issues, any legal requirements, organizational structure, some operational aspects, financial management, timelines and recommendations concerning viability. The main aspects covered in the course may be seen in Table 5.1.

One of the distinguishing features of this course is the "practical approach" in its delivery that provides the opportunity for experiential learning. Each student is given the opportunity to develop a business plan individually. There are no prescribed textbooks or traditional lectures in this course. Instead, each student is given a course workbook with a generic outline of what a business plan should cover. This workbook consists of brief notes on each element of a business plan and a description on how to go about collecting the necessary information. A week-by-week schedule is also included in this workbook as a guideline to help students (see Table 5.2).

The course is managed by a senior academic from the business program who coordinates and oversees students' progress from enrollment through to completion. Although the project is principally student-driven, each student is assigned to a qualified supervisor by the course coordinator. These supervisors are drawn from industry, along with academics both from within the department and other tertiary institutions. The professionals drawn from industry are chosen mainly due to their experience in starting and running their own business. These supervisors give a 1-hour, one-on-one consultation to each student per week. They regularly monitor progress and motivate students to complete the business plan. In addition, four workshops are conducted by experienced supervisors in different functional areas,

Table 5.1 Outline of the course

Topics covered during the course
• Idea recognition, identifying the uniqueness of the business;
• Scanning of the environment, undertaking research;
• Surveying cultural issues;
• Addressing operational issues including location analysis, production process, capacity planning, and resource requirements;
• Marketing: includes target market, product features, price, promotion and distribution, and merchandizing;
• Identifying and analyzing legal aspects;
• Organization: human resource requirements, and job descriptions;
• Financial issues: includes sales forecast, establishment costs, cash flow forecasts and planning, pro-forma financial statements, and performance evaluation;
• Other issues include management information systems, risk identification, taxation, insurance, and milestones
The aim of this course is to help students
• Gain business knowledge and skills;
• Gain confidence in undertaking independent research;
• develop networks and learn to negotiate;
• Manage time: students have to draw a timeline for writing both the plan and a milestone schedule for the company;
• Improve communication skills: written and oral, confidence in presenting the plan; and
• Gain confidence in decision-making
The structure of the course
• Students are supervised one-on-one by a staff member with industry experience;
• Each individual student writes a business plan on an opportunity he /she has identified;
• Students have to cover various sections of the plan;
• Students undertake research and analyze competitors and the market;
• Research is undertaken through secondary and primary sources;
• Students are required to attend a series of workshops where they receive assistance in functional areas of marketing and finance

such as market research, finance, and presentation skills to provide additional support for students. Students are required to use research data from both primary and secondary data sources. They are also encouraged to build contacts with traders and suppliers, while at the same time gaining an insight into the various operational aspects of the business.

Once students prepare their business plans, they submit a formal business plan report for assessment. They are also required to make an oral presentation to supervisors and other students, followed by question-and-answer sessions. During the oral presentation, students are given half an hour to present their findings and to convince the panel of experts that their plan is feasible and can be funded and launched. The report and presentation are marked out of 70 and 30 marks, respectively. Students are required to pass in both the written report and the oral

Table 5.2 Course schedule

Week	Topic headings
1	Orientation session; meet with supervisor and discuss proposal
2	Description of business/company and product (Workshop 1: Marketing research)
3	Environmental scanning
	Commence questionnaire design
4	Complete questionnaire
	Data collection week one
5	Cultural issues
	Data collection week two
6	Organizational structure and operations
7	Marketing analysis (Workshop 2: Financial statements)
8	Financial statements (Workshop 3: Financial analysis)
9	Financial analysis
10	Management information systems and identification of critical risks
	Project timeline
11	Conclusion
	Executive summary
12	Tables, charts, and appendices (Workshop 4: Presentation skills)
	Final report submission
13	Prepare for oral presentation and defense
14	Presentation before a panel of academics

Note The course schedule is only given as a guide, but minor adjustments are allowed based on student needs and project requirements; however, the submission dates are strictly adhered to

presentation to successfully complete this course. Although students in the past have prepared business plans for a range of different businesses, retail is typically the most common undertaken. Table 5.3 shows the range of industries covered by students who have successfully completed the course.

The practical approach underpinning the business planning course was appreciated by all those who were involved in running this program. As part of the quality assurance requirements of the New Zealand Qualifications Authority, the course was externally moderated by the head of the business faculty of a premier university in New Zealand. The process of moderation included evaluating the course content; interviewing the students and supervisors; appraising students' final reports and presentation material; and the marking. The external moderator's report was very appreciative of the course content and its delivery as seen from the remark that: "The business planning course … is a robust and academically excellent course …." The positive comments made by external moderators endorse the relevance and importance of this course. In light of the perceived success of the course, it is now possible to look at just how effective it has been by surveying a number of the participants.

Table 5.3 Range of industries covered by business plans (in 8 years)

Industry	Number of business plans	Percentage
Retail business	82	31.18
Import/export	18	6.84
Café	15	5.70
Recreational services	14	5.32
Personal grooming	13	4.94
Online/web-based/electronic businesses	9	3.42
Travel and tours	9	3.42
Childcare	9	3.42
Restaurants	8	3.04
Health products and services	8	3.04
Manufacturing	5	1.90
Communication/devices	5	1.90
Advertising and graphic design	5	1.90
Agriculture, forestry, and fishing	4	1.52
Wholesale business	4	1.52
Cultural and handicrafts	4	1.52
Property/business services	3	1.14
Computer services	3	1.14
Meat	3	1.14
Accommodation	2	0.76
Finance and insurance	2	0.76
Education	2	0.76
Solar power	1	0.38
Other services[a]	35	13.31

[a] Including funeral services, massage parlors, beauty parlors, hair removal, dating agencies, private investigation, security services, training consultants, etc

5.4 Evaluation of the Course

As part of this study, we undertook an empirical examination of the effectiveness of the business planning course offered as a capstone course of a business degree program. Since the student-participants used real-time data in preparing their business plans, assessing the effectiveness of learning outcomes is of importance to both students as well as educators. The intention of this empirical study was to examine how participants benefited from this course. By identifying the gains to the students, it is possible to gauge an overall impression of its value.

In order to achieve this, we conducted a survey of student-participants using a multiple-item questionnaire to examine the students' perception of the efficacy of the course. We initially developed a questionnaire using the literature on business planning (e. g., Cordell 2001; Thandi and Sharma 2004). We then integrated the learning outcomes of the business planning course in the questionnaire. We showed the instrument to academic peers and potential respondents, and finalized it after receiving their feedback. The survey questionnaire consisted of four main sections: (a) learning in key management functional areas; (b) sources influencing choice of business ideas; (c) learning achieved in entrepreneurial skills; and (d) the level of confidence in performing planning and managerial activities. We asked respondents to indicate their perceived level of confidence in knowledge and skills gained to undertake managerial/entrepreneurial roles. These items were measured on a five-point Likert scale ranging from 1 "not confident" to 5 "very confident". At the end of the questionnaire, the respondents were also asked to comment on the overall benefits and problems relating to the business planning course.

We collected the data from students who completed the business planning course during the years 2005–2008. We administered the questionnaire to students soon after they had completed the written and oral presentation of their respective business plans, and before the release of their course results. This was deliberately done to avoid any bias or influence the course results may have had on the students' views on their self-assessment. In all, a total of 161 usable responses were received, with the response rate being 81 %. Of these, 59 % of the respondents were female and 41 % were male, which is broadly representative of those undertaking the course. About 70 % of the respondents had some work experience prior to attending the course. We analyzed the data using SPSS and ranked the items based on mean scores.

5.5 Results and Discussion

In order to determine the value of an experiential learning approach, we have undertaken an empirical examination of the business planning course. The results from the empirical study are presented below in Tables 5.4, 5.5, 5.6, 5.7. The results cover the specific business planning aspects learnt in the course and also how enrolling in this course has made the students confident in undertaking business planning activities.

5.5.1 Knowledge of Business Content

A good business plan should take an integrated view of different operational areas. Therefore, knowledge of different areas such as finance, environmental scanning, marketing, and information technology is necessary (Hisrich et al. 2005). The first

Table 5.4 Knowledge of business content

Key areas	Mean	Standard deviation
Marketing	4.14	0.75
Critical risks	4.01	0.76
Environmental scanning	3.96	0.78
Operational issues	3.92	0.74
Organizational structure	3.87	0.71
Human resources	3.83	0.74
Financial projections	3.83	0.92
Management information systems	3.82	0.77
Cultural issues	3.77	0.74

aim of the study was to get some sort of indication of the degree to which the course increased students' knowledge in various business areas.

In order to accomplish this, we asked the students to indicate the degree to which they learnt different areas of business, and their responses are shown in Table 5.4.

The results point out that students perceive themselves to have gained knowledge in all of the crucial areas of business. The top three areas are marketing, risk identification, and environment scanning, which are core to business and critical for any business to succeed. This supports the findings of a number of previous studies (Galloway et al. 2005; Henry et al. 2005). Learning in the area of marketing equips students with appropriate skills to deal with issues such as target markets, estimating the number of customers, and the like, while knowledge about environment scanning helps them to comprehend the constant changes in the environment and prepare accordingly. Students have also reported improved learning in the finance area, which enables them to make financial estimates of balance sheets, income statements, and cash flow statements. Incidentally, finance is an area where many small- and medium-sized enterprises in New Zealand have been found to be lacking ("SME owners lacking in financial know-how", 2005), and it is pleasing to note that students feel more confident in this area after their project, although their confidence level in this area is comparatively lower than in other areas. Overall, this course enabled students to improve their knowledge in all the important areas required for launching a new business. A few comments from students are as follows:

> This course enables students to mimic an entrepreneur's role … by using real field data … it helps students in improving the ability of critical thinking, business planning and research skills.
> This course gives me a chance to really think about the business that I want to start in the future … learnt skills to start a business such as marketing research, sales forecast, finance, location.
> Gives all the tools and knowledge to prepare for a "real-world" business.

Table 5.5 Sources influencing the choice of business idea

Sources	Number of responses	Percentage[a]
Learnt about the topic in one of the business courses	63	39
Suggested by a friend	60	37
Found in the textbooks	45	30
Suggested by a past and/or present student(s)	39	24
Found in newspaper	34	21
Previous experience in this area	23	14
Recommended by supervisor	19	12
Parents/acquaintances have a similar business	17	11
Found in journal article	13	8

[a] *Note* Percentages do not add up to 100, as some respondents cited more than one source

The above comments clearly indicate students' perception of improvement in their knowledge and skills, which increases their self-efficacy (Bandura 1997). Prior research showed that self-efficacy is positively linked to performance (Forbes 2005). The increased level of confidence prepares students to take up challenging careers.

5.5.2 Sources Influencing the Choice of Business Idea

The second aspect of business planning that the students were surveyed about was their choice of business idea. Opportunity recognition and evaluation are the main underlying premise of setting up or expanding a business (Shane and Venkataraman 2000). In order to choose viable business opportunities, business owners may have to look at various sources (DeTienne and Chandler 2004; Young 2002). Many business schools are challenged in identifying tools to teach students "opportunity recognition" and "business evaluation" skills. In this course, students search and choose a business idea/topic from a range of sources so as to gain experience similar to what an entrepreneur would face when starting a business. Therefore, we asked student-respondents to identify the main sources that influenced their choice of business idea for their project (see Table 5.5).

Many students identified more than one source as influencing their choice of business idea. Two of the main sources of information identified were other business courses (39 %) and textbooks (30 %). This underscores the influence of formal business education on the identification of opportunities for business (Hytti and O'Gorman 2004; Koch 2005). Other sources identified are friends (37 %); past and/or present students (24 %); and parents/acquaintances (11 %), which suggest

Table 5.6 Entrepreneurial skills

Entrepreneurial skills	Mean	Standard deviation
Networking	4.00	0.68
Time management	3.90	0.93
Communication	3.90	0.77
Creativity	3.82	0.75
Critical thinking	3.81	0.80
Leadership	3.79	0.80
Social	3.76	0.71
Negotiation	3.67	0.80

the importance of networking and learning from others' experiences (McDermott 2004). One student remarked: *"I got the information about business topic from a friend who works in industry."* Another student observed: *"I got my business idea from watching TV programs."* These comments show that at least some students are drawing business ideas from their interaction with the real world and that the process of undertaking the plan encourages them to further interact with a variety of sources.

5.5.3 Entrepreneurial Skills

As well as general skills and an ability to identify opportunities, the achievement of entrepreneurial skills is important. Entrepreneurial skills are core to all growth-oriented firms, and their importance is well established in the literature (Galloway et al. 2005; Reynolds et al. 2000, 2003; Roodt 2005). The main entrepreneurial skills identified are networking, time management, communication, creativity, and critical thinking, which were also found in other studies (Henry et al. 2005; Schamp and Deschoolmeester 1998). Other entrepreneurial skills identified are leadership, social skills, and negotiation skills. These skills are equally important, even for students who intend to take up managerial positions in other firms (Holter and Kopka 2001).

The business planning course seeks to enable students to gain the multifaceted skills required to start or expand a business. The findings presented in Table 5.6 indicate that the participants believe that they have acquired these skills. In fact, one student commented: *"[this course] has improved my … entrepreneurship skills and I feel confident about how to set up a new business by myself"*. Overall, students reported improvements in their entrepreneurial skills, which are creative and analytical in nature.

Table 5.7 Level of confidence in planning and managerial activities

Planning and managerial activities	Mean	Standard deviation
Scheduling a time frame	4.02	0.66
Identifying required information	4.00	0.66
Identifying a target market	3.97	0.66
Developing strategies to manage risks and problems	3.90	0.73
Recognizing potential problems	3.88	0.79
Identifying the number and type of staff required	3.85	0.79
Analyzing environmental factors	3.84	0.68
Designing an organizational structure	3.84	0.72
Identifying a new business opportunity	3.84	0.71
Identifying required resources	3.83	0.76
Calculating break-even point	3.81	0.87
Job designing and job specification	3.79	0.77
Designing a product mix	3.77	0.70
Calculating the market size and potential	3.75	0.77
Calculating a sales forecast	3.73	0.87
Developing a pricing structure	3.72	0.82
Identifying relevant legal issues	3.68	0.80
Analyzing financial reports	3.63	0.93
Calculating financial statements	3.63	1.04

5.5.4 Planning and Managerial Activities

One additional area of skill acquired while undertaking this course was in the area of planning and managerial activities. This was encouraged by having students perform different activities such as identifying opportunities, formulating strategies, and designing organizational structures. Based on their experience in undertaking these activities, students were asked to indicate the degree of confidence in performing different planning and managerial activities. The results are shown in Table 5.7.

Students reported gaining confidence in performing a range of planning and managerial activities, particularly in the critical entrepreneurial activities such as scheduling a time frame, identifying a target market, and developing strategies to manage problems. However, one student commented: *"I can see my strong and weak sides of knowledge and confidence"*. Consistent with this view, we find that although students reported gains in knowledge relating to the finance area (see Tables 5.4 and 5.7), their overall learning is relatively low in the finance area compared with the other functional areas. This lower degree of confidence in the finance area is also consistent with the findings from New Zealand small business

owners who also report challenges in dealing with financial aspects ("SME owners lacking in financial know-how," 2005). When businesses look for external sources of finance, their business plans will be critically examined. Students, therefore, would be required to understand financial aspects thoroughly. This probably requires a different approach to teaching the finance area.

5.5.5 Other Aspects

In undertaking the survey, some other related aspects were also observed. Undertaking research to scan the environment and collecting relevant information are essential to developing a business plan. We therefore asked students to identify the major sources of information for their business plans. Their responses indicate that they have relied more on sources such as the Internet, books, and reading from previous projects, and less on non-formal sources such as networking, talking to friends, or their professional accounting firms. This could be due to two reasons: an over-dependence on formal learning in the previous courses, and the difficulties they encountered in networking with real-world actors. Explaining the difficulties in getting information from companies, one student remarked: *"It is difficult to get companies to fill in my survey or give time to discuss with me and …[they] also say information is confidential."* Still, students are appreciative of the fact that this course provides social interaction and communication, as well as an opportunity for them to understand and apply research tools.

As regards their career options, 64 % indicated that they had plans to start their own business in the future. Nearly half of these respondents (31 %), however, wanted to first gain work experience through prior employment before starting their own business, which corroborates a similar finding by Collins, Hannon, and Smith (2004). Taking up employment will help them to gain experience, sharpen their skills and reduce the risk of failure when they start their own business. One observation by a student was that: *"I gained knowledge to run my own business and was also able to work for a company confidently."* Similar comments were also made by others, indicating their willingness to keep their options open. Regardless of the future career intentions of students, nearly all expressed the view that their skill levels had been enhanced by the course.

5.5.6 Implications for Business Educators

Effective business education could help in improving the level of human capital and reduce the number of business failures. One possible way of bringing this about is to teach entrepreneurial skills and the business planning process to students by using an experiential learning approach. Feedback received from both students and also the external moderator endorses the current format of learning

the business planning course as providing a great degree of exposure to "real-world experience."

The course content and the method of delivery were found to be appropriate. In particular, the selection of experienced supervisors and one-on-one discussion was found to be quite appropriate for the effective delivery of the course. This practical approach has helped students to gain necessary business knowledge and skills to start and manage a business. Significant improvements were noticed in entrepreneurial skills and planning/managerial activities. The learning gains in the finance area are comparatively limited, suggesting that a different pedagogy be applied to this particular functional area. Overall, the learning is enhanced by departing from the traditional lecturer-driven practices to a student-led approach based on experiential learning approach.

The increase in the level of knowledge through experiential learning endorses the efficacy of experiential learning (Kolb and Kolb 2005; Higgins and Elliott 2011). This approach suggests that students need to experience all four stages of learning, namely experiencing, reflecting, thinking, and acting to achieve gains. This approach allows for the integration of students' academic studies with opportunities for direct and personal learning. For example, the authors have, while undertaking this study, observed their students going through these stages during their projects, often repeating some of these stages, to consolidate gains in their understanding of issues involved in the project. The discussions and interactions that students had with a number of "real people" in developing their business plan, their persuasive presentation, and oral defense of their project all allowed them to make the required transition from the learning of abstract ideas to active experimentation with their ideas. Here, practice of business planning is seen as an effective process of learning.

Increasing knowledge and skill levels does not just simply mean raising technical skills, but also involves the development of managerial and entrepreneurial skills. Students who gain confidence in their entrepreneurial skills are more likely to initiate effort, persist in those efforts, and perform better (Bandura 1997). This implies that the graduates of this course would be confident and ready to deal with the real world soon after their graduation. We can also infer that students who completed this course have achieved all of the three learning outcomes identified by Kraiger et al. (1993) namely, affective, knowledge, and skill-based outcomes. This prepares them to join the workforce as an effective contributor on a par with other experienced workers. For this reason, experiential learning is more effective than a traditional case studies approach to learning (McCarthy and McCarthy 2006). It also suggests that educators should focus more on various types learning mediums available for experiential learning, and this could include use of the Internet and other information and communication technologies (Arnold and Paulus 2010).

Our positive experience in using experiential approach to teaching business planning and entrepreneurial skills as part of a degree program also suggests its efficacy in other settings. For example, many governments provide specialized training to both current and potential entrepreneurs about various aspects of

establishing and managing a business. They could use the experiential approach to teaching as part of the support package made available to incentivize businesses in their respective jurisdictions. If appropriate business and entrepreneurial education is provided, it will have the potential to catapult entrepreneurs into a successful trajectory, thereby helping in job creation and economic growth.

In the wider context of using higher education to impart relevant business knowledge and entrepreneurial skills, exposing and connecting students to the real world appear to be critical for effective learning. The interactions with the environment during the experiential learning process, as part of their education, help students and future managers to be better able to make use of new technologies and business practices that exist in the real world. This can make an important contribution to raising productivity by creating higher levels of knowledge and expertise in a country.

5.5.7 Limitations

While our study refers to teaching business planning, we recognize that there is a whole gamut of related issues that affect entrepreneurs. The results from this study indicate clear gains in learning experience in the preparation of business plans, but this is not without its limitations.

We could cover only a limited range of issues related to entrepreneurship which were covered in our business planning course. We are aware that a number of related aspects such as the type of qualification, the level at which the course is delivered, the existence of prior knowledge, the contribution and support from the instructor, and the general business environment in which the study is conducted will contribute toward improving the learning outcomes and self-efficacy of the students. However, limitations of time and the way in which the course was designed did not allow for examining those variations.

In our study, we considered only the students' perception of their gaining skills, which does not necessarily indicate their level of learning in an objective manner. Neither does it guarantee that these skills will be translated to commercial ventures. We did not isolate the amount of prior knowledge and self-efficacy to measure the improvements during the course, but were guided by students' reported learning.

It should also be kept in mind that while business planning may be useful to entrepreneurs, success may depend on the existence of other factors such as infrastructure, supportive governments, access to capital, and other environmental factors. Our study has not considered these factors, but we recognize the criticality of these factors to a venture performance.

5.6 Concluding Remarks

Overall, the results indicate a broad satisfaction with the course on the part of the students and a perception on their part that they had gained considerably from undertaking it. Evidence from this study underscores the value in undertaking this form of course as part of business degree programs. This also implies that there is considerable potential for the experiential learning approach in other business subjects as well in order to raise the general quality of business degree programs.

It is important to note that the business planning course is only one specialized aspect of business education. The learning gains of the course can be further improved only in conjunction with appropriate pre-requisites and related business courses of the undergraduate program. Based on our experience, we firmly believe that maintaining the rigor and relevance of what is being taught in a business course requires continued monitoring of business environment and use of evolving pedagogical approaches.

While the results from our study provide support for an experiential learning approach to teaching business planning, we cannot generalize its application yet for all businesses in different industries with the assumption of "one size fits all". We therefore suggest undertaking further studies in the design of industry-specific business plans. For example, industries such as information technology and bio-engineering require industry-specific expertise, and this needs to be considered in business planning for those industries. Other longitudinal studies can examine the extent to which students who have completed this course have used the skills in their careers. In particular, a study of the views of former students who had undertaken the course and are now in employment would be useful. The findings from such studies would help in revising the curriculum for business courses in general and business planning course in particular. In order to make business education effective, future research should focus on more practice-based pedagogies that include constant interplay of evolving theory and practices.

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Chapter 6
Innovative Assessment and Collaborative Learning Using Problem-Based Learning: Learning Through Construction a Different Medium in Which to Excel?

M. McLoughlin, B. Burns and A. Darvill

Abstract This chapter presents the evaluation of the use a modified triple jump for PBL as a summative assessment strategy within an undergraduate nursing curriculum. A retrospective design was adopted to explore and evaluate the experiences of four cohorts of child branch students and their facilitators in relation to this revised assessment strategy. Findings demonstrated improved pass rates at first attempt and evidence of deeper learning and the strengths and weakness of the assessment strategy from the facilitator perspective in this innovative assessment.

Keywords PBL triple-jump assessment · Feedback and evaluation

6.1 Introduction

Traditionally, students in higher education learn by listening to lectures, working in seminar groups and reading the recommended and core key texts in module reading lists. They are then assessed on their ability to recall and communicate what they have learnt, often via a curriculum founded on the one-way flow of knowledge from theory to practice. However, there are other ways of adapting teaching and learning methodologies and locally, problem-based learning (PBL) has been in use as an innovative approach to student-centred learning since 1998. Wood (2003) defines problem-based learning as an instructional method where students use "triggers" from a given problem, case or scenario, to define their own learning objectives. Subsequently, students do independent, self-directed study before returning to the group to discuss and refine their acquired knowledge. She argues it is not about problem solving per se, but rather uses appropriate problems, often generated from real-life situations, to increase knowledge and understanding

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M. Li and Y. Zhao (eds.), *Exploring Learning & Teaching in Higher Education*,
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in students. We would argue that for nursing students, it is vitally important for learning in context to take place.

The PBL process is also clearly defined in the literature, and the several variations that exist all follow a similar series of steps (for example, see Gijselaers 1995, Wood 2003, McLoughlin and Darvill 2007). However, in this chapter, we argue that assessment of problem-based learning (PBL) can also be used differently to traditional teaching in higher education; students can work with facilitators, and are assessed on their ability to work in teams and can go through a process of exploring triggers for learning.

Barrows defines it as:

> The learning that results from the process of working towards the understanding of a resolution of a problem. The problem is encountered first in the learning process—(Barrows and Tamblyn 1980:1).

Feletti and Ryan (1994) state that the triple-jump assessment is a versatile but under-explored instrument and is used for assessment purposes in a PBL curriculum and it can be used for both developing and assessing problem-based learning. They also state that despite the absence of any published psychometric studies, particularly on reliability, the "triple jump" has been used internationally now since about 1980 (Feletti and Ryan 1994; O'Gorman et al. 1998). This chapter evaluates its use in the summative assessment of undergraduate nursing students. We began with the premise that assessment and learning are inextricably linked and even more so when students are actively involved and participating in the assessment of their acquired knowledge (Race 1995; Biggs 2003, Carless 2007).

6.2 Background

PBL has been described as an instructional method, where students learn through solving problems and reflecting on their experiences (for example, Barrows and Tamblyn 1980). Locally, in this institution, PBL had been used and assessed formatively in a year three module on cultural awareness for healthcare practice (McLoughlin et al. 2003). This was situated in year three of an undergraduate nursing programme, just before preparation for registration, and running since 2000. Previous student evaluations had identified that students desired recognition for the formative work that they had undertaken as part of the PBL process, with many explicitly stating that they would prefer this component to be summatively assessed and rewarded. An action plan was formulated for development from these evaluations, as it was considered important to ensure that the PBL component was aligned to the learning outcomes and the assessment strategy. Biggs (2003) argues that alignment is crucial to allow students to develop knowledge and understanding. As module team members, the process, therefore, was as equally important as the product for achieving the summative outcomes for this module (Darvill 2000). Deciding upon the type of assessment to use to enable students to undertake

different forms of assessment in order to achieve learning outcomes was another consideration. PBL was already being used both formatively and summatively as part of the curriculum changes made in 2000 (Glen & Wilkie 2000), following United Kingdom policy directives from the Department of Health and the United Kingdom Central Council for Nursing and Midwifery, now the Nursing and Midwifery Council (NMC) (DH 1999, UKCC 1999). However, the local curriculum was due for revalidation and this provided an opportunity to respond to outgoing student evaluations, where most had identified that they would have preferred the PBL trigger work to be summatively assessed and therefore rewarded with a grade.

An institutional audit (University of Salford 2006) within this university had identified an overreliance on written assessment as a form of summative assessment strategy. Having returned from a problem-based learning facilitator workshop run by McMaster University in 2000, funded as part of a Teaching and Learning Quality Initiative scheme, all the attendees were first introduced to the triple jump as a different type of assessment for student-centred learning. Reflection and feedback on the workshop learning was undertaken by both participants and was then used as a vehicle to promote change in summative student assessment strategies on return to the UK (Darvill and McLoughlin 2000; Holland et al. 1999).

Ramsden (1992, 2003) suggests that, from the students' perspective, it is assessment used as an extrinsic motivator, which always defines the curriculum being studied. Biggs (2003) uses the term "*backwash*" when students focus on assessment as being of more importance than teaching, suggesting amendments should be aligned to curriculum outcomes. The "backwash" thus becomes positive rather than negative, and deeper approaches to learning are encouraged. Haith Cooper (2000) argues that these are important considerations when developing new assessment strategies within a nursing curriculum.The integration and development of key skills for employability, such as communication and working in teams, is also crucial, in nurse education programmes [Department of Health (DH) 2001]. Therefore, the development of these skills with students before they became part of the professional workforce was a very important consideration for inclusion in this new assessment strategy (Burns 2005). A study commissioned by the University of Birmingham (2007) mapped how communication skills are assessed across a sample of professional curricula, but these results indicated inconsistent and patchy provision. These findings influenced the formation of the modified triple jump for us in this School of Nursing aiming to enhance communication skills in future practitioner.

6.2.1 The Triple Jump

A method of assessment was devised for the undergraduate medical programme at McMaster University, which was nicknamed the "triple-jump" exercise (Painvin et al. 1979). The three original steps consisted of initial analysis of the problem by the students in the presence of assessor, then information searching undertaken independently and usually over a limited period of time, and finally synthesis,

again in the presence of the assessor, and here, the students describe the process of the information search, how personal objectives were set and prioritised, which resources were used and how the time was spent. Students then present the final analysis of the problem, highlighting how new knowledge was attained, related to the understanding of the problem under investigation, and this is then followed by feedback from the assessor (O'Neill 1998).

The definition used locally in this School of Nursing is a modification of this original "triple-jump" exercise used at McMaster, with the difference being that this assessment is given to the entire class at the same time not individually, and the emphasis is not just on seeking information but also on using prior knowledge to "solve" new problems as outlined in Rangachari (2002) and Schmidt (1993). McTiernan et al. (2007) argue that careful preparation is required when developing triple-jump and PBL assessment strategies. The problems or triggers were designed and developed with qualified nursing and healthcare practitioners and resulted in five case-based scenarios being written. This was in order to meet the requirements of the module outcomes and reflected the range of complex child health nursing needs that students could encounter in the clinical setting. Wilkie and Burns (2003) state that real-life case scenarios must reflect the fact that nursing is a practice-based profession and are central to the PBL process but more crucially should be drawn from clinical practice. To provide structure for marking and feedback purposes, grade descriptors were then developed by the module team members and were based on the work of Baptiste (2000) at McMaster University in Canada and Arkell and Dudley (2009), two academics who were part of the North West problem-based learning special interest group, a group consisting of university lecturers in the UK interested in implementing PBL into nurse education curricula. Once developed, these descriptors were scrutinised and subsequently ratified by the quality assurance mechanisms within the University.

6.2.2 The Role of the Facilitator

PBL facilitation emphasises the importance of student-centred instead of teacher-centred education, and in PBL, the teacher's role is to facilitate collaborative knowledge construction (Burrows 1997). Furthermore, Dolmans et al. (2001) argue that a tutor's performance is not a stable characteristic but is partly situation specific. It is considered by many that a facilitator of PBL should have some subject matter expertise but more importantly should know how to facilitate the learning process. Therefore, it is argued that, in evaluating facilitation, what has been identified is that the role of the facilitator is central to success (McLoughlin 2002; Haith-Cooper 2003a, b; Wilkie 2004). Facilitation in education stems from the work of Rogers (1969) and Heron (1999). Rogers (1969) suggests that the qualities of an effective facilitator include the ability to be seen by students as genuine, accepting and prizing their contributions, but also being able to offer empathic understanding. Rogers and Frieberg (1994) argue that being a facilitator

requires a special perspective on life; in PBL, students learn through addressing problems and reflecting on their experience, and they work in small groups being guided by a facilitator. Ultimately, it was hoped this assessment strategy would foster collaborative working partnerships and develop skills in conflict resolution, but also focus individual and group learning. The teacher, through facilitation, should seek to foster a safe, trusting climate in which the learner is motivated to hope for success; in this way, the role of the facilitator is key to the success of PBL as a learning methodology.

Burrows (1997) also believes there should be genuine mutual respect between the students and facilitator and a partnership in learning should develop, which involves the facilitator as co-learner. However, this transition to the role of the facilitator of learning in PBL may not be easy for some lecturers (Darvill 2003). Many have been used to more traditional "transmissionist" approaches to teaching, and research exploring how to do this effectively is limited to research in centres where PBL has been used for a number of years, like Maastricht in Europe or McMaster in Canada. Tools for evaluating the role of facilitator in a PBL curriculum are scarce, and the available evidence is limited to those identified in the PBL Toolkit (adapted from Dolmans and Ginns 2005).

However, some research in facilitation has demonstrated a positive impact on educational outcomes through the use of PBL (Haith-Cooper 2003a, b). Sandahl (2009) Tuckman 1965) posit that in small group learning the teacher acts as facilitator, but one of the key issues for development and enhancement is that students should be supported to work in collaboration, and in health care, this should also be transferred to practice (DH 2001). What the triple jump and PBL involve is also encouragement in students of active self-directed learning, and what has been observed is that students encourage each other to achieve group goals, developing respect and conflict resolution skills (Brown et al. 2008; Johnson et al. 2007). Students' were advised to rely upon and encourage each other to achieve the group goal, which aids in the development of mutual respect and the development of skills and addresses conflict resolution (Johnson et al. 2007). Working collaboratively in small groups is a key to the delivery of quality care within the clinical practice (DH 2001). Thus, small groups of between 4 and 6 students were developed to undertake the analysis of the PBL case.

6.3 Methods

The aim of the study was to evaluate the impact of the triple-jump summative assessment strategy and answer the following questions:

- Did the triple jump improve the rate of first-time passes and did marks improve compared to the written format?
- What was the student experience of the triple jump as a summative assessment strategy?

- What were the experiences of the facilitators using the triple-jump assessment strategy?

Evaluation research was chosen to help answer the research aim and questions. According to Silver (2004) programme providers use evaluation research in order to consider the "*effectiveness*" of educational developments. The findings from evaluations focus on the strengths and weaknesses of various aspects of innovations as well of their overall "outcome". This information is, in turn, used to consider how such interventions might be modified, enhanced or even eliminated in the effort to provide an effective assessment.

A mixed-methods approach was chosen to undertake this evaluation. Data were collected in the form of student evaluation questionnaires, and in facilitator focus groups. Bryman (1988, 2006) and Carpenter and Jenks (2003) describe how evaluation studies can use a fusion of the two styles of research, i.e. a mixing of qualitative and quantitative designs. Mixing methods offers ways of generating new ways of understanding and experience and offers an alternative picture of the phenomena under study. Mason (2006) believes that any experience can be multidimensional; therefore, adopting an inclusive approach can enhance the understandings of the problem. However, this approach is not without criticism and difficulties as Mason (2006) also suggests that the researcher needs to engage with the question to ensure that the data generated allow comparisons to be made.

6.3.1 Sampling

Purposive sampling was used for this evaluation as it focused on a discrete curriculum change taking place and ultimately the experiences of specific cohorts of students and their facilitators, with the intent of obtaining the views of as many as possible (Silverman 2001; Parahoo 2006; Mason 2006). Thus, this sample was chosen in terms of relevance to the research questions aiming to produce meaningful results.

The target population were third-year child branch diploma in nursing students and their facilitators. One hundred and seven students from 4 cohorts over 2 years, who were undertaking this assessment as part of their studies, were included over the course of the module life. Four facilitators from the module team also participated in focus groups. There were a mix of ages and genders in the student group, but all facilitators were female academics. The target population were beginning third-year child branch diploma in nursing students from 4 cohorts with Sept 2006 ($N = 20$) acting as the pilot group (Table 6.1).

Table 6.1 Target population

Intake	No. of students	No. of responses
Sept 06	30 (1 male)	20
March 07	20 (1 male)	15
Sept 07	37 (1 male)	36
Mar 08	20 (1 male)	15
Total	107	86

6.3.2 Data Collection

Data collection was ongoing from September 2008 to March 2010. To answer the question regarding the student experience of the triple jump as a summative assessment strategy, data were collected from the students using a 10-point Likert scale questionnaire, see Appendix B). The questionnaire was designed and field-tested with a cohort, as advised in Parahoo (1997). This was then modified and revised to include questions related to the facilitator role in the triple-jump process. Following minor modifications, it was then distributed at the end of the module to three concurrent cohorts of undergraduate child branch diploma in nursing students.

Likert scales are commonly used in educational evaluation questionnaires and are advocated as a data collection tool; respondents indicate their level of agreement with specific statements that express a favourable or unfavourable attitude towards a concept being measured Seale (2004). The scale consists of several declarative statements that express a viewpoint on a topic, and good Likert scales usually include ten or more statements. In this study, all students were asked to indicate their level of agreement with the declarative questions and the scoring was expressed with unfavourable scoring being 1 to favourable scoring 10 on the Likert scale. Student questionnaires were distributed in the final week of the module, before publication of assessment results so as not to influence findings.

The tool used for this questionnaire was based on the original evaluation tool developed by the Salford Key Skills team (Oakey and Doyle 2000). This was modified and amended to produce eighteen statements for this evaluation based on the findings from the fields and the recommendations provided by the PBL evaluation toolkit (PBL Special Interest Group 2009). Several key questions invited written qualitative commentary (see appendix A). The aim being to gather responses that were reflective of the different attitudes held within the student group towards the triple jump as a summative assessment strategy. According to Polit and Beck (2013), spreading out responses of various people with different attitudes along a continuum allows a broader representation of views.

6.3.3 Focus Group

The next stage of the data collection was to seek the views of the facilitators. This involved a focus group interview with the facilitators who taught and assessed learning on the module. Focus groups can provide participants with a safe environment in which to share experiences and can lead to an uninhibited discussion (Barbour 2008). Morgan (1988) cited in Cohen et al. (2000) defines a focus group as discussion between the participants about a particular topic, in this case the use of the triple jump. It is a popular research tool, but there are critical issues with the use of this method, as researchers often fail to identify how the sessions were conducted, making replication impossible (Barbour 2008). This was addressed by the researcher using the research question as a guide and framework suggested by the PBL SIG (2009) from the PBL/SIG evaluation toolkit. Another researcher was also present taking notes and observing group dynamics, as Barbour (2008) advises the interviewer to take careful note of the dynamics of the group to ensure all participants have an equal opportunity to express their views. The PBL SIG (2009) suggests focus groups are a useful way of collecting data related to PBL evaluation because the topic is focused, and the information gained can help to develop themes. The interaction between group members in the focus group should lead to greater spontaneity and a greater depth of data than would be obtained from a questionnaire or structured interview. As Kitzinger (1995) states, it "reaches the parts that other methods cannot reach" by allowing the researcher to examine not just *what* people think, but *how* and *why* they think that way. The researcher ensured that the meeting was open-ended but to the point, as advised in Morgan (1988) cited in Cohen et al. (2000), and a co-facilitator was present to take notes. The focus groups were audio taped and transcribed verbatim as were field notes.

6.3.4 Ethics and Informed Consent

Within this university, it is considered best practice to evaluate curriculum changes; ethics approval was not required, but informed consent was obtained from both students and facilitators before undertaking this study. The RCN (2009) research ethics guidance for nurses was followed throughout. Students and facilitators were advised that inclusion in the study completion was voluntary and that they had the option to withdraw at any time. Participants were fully informed as to the nature of the evaluation being undertaken in relation to the triple-jump assessment.

6.3.5 Data Analysis

Student questionnaires were analysed using simple descriptive statistical analysis (Robson 2002). The descriptive approach aimed to gather student opinions of the desirability of the triple jump as a summative assessment strategy, and the descriptive statistics allowed the presentation of quantitative descriptions in a manageable format. Findings were then summarised and presented in Microsoft Excel package. The focus groups were analysed using qualitative content analysis as discussed by Sandelowski (2000). Transcriptions were carefully examined and coded in order to identify emerging themes. The researchers individually analysed the focus group data coming together to discuss the findings and themes emerging to add rigour and trustworthiness (Guba and Lincoln 2005; Sandelowski 2000).

6.4 Results and Discussion

6.4.1 Results

The aim of the study was to evaluate the impact of the triple-jump summative assessment strategy and answer the following questions.

- Did the triple jump improve the rate of first-time passes and did marks improve compared to the written format.
- What was the student experience of the triple jump as a summative assessment strategy.
- What were the experiences of the facilitators using the triple-jump assessment strategy.

In order to answer the question.

Did the triple jump improve the rate of first-time passes and did marks improve compared to the written format.

Documentary evidence was accessed from examinations office; this included essay marks from three previous cohorts (March 2005, September 2004 and March 2003 cohorts) and compared with the marks from the four cohorts (Sept 2006 to March 2008) using the triple-jump assessment. The overall pass rate at first attempt was compared with these cohorts who had undertaken a 3000-word summative written essay on similar topic areas to those assessed using the triple-jump assessment. Results demonstrated an improved pass rate at first attempt (see Fig. 6.1) and an improved standard deviation score. (see Fig. 6.2). The use of the standard deviation allowed for comparison of observations from different normal distributions within these groups of students. The overall marks awarded were higher with the triple-jump students than the essay students.

Standard deviation is commonly used to measure confidence in statistical conclusions and is a widely used measurement of variability for comparing how

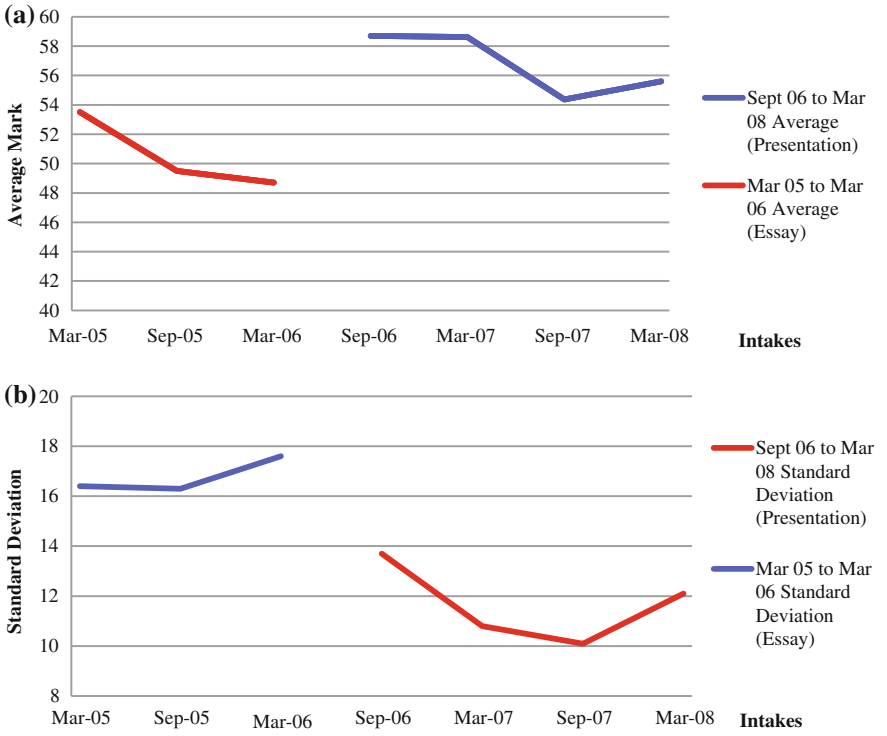

Fig. 6.1 **a** Average mark comparison: presentation V's essay**. b** Standard Deviation of presentation V's essay

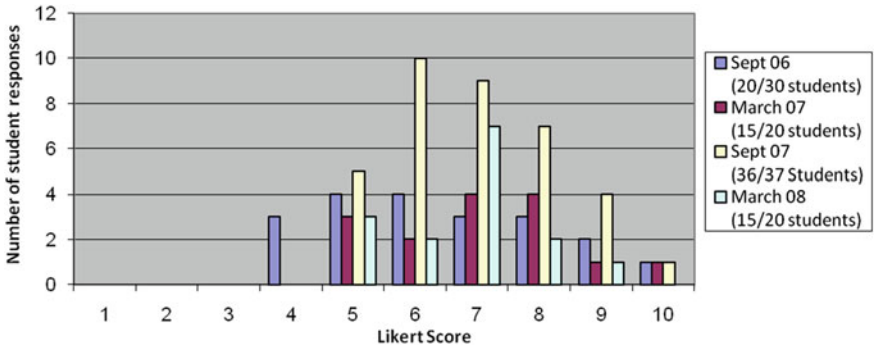

Fig. 6.2 Question 1: What was your perception of using problem based learning (triple jump) as a summative assessment strategy?

much variation or "dispersion" there is from the mean or average mark. A lower standard deviation, as indicated with students undertaking the triple-jump assessment here, demonstrates that the marks tend to be very close to the mean,

whereas higher standard deviation, as with the essay marks, indicates that the data are spread out over a large range of values. The use of the standard deviation for analysis allowed for comparison of observations from different normal distributions within these groups of students. The overall marks awarded were higher using the triple-jump assessment as opposed to essay format. We considered this to be an important finding in this study.

A selection of key findings from the questionnaires will now be discussed (see Appendix A). The response rate overall was 86 out of 107 students, and Mason (2006) suggests that a response rate of greater than 65 % is sufficient for most purposes. The field test group elicited a response rate of 20 out of a potential 30 again a greater than 60 % response rate.

The first question sought to explore the student's perception of using problem-based learning as a summative assessment strategy. Figure 6.3 below indicates that out of the total respondents who participated in the evaluation, only 3 students scored below 5 on the Likert scale in the first cohort, which suggests that overall the students were satisfied with this changed method of assessment. However, the initial findings from the field test group (S06) indicated a less favourable outcome in terms of using the triple-jump assessment strategy, this could equate with the facilitators' unease and inexperience or the individual student learning style and attraction for this type of assessment or that this was the first time it was being used and the students were aware.

In Fig. 6.4, it can be seen that four students from 3 different cohorts scored 5 and below and indicated in qualitative comments that they required more time and more input from the facilitator. The amount of facilitation has to be carefully balanced to ensure students do not become overreliant on the facilitator, as it is the students who are charged with solving the problems arising out of the case presentations, and these findings are supported by Brown et al. (2008) and Matthes et al. (2008), who argue that the approach of supplementing the assessment by structured case-based tools makes it more appropriate to PBL.

Indeed, as one student wrote, *"at some stage you have to take responsibility for your learning - yes it is a new assessment strategy and it is stressful but so are written essays"*

This is reflected in the scoring of other student responses with the majority of the scores on the Likert scale between 4 and 10, indicating a leaning towards a positive facilitation student experience.

Question 4 addressed facilitator encouragement of self-directed learning by the module team. A key factor in the successful use of the triple jump is the role of the facilitator (Rangachari 2002; Wilkie 2004; Matthes et al. 2008), and according to Haith-Cooper's (1997) findings in her research with midwives, positive facilitation has an impact on educational outcomes. The literature also reports that group size is important for student learning and recommends small group sizes; locally, these were 6 students per group, which encouraged positive facilitation of student-centred learning (Sandahl 2009; Gallagher 1997). We argue that this approach offered a more coordinated effort towards self-directed learning and problem solving.

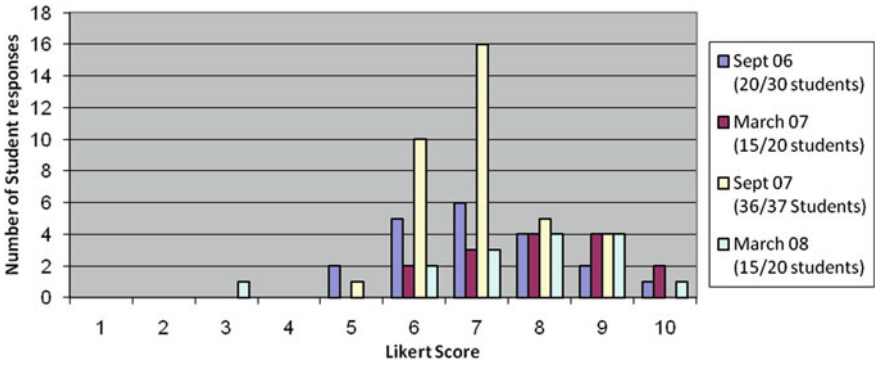

Fig. 6.3 Question 4: Facilitator encouragement of directed learning

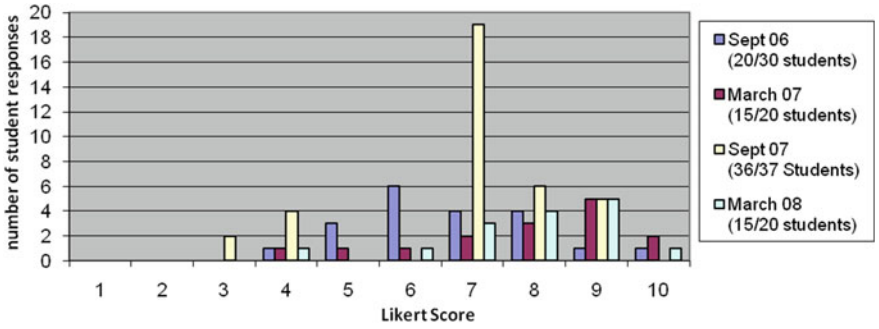

Fig. 6.4 Question 7: How well do you feel the group members have participated and worked effectively as a team member on this presentation?

Questions 7–16 focused on the student's ability to work in groups and share the learning. Question 7 (Fig. 6.5) asked *How well do you feel the group members have participated and worked effectively as a team member on this presentation?* Being reliant on other group members to share the workload is a constant source of stress associated with problem-based learning. Indeed, Savin-Baden (1997) has written extensively on this aspect of problem-based learning. However, success is achieved by students who can develop the skills to challenge those group members who lack commitment (Smith and Coleman 2008). Figure 6.5 demonstrates that the September 07 cohort reported a very good response to working effectively as a group, with over 90 % of them indicating a mark of 6 or above on the Likert scale. However, other cohorts' results are generally positive but do illustrate problems for some students working in groups and teams. The findings have close links to the requirement for developing students for clinical practice as once qualified, nurses are expected to work inter-professionally and in teams overcoming any personality issues for the benefit to the client group.

Student comments reflect this as they state:

> The facilitator of the group kept us on track to analyse the case study, this was important as we had gone off on a tangent, results fantastic ….best assignment ever… learned loads. This opportunity gave me the chance to adapt to other's working styles.

The final question 17 asked *Do you prefer the triple jump case presentation to a summative written essay?* (see Fig. 6.5). Any form of summative assessment creates stress, and many students have different learning styles; some prefer oral individual assessments, whereas others feel they can express themselves in written academic assignment (Boud and Falchikov 2007). The findings from this question are interesting, and while the majority of students from all cohorts scored 5 and above on the scale, there were 8 students who preferred to be assessed with an essay as illustrated in these quotes from the qualitative components below.

> I prefer a written assignment, academic support is more focused and I am not reliant on others which freaks me out.
> Although PBL felt very pressurised it was a nice change from a written assignment.
> I had to manage my own time and the content to produce work to a high standard to meet the deadline set by the group…challenging but on reflection enjoyed more than an essay and learned more.
> Enhanced many skills. Cognitive, written and verbal communication, due to presenting academic content and organising tasks within the group.
> I have enjoyed this assignment and the group work but had to overcome my nerves for the presentation.
> Made me want to learn more about the subject as I was teaching it to others and needed to understand and remember it.

Jeffrey (2004) and Major and Palmer (2001)identify that poor academic outcomes can be improved if areas of perceived weakness are identified at an early stage of the learning process, and Roberts and Ousey (2003) suggest this is underpinned with robust academic support

The final question asked *Do you prefer the triple jump case presentation to a summative written essay?* (see Fig. 6.5). There were a total of 86 responses in all these cohorts, and of these, only 11 scored 5 or below on this Likert scale, with the remaining 65 students' responses from the 4 cohorts involved.

We argue that any form of summative assessment creates stress, and many students have different learning preferences; some prefer oral individual assessments, whereas others feel they can express themselves in written academic assignment, also identified in Boud and Falchikov (2007). What this seems to indicate is that the PBL triple-jump presentation assessment does appeal to a higher percentage of these students surveyed here.

In relation to the aim of this study, it was important to understand the student experience of the triple-jump assessment strategy. Some of the qualitative comments illustrate some preferences in terms of academic assessment. The comments were generally positive and highlighted the skills acquisition required to successfully complete the summative case presentation

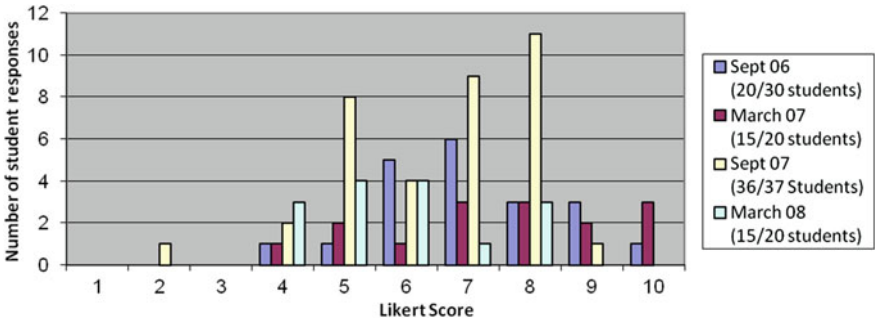

Fig. 6.5 Question 17: Do you prefer the triple jump case presentation to a summative written essay?

> I prefer a written assignment academic support is more focused and I am not reliant on others which freaks me out.
> Although PBL felt very pressurised it was a nice change from a written assignment.
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These statements do present contrasting views on how the students perceive the triple-jump assessment strategy. Clearly, one student prefers a written assignment and an individual approach to support, and this could be interpreted as a singular approach to gaining marks for personal benefit or even seeking support elsewhere. Whilst other students appear to have developed their group working skills, group performance and the adoption of peer learning approaches.

The following two statements illustrate what we considered to be positive learning outcomes for students undertaking the assessment on this module, for example one stated…

> Enhanced many skills. Cognitive, managerial, written and verbal communication, due to presenting academic content and organising tasks within the group.

with another discussing the role of the facilitator in the group sessions

> The comments and feedback were generally positive and highlighted the skills acquisition required to successfully complete the summative case presentation.

6.4.2 Focus Group Facilitator Narratives: Emergent Themes

Four themes emerged from the analysis of data from the focus groups; these were ***facilitation, assessment, student experience*** and ***group work***. Within each of the key themes, a number of issues arose related to facilitation.

6.4.2.1 Facilitation

Clear facilitation of students within groups was deemed to be extremely important, and in some instances, some expressed concern about providing too much or not enough direction. as

Another comment was about *"students going down blind alleys"* and *not engaging in critical thinking related to the case under investigation'*. Albanese and Mitchell (1993) identified through a meta-analysis review of the literature on PBL that students have to work together to analyse the problem, just as they should be doing in professional practice in teams. They state that students need to make sense of uncertain or conflicting information, but the role of the facilitator is indeed crucial for guidance. This was the experience for one facilitator in the focus group, who at trigger review stage had identified that the students had misinterpreted the cues embedded within the case. This facilitator then encouraged the students to unpick via reasoning and underpinning knowledge issues surrounding their decision-making, and ultimately, the students were guided in the right direction. Burrows' (1997) concept analysis of facilitation indicates that the facilitator should focus students on developing a goal-oriented process. This should include stepping back, encouraging investigation, identifying goals and giving meaning to activities being undertaken in relation to the trigger or casework. Schmidt (1993: 790) states that the facilitator should be discouraged from active involvement in exploration of the trigger and be considered a *"safeguard and not a guide"*. This quote illustrates how the facilitator should be emphasising how the students should develop the skills or enhance particular roles within the group sessions, *"Sometimes they are entrenched on learning just their component of the scenario and try to disassociate themselves from the rest of the content…. but as a facilitator and marker… I make it clear that the whole group must know each others content…in case someone is sick on the day…..the role of the chair person is vital"*

Furthermore, the impact of PBL facilitators on developing subject expertise remains unclear in relation to student achievement (Dolmans et al. 2002). However, in this module, the facilitators were allocated to the cases because of their subject expertise, and also their experience from clinical practice, a decision taken in relation to where the students were situated and the impact this would have on their practice in these areas in the future.

Barrows (1980, 1986) initially developed the philosophy of PBL and argues that it should consist of the following key objectives, structuring of knowledge for use in clinical context, the development of effective clinical reasoning, the development of self-directed learning skills and the increased motivation for learning.

6.4.2.2 Student Experience

Barrow et al. (2002) evaluation of PBL within nursing curricula revealed findings of an overall positive experience of PBL; however, several students initially experienced stress associated with the ambiguity of the trigger, with one student in their study stating *"compared to when we first started grasping at all the areas, now we are more confident to discount areas and say why"*. Johnson et al. (2007) identify that when members of the group encourage each other through effective communication, they are more likely to accomplish the group goals.

While on the whole the groups across all these cohorts appeared to function in a cohesive manner, there have been problems with disjunction. Savin-Baden (1998) describes disjunction as when students become completely stuck in their learning or feel fragmented resulting in frustration, confusion and often a demand for the right answers of searching for new meaning and understanding.

Indeed, one facilitator stated quite categorically

> I anticipate there are going to be problems in groups and I prefer to let them surface, encouraging openness within the group… one student went off sick and this impacted on their contribution to the group presentation ….

An interpretation of later work by Savin-Baden (1999) suggests, however, that this is a powerful component of the learning process and the problem-solving aspects of PBL; students deal with disjunction in a number of ways, but resolution can be achieved. The students from this cohort were able to solve the problem of the "missing piece of the jigsaw" and redistributed the work between the other members of the group and were successful in their summative presentation. Responsibility for own learning and motivation to learn emerged when the facilitators stated that the process of learning was important, "*it develops lifelong learning skills, teaching them how to approach, analyse and develop a topic"*. Brown et al. (2008) identify a move from a more passive to a more self-directed participative learner, stating PBL engages students in the learning process. One student stated, *"I have enjoyed this assignment and the group work but had to overcome my nerves for the presentation,*

With another declaring…

> Made me want to learn more about the subject as I was teaching it to others and needed to understand and remember it.

The facilitators identified that the PBL process was a cognitive experience, and this was demonstrated through student interactions in demonstrating their understanding of the trigger and by using cognitive reasoning when conflict arose within the group. It appeared that the knowledge evolved through social negotiation and individual understanding of the content, and this is supported by the work of Savery and Duffy (1995) who claim these as being three constructivist principles in relation to cognitive learning.

6.4.2.3 Assessment

McTiernan et al. (2007) argue that the use of the triple jump as an assessment tool encourages students to challenge practice, allowing students to identify their knowledge deficits; they begin to utilise key skills to solve problems and also promote the use of evidence to inform practice. *"I think the scenarios are good…well written and authenticated by practitioners"*. An important comment to illustrate how transferable skills of becoming a nurse and linking knowledge and understanding to practice was the overall focus for facilitators here. The participants in the focus groups identify that this method "*assesses keys skills"* and that the delivery "*demonstrates the students ability to communicate, organise material, manage their own learning and present and interpret data, they also problem solve when they are presented with the trigger at the outset"*. These findings are also supported by Biggs (2003) who suggests that the assessment strategy should be congruent with the learning outcomes and goals of the module or programme. Rangachari (2002) argues that PBL courses should place emphasis on analysis, information retrieval and then critical analysis. The students use the onion model, devised by McLoughlin and Darvill (2007), to support the process and offer structure, and with the use of carefully prepared PBL scenarios and explicit grading criteria, this can identify weaker students in order to offer more focused feedback for development (suggested in Painvin et al. 1997). *"We have more students passing first time… can access level 3 studies without re-submissions"*.

6.4.2.4 Group Work

While supporters of PBL encourage self-direction in learning, they also advocate collaborative and group learning (Barrows 1986; Sampson and Marthas 1990; Katz 1995; Boud and Feletti 1997; Engel 1997; Savin-Baden 1999). Students benefit from the perspectives of others and are encouraged to work together as they would in the workplace rather than being competitive about their learning. A collaborative approach to learning and working alongside other health professionals is necessary for practice (

Engel 1992; DH 2001). Sandahl's (2009) review of the literature identified that collaborative testing for students was a positive experience, improved student performance and facilitated critical thinking in groups.

The focus group participants here stated, "*the idea is they are supposed to gain information and knowledge from their peers which forces them to work as part of a team" "it's the nature of the task and the type of people, some students are driven and quite competitive, whereas others hang onto the coat tails of the facilitators"*.

However, even though literature reviewed here proposes that collaborative learning is a positive experience, this is not always the case for students. Indeed, Tuckman (1956) cited in Sampson and Marthas (1990) identifies that the first stage of group development is forming with other stages including storming before performing can take place. The facilitators here reported that the personal

relationships between some of the group members resulted in conflict, and this also appeared to be associated with some "high fliers" expressing fear of failure.

Johnson et al. (1991) also suggest it is a mistake to assume that students can interact effectively in groups, and often, this is because they have not been coached. With Johnson et al. (2007) later claimed that positive interdependence occurs when groups are encouraged to communicate effectively, respect each other and adopt a positive approach when conflict arises. However, they also identify that negative interdependence occurs when some group members obstruct the efforts of others, often in pursuit of their own goals. In order for the students to be able to deliver the summative component for this module, they needed to perform as a group in a seamless way, and timed sessions for the role of the facilitator are therefore built into the timetable in order to offer them a staged approach to preparation for presentation (i.e. performing). Indeed, illustrated by this quote here from a focus group participant, *"It feels like a time consuming process, but it isn't because all the supervision is timetabled not invisible like in essay supervision"*.

6.4.3 Discussion

The students were visibly worried by this new method, and expressed concerns were raised among all the groups. However, both the students and the staff involved, as illustrated with some of the facilitator narratives here, agreed that the depth of knowledge from exploration of the chosen triggers and the practice of applying their problem-solving skills were a unique and invaluable combination for achieving success.

> If you asked them what they wrote in their essay they wouldn't remember, they can recall this learning.

Both student and facilitator evaluations have been extremely positive, but as with any form of assessment, there is always a certain amount of anxiety and apprehension. Although students viewed this method of assessment with trepidation, these findings suggest that they were also able to articulate how they had developed the key skills expected of future healthcare professionals, including their ability to communicate and work together in small teams.

> If you want my opinion the Triple-jump has great merit… it is a learning process for all… facilitators included….I think it provides an interesting challenge… they go through a process of learning that gives them life long skills.

6.5 Conclusion

Summative assessment using the PBL triple jump for these students and based on the evaluations was predominantly successful, and the students achieved an improved pass rate at first attempt. We also introduced a new and successful assessment strategy that has since gone on to be further developed and enhanced in this programme.

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Appendix A

The semi-structured triple jump—a new assessment tool
Student Evaluations

On a Scale of 1–10 (1 = poor, 10 = excellent)

1. What was your perception of using problem-based learning as a summative assessment strategy
2. Was the assessment strategy and the triple jump clearly articulated in the module handbook and on introduction to the module by the module leader?
3. Was sufficient time allocated to facilitation?
4. Did your facilitator encourage self-directed learning in relation to the triple-jump clinical case while maintaining the focus of your learning?
5. Did you have timely access to your facilitator?
6. Was sufficient time allocated to researching materials to underpin the case presentation?
7. How well do you feel the group members have participated and worked effectively as a team member on this presentation?
8. How relevant was the taught content of the module to the clinical cases that form part of the triple jump?
9. Did you participate in sharing information with your group members by placing information on your group's blackboard pages (VLE)?
10. How well do you feel group members used relevant and current resources to support this presentation?
11. Did you have a chairperson?

12. How effective did you feel the role of the chair was in relation to the successful completion of this summative presentation?
13. What was the standard of references and reading used to support the presentation?
14. How well do you feel the group presentation went?
15. What was the standard of discussion in relation to this presentation?
16. What have you learnt about yourself from participating in this group presentation?
17. Do you prefer this mode of summative assessment to written academic assignments?
18. How well do you feel that working on this presentation has helped you to enhance the following key skills—communication, working with others, managing own learning, working with numbers, information technology and problem solving?

Appendix B

Presentations

Giving presentations to an audience requires substantially different skills from writing answers to examination questions. Also, it can be argued that the communications skills involved in giving good presentations are much more relevant to professional competences needed in the world of work. It is therefore increasingly common to have assessed presentations as part of students' overall assessment diet.

Advantages

- **There is no doubt whose performance is being assessed** When students give individual presentations, the credit they earn can be duly given to them with confidence.
- **Students take presentations quite seriously** The fact that they are preparing for a public performance usually ensures that their research and preparation are addressed well, and therefore, they are likely to engage in deep learning about the topic concerned.
- **Presentations can also be done as collaborative work** When it is less important to award students individual credit for presentations, the benefits of students working together as teams, preparing and giving presentations, can be realised.

Disadvantages

- **With large classes, a round of presentations takes a long time** This can be countered by splitting the large class into groups of (say) 20 students, and facilitating peer assessment of the presentations within each group on the basis of a set of assessment criteria agreed and weighted by the whole class.
- **Some students find giving presentations very traumatic!** However, it can be argued that the same is true of most forms of assessment, not least traditional exams.
- **The evidence is transient** Should an appeal be made; unless the presentations have all been recorded, there may be limited evidence available to reconsider the merit of a particular presentation.
- **Presentations cannot be anonymous** It can prove difficult to eliminate subjective bias.

Tips on Using Assessed Presentations

Be clear about the purposes of student presentations For example, the main purpose could be to develop students' skills at giving presentations, or it could be to cause them to do research and reading and improve their subject knowledge. Usually, several such factors may be involved together.

Get the students to establish a set of assessment criteria for their own presentations You may be pleasantly surprised how good their criteria are. When students have a sense of ownership of the criteria, they tend to work much harder to achieve them.

- **Ensure that the assessment criteria span presentation processes and the content of the presentations sensibly** It can be worth reserving some marks for students' abilities to handle questions after their presentations.
- **Consider using student peer assessment of their presentations** Make up grids using the criteria, which have been agreed, allocating each a weighting, and get all of the group to fill in the grids for each presentation. The average peer-assessment mark is likely to be at least as good an estimate of the relative worth of each presentation as would be the view of a single tutor doing the assessment.
- **Consider giving students some prior practice at assessing presentations** It is useful, for example, to give students a dry run at applying the assessment criteria they have devised, on one or two presentations on video. The discussion which this produces usually helps to clarify or improve the assessment criteria.

Race (1995)

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Chapter 7
Enhancing Cooperative Education Through Action Learning Projects

Jenny Fleming

Universities across the world continue to be challenged to produce graduates who can contribute productively to increasingly complex, dynamic and competitive workplaces occurring in a global marketplace. The response of many universities to the changing workplace environment has been to include a cooperative education component or work-integrated learning experience within undergraduate degree programmes.

This chapter examines cooperative education and the learning theories that underpin work-integrated learning. The theoretical basis of action learning is discussed, and a case study illustrates how action learning can be integrated into projects undertaken as part of a work-integrated learning experience. The case study exemplifies how action learning can enhance the student learning experience and provide opportunities to bring about change in practice in the sport and recreation industry.

7.1 Cooperative Education

The concept of cooperative education is not new. It is reported that over 100 years ago, the Dean of Engineering at the University of Cincinnati, Professor Herman Schneider, became convinced that many professional skills and concepts could not be learned effectively in the classroom. He proposed a plan where students could learn through integrating theory and practice using a coordinated approach of

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alternating on-campus study and off campus, real-world experiences. In 1906, Schneider first referred to this model as "cooperative education" to indicate the cooperation required between industry and university, the formal integration of learning between the classroom and the workplace and the expectation that learning would occur in both contexts (Cates and Jones 1999).

Cooperative education today can be defined as a structured experiential education strategy integrating classroom studies with learning, through productive work experiences in a field related to a student's academic or career goals (National Commission for Cooperative Education 2012). Cooperative education is often linked with an umbrella term "work-integrated learning". In tertiary education, other terminology is used for similar educational strategies, for example, practicum, internships and field experience. There are frequent discussions as to what should be considered cooperative education and a wide range of models and practices exist in different contexts globally. Cooperative education programmes are offered in a diverse range of disciplines ranging from the original base in engineering to fields such as business, liberal arts, hospitality, tourism, information technology and science. The focus of this chapter will consider cooperative education in the context of full-time undergraduate sport and recreation students undertaking a work placement, generally two days per week, during their final year of their degree.

Cooperative education involves collaboration between the student, university and workplace not only to enhance the employability of graduates through the development of generic and specific skills, but also to enable students to succeed as learners and contributors to society. An important conception of cooperative education is the notion that it entails the integration of the knowledge and skills gained in university and in the workplace. It is the integration aspect of cooperative education that distinguishes it from "work experience". Through cooperative education, the formal learning (gained through university experiences) and authentic and productive work experiences are integrated and transformed to make new meanings (Cooper et al. 2010).

7.2 Learning Theories and Cooperative Education

Learning has generally been described as the acquisition of knowledge, skills and values. Learning can occur through experiences that produce changes in understanding, which ultimately influences future actions and behaviours. Learning can be viewed as an active process, where "learners construct a picture of the world and explanations of its different phenomena by correlating and merging newly acquired material into their ongoing activity and earlier constructions" (Grosjean 2004, p. 34). There is a considerable body of research into classroom learning; however, far less is known about learning in the cooperative education context. The context is important for understanding learning as it structures the learning by

determining "what can be learned, how it can be learned as well as the meaning that society attributes to that learning" (Grosjean 2004, p. 34).

It is believed that the theoretical underpinning of the initial structure of cooperative education may have originated from John Dewey's (1889–1952) views on the significance of experience for learning. His philosophy has been described as pragmatism, in that people need to see the point of their education in order to learn effectively and that knowledge is valued for what you can do with it, not just for itself (Eames and Bell 2005). Dewey (1916, 1938) argued that education must engage with and enhance experience and suggested that learning occurs as a result of problem solving in authentic environments faced by the learner, where education is the changing of behaviours through experience. He believed that progress in educational terms was in the development of new attitudes towards, new interests in and new understandings of experience. He defined experience as physical action, the consequences of that action and the individuals' judgement of the consequences of that action. Dewey was cautious in that he did not believe that all experiences lead to desirable learning. He believed that education requires more than just experience and that reflection on experience is needed to enhance the likelihood that learning will occur.

Kolb's (1984) experiential learning model is supported as a relevant theory of learning in cooperative education. Kolb defined learning as "the process whereby knowledge is created through the transformation of experience" (p. 38). Recent discussions in the literature (Brown 2009; Seaman 2008) have argued that Kolb's original model is more an ideology rather than theory. Kolb argued that in any effective learning experience, four stages could be discerned: concrete experience, reflective observation, abstract conceptualization and active experimentation. In the cooperative education model, it is espoused that the learner engages in an experience, reflects on that experience from various perspectives, using a range of strategies, forms a personal theory or develops generalizations to explain his or her observations and then uses this to guide future actions. The implication here is that a full understanding of a concept or skill will result if a learner moves through a full cycle. Ideally, in the cooperative education context, the learner will move through multiple learning cycles. Models of cooperative education that include multiple placements or part-time modes reinforce the integration of theory and practice as students engage in more than one cycle. Where assessment practices and learning strategies, such as project work, are designed to fit this cyclical process, this can lead to enhanced student engagement in the experiential learning process.

The approaches of Dewey and Kolb are well supported by educationalists in cooperative education. These perspectives emphasize the roles that experience and reflection play as well as the importance of the physical and social settings where learning takes place. However, more recently, in an attempt to explain the nature of learning in cooperative education, there has been a focus on theories related to the social and cultural environment of the workplace. Eames and Bell (2005) through their research in a science context have advanced the understanding of how students learn in cooperative education. They support the sociocultural views

of learning and acknowledge that learning in cooperative education occurs through students participating in and moving between two distinct kinds of social practice, the workplace and the university. Their research suggests that learning from a social constructivist view is seen to occur through the use and sharing of Vygotskian psychological tools (Vygotsky 1978) such as mediated action, which involves the language, equipment, stories and other tools that constitute the everyday practice of the workplace.

Bandura's (1977) social learning theory can applied in the cooperative education context. Social learning theory posits that students learn not only from their own actions but also through the actions of others. Bandura explored the theory of imitative learning, which maintains that the learner imitates a modelled behaviour and as that behaviour is reinforced repeats the behaviour. Students also can learn through various consequences, both their own successes and failures as well as from the successes and failures of others. The pedagogy of cooperative education needs to include observation of workplace behaviour and reflection on the meaning and consequence. Thereby, students will have the opportunity for social learning as they observe the behaviours and the consequences of those behaviours in their workplace colleagues.

Situated learning theories focus on the relationship between learning and the social contexts where learning occurs. Learning can be viewed as a social process that occurs by being situated in a community of practice (Lave and Wenger 1991; Rogoff 1995) and through participation with others (Rogoff 1995). Rogoff's views are that individuals change "through their involvement in an activity and in the process become prepared for subsequent involvement in related activities" (p. 142). When cooperative education students are placed in a work environment, they learn through experiencing the activities and cultural norms of the discipline. Through their interactions with work colleagues, they gain access to knowledge that they might not otherwise have been able to learn. Working alongside professionals, students undergo a process of enculturation into a community of practice where they begin to adopt the characteristics of the professional environment (Lave and Wenger 1991). In this way, cooperative education students learn not only knowledge and technical skills, but they can learn about the culture, values and expectations of the profession.

Fundamental to learning in cooperative education is the development of reflective practice (Schön 1983, 1987, 1991). Reflection can be described as a response in which "people recapture their experience, think about it, mull it over and evaluate it" (Boud et al. 1985, p. 19). Reflection is considered as making sense of experiences through examining them and is more than simply pausing to think about an experience from time to time. Reflective practice can become educative through transforming experience and theory into knowledge (Roberts 2002), resulting in transfer of learning (Macaulay 2000). Through reflection, a new kind of knowledge can be developed that may not be gained from just having an experience. Integration of theory and practice can be facilitated through both reflection-in-action and reflection-on-action (Coll et al. 2009). Structured learning strategies (such as learning contracts and reflective journals), along with

appropriate supervision from industry and academic supervisors, can facilitate the development of skills in reflective practice so that learning through cooperative education is enhanced. Cooperative education therefore moves away from being referred to as just work experience and can be positioned well within a pedagogical context.

7.3 Benefits of Cooperative Education

Through the inclusion of cooperative education within the university curriculum, students are able to receive an education that includes both the perspectives of the educators and the employers. From the university perspective, there are several outcomes that are critical. As an educational strategy, cooperative education provides learning that is related to the students' course of study. It provides the opportunity for students to see the connections between theory and practice, which can then enhance the overall academic experience. Through the contextual nature of work-integrated learning, cooperative education provides students with the opportunity to test their aptitudes in a specific context for a given profession while they are still in a position to make a change to their career direction.

From the industry perspective, it is important for students to have the technical knowledge that their academic preparation provides; however, it is also as equally important that they develop workplace knowledge. Cooperative education provides opportunities for students to develop those skills that the industry has determined are necessary for graduate employability and success. It also provides the opportunity to develop maturity and responsibility in the transition from being a student to a professional (Cates and Jones 1999).

There is considerable literature that highlights the benefits of cooperative education to student learning in a range of disciplines (Dressler and Keeling 2011). Research has highlighted academic benefits such as applying theory into practice (Van Gyn et al. 1997) and improving motivation to learn (Burchell et al. 2000; Weisz 2000). Students also gain personal benefits such as enhanced self-confidence and increased initiative (Coll and Chapman 2000; Weisz 2000). When students are placed into real-world contexts, they have opportunities to take on responsibilities, to develop relationships with colleagues and supervisors and to work as a member of the team (Howard and England-Kennedy 2001).

Not only have the benefits of cooperative education to student learning been well documented, but the benefits to industry and employers have been extensively researched in a range of disciplines, (see Braunstein et al. 2011). Specifically in the sport context, organizations value the involvement, enthusiasm and input of new ideas by the students. Students, although only partially trained, bring qualities such as objectivity, technical skills (such as coaching or planning techniques), and problem-solving skills that are not necessarily found in other volunteers that they recruit for specific roles and sports events (Ferkins 2002; Martin and Leberman 2005). Sport organizations have highlighted the significant benefit of students

undertaking projects that may not otherwise be completed. This is seen as "value added" work for a sport organization. It is clear that industry organizations seek students who can perform the necessary tasks, but who can also offer the capability to help improve current practice.

7.4 Cooperative Education Projects

The involvement in a "real-life" project (as distinct from undertaking more random tasks) is recognized as a particularly valuable strategy that provides authenticity to the cooperative education experience. Authenticity equates not only to physical authenticity that is the real work environment, but also refers to cognitive authenticity where students encounter and engage in learning activities that are consistent with what occurs in the reality of practice. Authenticity is not achieved just by being located in a workplace, as students can be placed in a workplace without experiencing or learning about the authentic world of work. An authentic environment exposes the students to situations where they are given opportunities to observe, interact and respond and where the learning is relevant and meaningful within a specific disciplinary context.

A key outcome of cooperative education is the development of the skills that enhance employability. Undertaking a project as part of a sport cooperative education experience has been shown to facilitate personal development by providing an opportunity for the students to take responsibility that develops confidence, creativity and the use of initiative. The project also provides the opportunity for students to apply a range of technical skills and knowledge that have been learnt during their studies, yet also develop a wide range of new capabilities (Fleming and Eames 2005). Undertaking a project, as part of the placement experience, requires increased student engagement and motivation. Projects need to be meaningfully consequential, although not crucial to the organization, so that students are motivated to achieve real outcomes but are free to learn by making mistakes.

Sport students are offered placements through cooperative education that see them undertake a range of functions for their placement organizations. Some students complete basic day-to-day tasks, such as maintaining a membership database or fitness testing athletes, while others fill in staffing gaps, for example, during major events. While these types of roles can fulfil desired outcomes of cooperative education programmes (for the student, industry organization and university), the adoption of an action learning approach can add a further dimension because it aims to create change within the setting under investigation. Through the use of action learning, students are in a unique position to identify a problem, integrate theory, determine action, and implement and evaluate that action.

7.5 Action Learning

Reginald Revans (1907–2003) is credited as the first to develop action learning within the field of management education. Action learning can be considered a pragmatic and moral philosophy based on a deeply humanistic view of human potential, which through experiential learning enables problems of organizations and societies to be addressed (Revans 1998). Revans' central argument was that learning is not solely the acquisition of knowledge but is a combination of programmed knowledge (that is current knowledge or the content of traditional instruction) and questioning insight (which is derived from fresh questions and critical reflection). The basic premise of action learning is "that there can be no learning without action and no (sober and deliberate) action without learning" (Revans 1998, p. 83). Pedler (1997) considers action learning as "a flow of consciousness of action and learning between the inner (person) and the outer (organizational problem) in a continuous iterative process" (p. 67).

Revans never defined action learning as he considered that it was many things including an idea, philosophy, discipline and a method. However, Marquardt (2004) describes the essence of action learning well, "Action learning tackles problems through a process of first asking questions to clarify the exact nature of the problem, reflecting and identifying possible solutions, and moving … toward consideration of strategies and possible action" (p. 28). Reflection which involves recalling, thinking about, pulling apart, making sense and trying to understand occurs across the entire spectrum and is not considered just a discrete phase within the process. Action learning can provide a bridge between individual and organizational learning and is about creating change for an organization as well as self-development of the individual.

Action learning can be considered as a family of approaches and arguably has spread more as an ethos than a specific method. While agreement exists in the key features of action learning, there are wide variations in practice. The nature of action learning varies greatly with the context in which it is applied and the different approaches of those who initiate it. Cardno (2003) and Coghlan and Brannick (2001) describe action learning as a subset of action research, yet there exists a distinction between the two in relation to the utilization and extension of theory. Action research challenges the researcher to integrate theoretical knowledge within the practical setting and through the experiential cycling of action and reflection, contributing to an understanding of current knowledge. Action learning, in contrast, focuses on localized learning and does not require the extension of new knowledge in a theoretical sense. "In its simplest terms, it is action research without the focus on research and generating usable knowledge or theory" (Coghlan and Brannick 2001, p. 11). Action learning was therefore deemed an appropriate method within the action research family to apply to project work within an undergraduate cooperative education programme.

The collaborative nature of action learning is an important component of this type of inquiry that is consistent with the aims of cooperative education.

As described by McGill and Brockbank (2004), action learning is a "… collaborative process, which recognizes set members' social context, helps people to take an active stance towards life, overcome the tendency to be passive towards the pressures of life and work, and aims to benefit both the organization and the individual" (p. 11). Action learning can be seen as involving a community of practice, of shared work, knowledge and ways of knowing and where new social meanings and realities are collectively constructed. Action learning fits well with the sociocultural theories associated with learning in cooperative education.

Cardno (2003) noted action learning as one of the brands of action research that includes a range of approaches and practices grounded in different traditions and philosophical and psychological assumptions. Methods of inquiry of this type have been described as participative, grounded in experience and action-orientated (Reason and Bradbury 2001) and exist on a continuum. At one end of the continuum would be an approach that is highly collaborative, seeks to challenge dominant ideologies, longitudinal with multiple iterations of action and creates new knowledge or develops theory (Heron 1996; Kemmis and McTaggart 2000; Reason and Bradbury 2001). Revans' (1998) notion of action learning might be placed lower on the continuum where collaboration to varying degrees is still an important part of the process yet challenging normative ideologies and creation of new knowledge or theory is not the dominant focus. For the purpose of projects undertaken within a sport cooperative education context, Coghlan and Brannick's (2001) interpretation of action learning provided an appropriate description. Through a collaborative approach, "… participants select issues, examine them, make plans, take action and reflect on that action" (p. 11).

7.6 Action Learning and Cooperative Education Projects

The arguments presented in this chapter are based on the notion that an action learning project enhances student learning as it provides opportunities to develop capabilities for improving practice in the sport and recreation industry. The case study presented provides evidence that action learning in cooperative education projects can help create change, improve practice and contribute to student learning. The context of the case study is the cooperative education programme for the Bachelor of Sport and Recreation (BSR) at Auckland University of Technology (AUT), New Zealand.

7.7 Case Study

The BSR is a three-year programme designed to prepare students for careers in the areas of sport and recreation management, exercise science, coaching, fitness, physical education or outdoor education. During their final year, the BSR students

complete 600 h of cooperative education where work and learning are integrated through the development of partnerships between the university, the student and a sport or recreation organization. The cooperative education component constitutes half of the students' total workload for the academic year. The cooperative education courses (Cooperative 1 and Cooperative 2) are structured so that students spend the equivalent of two days a week during the two, fifteen-week, semesters of the academic year within one organization. This allows flexibility for students to experience a range of different learning activities that occur across a year, catering for the seasonal nature of the sport and recreation industry.

A key learning strategy within the BSR cooperative course is for the students to undertake a project for the host organization. The project is conceived within the industry context and must have a potential benefit for the organization. The approach used for the projects is action learning. The learning experience is facilitated and supported by an industry supervisor in the placement organization and an academic supervisor from the university.

The action learning approach consists of four phases. Initially, the BSR student, in collaboration with both industry and academic supervisors, will identify an issue or problem within the context of the organization where they were undertaking their cooperative experience ***(phase 1)***. This phase is undertaken during the first 6 weeks of the placement, and the duration in this phase is variable. The student then develops a plan for an intervention or action, collaboratively. This involves reviewing and reflecting on current practice, examining theory learnt in class, reviewing literature as well as talking to and asking questions of industry personnel and gaining feedback from supervisors ***(phase 2)***. This stage is completed by the end of the first 15-week semester. The intervention or action is then undertaken during the second semester, and the length of this phase depends on the nature of the action or intervention ***(phase 3)***. The final step in the process is the evaluation of the intervention and an extensive critical reflection on the overall experience ***(phase 4).*** A detailed report, summarizing all phases of the project (including reflection on the learning experience), is then submitted for assessment at the end of the second 15-week semester.

Two student projects have been selected that illustrate how action learning can be incorporated within the cooperative education experience to enhance student learning and improve practice in the sport industry. The projects have been summarized and appropriate quotes selected from the project reports submitted by the students as part of the assessment requirements at the conclusion of their cooperative education experiences.

7.8 Project A: An Alternative Approach to Teaching Sports Skills

The cooperative education student, Sally (pseudonym), undertook her experience in a primary school in Auckland, New Zealand. Her role was to assist classroom teachers and the wider school with physical education and sport activities. Many sport and recreation graduates in New Zealand will be involved in developing programmes to promote physical activity and sport, not only in schools but in the wider community. Therefore, a placement in a school provides a broad range of learning experiences for the student that can also be transferred to alternative settings.

Phase 1 A review of current practice within the school was undertaken, through discussions with Sally and the staff and observations in the classroom setting. The review identified low levels of involvement in sport by both children and staff. The Principal acknowledged that many staff were not confident in teaching sport skills and therefore provided limited experiences for the children. Sally and the staff acknowledged that this project potentially had a wider impact on the broader issue of youth physical activity. If the children have a more meaningful experience of physical education and sport as a fundamental part of their education, this may encourage more physical activity in the longer term.

Phase 2 Sally discussed with the school staff and Principal what their approach and commitment to sport was and the issues they faced in teaching physical activity. Sally reviewed the literature and theory that she had learned in coaching and physical activity and health classes. In particular, she focused on different approaches to teaching sport skills and from that review identified the philosophy that she proposed to utilize within the project.

The focus for the action or intervention was to introduce an alternative method and philosophy for teaching sports skills. The "Teaching Games for Understanding" approach (Bunker and Thorpe 1982; Launder 2001) was selected as it provided games focused sessions as opposed to the traditional drill-based sessions that most of the teachers were using within the school. Sally noted in her report "I shared with them (the three teachers involved with the project) the key findings of the literature review and the reasons I felt the teaching games for understanding approach would suit". She also stated that it was important to "sell" the model to the teachers to assist with the process of change. There was positive support for the alternative programme by the teachers involved in the project.

Phase 3 Sally then identified the games and activities that would form the basis for the lesson plans that were collated to form a teaching resource. This involved a continuous process of designing and implementing sessions using the new approach, gaining feedback from teachers and children, and reflection and modification of the lesson plans. This process is consistent with the reflective nature of action learning; however, as this occurred within a phase, it can be termed a

"mini-cycle" (Cardno 2003). The intervention occurred over a ten-week period. An additional outcome from this process was the development of a handbook that could be used in the future by all the teachers within the school.

Phase 4 Sally evaluated the impact the alternative approach had on the children and teachers who had been involved using a written survey, verbal feedback as well as her own observations and critical reflections. She concluded that "there was a positive endorsement from the three teachers involved with the project for the 'Games for Understanding' approach". The teachers reported increased confidence in the teaching of sport skills. Sally noted in her report a comment from the teachers that "the game sense approach better suited teachers who did not have soccer experience, than a technical skills approach". Sally reported that feedback from the children highlighted that they enjoyed the games and the teamwork that was developed. Sally also reported that the children "liked being able to achieve success and liked being involved… and they were able to make suggestions as to what they needed to do better". Subjective pre- and post-assessment of sport skills (undertaken by Sally) highlighted improvements by all three classes in the tactical concepts of the sport.

On reflection, Sally wrote in her final report that an action learning approach had provided her with an appropriate method for the project as it "utilized a form of disciplined enquiry in which personal attempts were made to understand, improve and then reform practice". She acknowledged that "because action learning is participative, it can help create an environment for change (in this case with the teachers whose classes are involved in the project). Change is usually easier to achieve when those affected by change are involved". She reported that she felt that the action learning approach encouraged her to more intensively reflect on what she was doing and that she particularly benefited from regular feedback from the children and teachers within this process. Sally also commented that this enabled her to develop her own understanding regarding teaching sport skills and felt there was greater learning from the collaborative approach that action learning allows.

7.9 Project B: Improving the Nutrition of Athletes

The cooperative education student undertook her placement at a sports institute in New Zealand. The sports institute focuses on high-performance sport development. Alison (pseudonym) worked alongside the sports nutritionist and was part of a team involved in the management of overseas athletes visiting the institute for training camps. The athletes were from a range of Pacific Island countries competing in a variety of different athletic disciplines. These athletes were all training and living at the institute and were provided all their meals by the restaurant.

Phase 1 Alison identified the issue she wanted to focus on through discussions with the athlete management team. In particular, the sports nutritionist highlighted concerns that the athletes were not meeting their nutritional requirements or following the suggested nutrition guidelines for their sport.

Phase 2 To determine current nutritional practices, food diaries and written questionnaires were completed by eight athletes. Alison analysed the food diaries and the responses from the questionnaire, which confirmed the initial views of the sports nutritionist. The reasons the athletes gave for not following the food guidelines included the following: they did not like some foods; they were not accustomed to some of the meals they were being offered; and they got bored with the same menu all the time. They were asked to give suggestions of which foods they would prefer to include in their diets.

Alison reviewed the literature and theory learned in the applied sports nutrition class as well as classes in physical activity and health. In addition, she also contacted appropriate agencies related to Pacific Island nutrition and nutrition for athletes. Alison highlighted in her written reflections the value of the collaborative approach, using a range of contacts and resources to assist her determine the changes required.

Phase 3 The focus of the action or intervention was to assist the athletes at the institute to implement and maintain an eating plan that would meet the requirements of their sport while living at the institute. Alison made recommendations to the caterers of the restaurant for changes to be made to the food offered for the athletes. There was some compromise needed due to cost and availability of certain Pacific Island foods suggested by the athletes. The chef was also unfamiliar with how to cook certain foods so the student arranged for the athletes to show the chef how to prepare some of the traditional Pacific Island meals. The athletes spent four weeks adjusting to their new diet before a final questionnaire was administered.

Phase 4 The evaluation questionnaire was used as an instrument to gain feedback on how the athletes felt about the changes made, if their issues had been resolved and if their diets had improved. Overall, the questionnaire responses revealed that most of the athletes had improved in terms of meeting their sport-specific nutritional requirements. Alison concluded that the project had been successful in creating positive change within the placement organization, "as most participants feel they are closer to meeting the nutritional requirements due to a wider variety of foods being offered to them". However, she acknowledged that this was just the first cycle in the process and that further monitoring of athletes and repeating the cycle would enhance the outcomes for the athletes and the organization.

Alison acknowledged in her final report that an action learning approach had been suitable for addressing this issue, "as it is a method in which the primary motive is to create a positive social change". Action learning is inherently about attaining a better understanding of problems and through the study of a social situation improving the quality of action taken (Marquardt 2004). Alison also

identified that action learning focuses on methods or techniques "that consider the participants' history, culture, interactive activities and emotional lives". Consulting with the industry personnel and critically reflecting on the experience was highlighted by Alison as being a beneficial part of the action learning process. This enhanced her learning experience as well as provided a collaborative approach to determining the actions needed to improve practice.

Alison commented that while doing the project she learned, "the importance of working through the steps in the process so that the project had structure and flow". She also highlighted that she had developed a number of transferable skills such as oral and written communication as well as her ability to solve problems using her own initiative. She reported in her reflections that the project assisted her to develop confidence and awareness that she could apply knowledge and theory in a practical situation to bring about a change.

Cooperative education can facilitate student learning in sport and recreation by putting into practice the theoretical concepts learned in the classroom (Martin et al. 2010). The integration of action learning within sport cooperative education projects is offered as a mechanism for enhancing the learning experience through developing capabilities for improving practice. Simply learning at work is not enough. Students need to learn what produces quality work and what it takes to improve quality. Martin and Leberman (2005) identified a desire by sport industry organizations involved in cooperative education, to engage students who might offer new and improved methods of practice. Action learning as a method of inquiry seeks to create positive change and provides a tool for cooperative education programmes to further involve research and theory in the workplace setting.

In terms of the action learning outcomes, the two projects demonstrate development at both an organizational and individual level. The projects described echo Cardno's (2003) belief that "At the personal level the participant develops a deeper understanding of their own practice and of the beliefs and assumptions that frame their practice" (p. 2); at the collegial and organizational level, "…participants develop shared understandings, and the group's ability to reflect on new learning is enriched by multiple perspectives…the commitment of staff to resolving problems… is managed and supported…" (p. 2).

At the organizational level, the evaluations undertaken by the students reported that change has been created within each organizational setting that has resulted in improved practice. The students reported that adoption of an alternative style of teaching sport skills within the school environment appears to have created a beneficial change in teaching practice and an increased cultural sensitivity regarding menu selection appears to have been instigated within the sports institute. Perhaps the most significant aspect of organizational development might be the adoption of a reflective approach that provides direct outcomes for the organization. Through the use of the action learning, the student facilitated organizational reflection by involving the teachers in the ongoing evaluation of specific lesson plans for the sports skills sessions as well as critically reflecting on the overall outcomes of the project. Action learning utilized via the medium of

cooperative education provides a problem-solving approach that draws on theory yet appears palatable for practitioners. Direct benefits accrued for the organizations and students, learning was captured through the reflective process, and therefore, it is less likely the faulty practice will be repeated.

At the individual or student level, the requirement to identify a problem, integrate theory, determine action, implement the action and evaluate the outcome challenged the students to draw on a range of resources available to them. The student reflections highlighted that significant learning had been achieved. This learning not only involved the integration of current workplace knowledge and practice, but alternative options identified through reviewing relevant literature and available theory. The students also reported that the collaborative experience in facilitating a shared solution between organization, client and student was an important capability to develop.

However, just having an experience does not necessarily mean learning will have occurred. Reflection is a crucial factor in facilitating the experiential learning process; it transforms experience and theory into knowledge and enhances the transfer of learning (Van Gyn 1996). The reflective nature of cooperative education seeks to maximize student learning (Fleming and Martin 2007); however, the addition of an action learning approach within this process provides the student with a problem-solving tool that specifically seeks to integrate theory and practice.

The quality of the learning in cooperative education is not dependent on the experience itself but on the reflection on the experience. Integrating an action learning approach encourages the student to actively engage in reflection and allows the student to develop more effective skills so that the learning from the experience can be enhanced.

As illustrated by the case study, learning is enhanced by the students' recognition that they have a stake in the process, that they have something to contribute to the process and that they have some responsibility for the outcomes. The students have been challenged to not just accept current practice but to seek methods of improvement, to implement such methods and to evaluate the outcome. Such a tool, it is argued, positions the students as change agents within industry organizations and offers the opportunity to create lasting change and the capability for improving practice. Change was identified in both projects examples. In project A, the teachers considered they had improved their method of teaching of sport skills and the student reported greater appreciation for a collaborative approach to improving practice. In project B, the student reported increased confidence and awareness regarding the application of knowledge and theory to bring about practical change and that a positive change in the athletes' nutrition had occurred.

While the two projects discussed were chosen because they clearly illustrated an action learning approach, they are also illustrative of the type of outcomes many of the students experience. However, not all student projects are successful in terms of creating significant outcomes for the organization. The level of academic supervision is critical to the success of this approach, as is the willingness of the placement organizations to engage with the students. The student also needs to be able to effectively negotiate with the industry organization and lead the project

process. Certainly, not all students exhibit the professional capabilities required at this level.

In the BSR context, undergraduate sport students are utilizing an action learning approach at one end of the action research continuum. However, at postgraduate level, sport students could be encouraged to undertake projects using higher levels of complexity to make more significant contributions to practice in the sport industry. In either situation, there is no doubt that increased academic supervision and consideration of the challenges and complexity of such endeavours is needed.

7.10 Chapter Summary

Cooperative education at university level aims to apply and integrate theoretical concepts to the work environment, to develop skills to enhance employability and to enable students to become successful learners and contributors to society. The involvement in an authentic project as part of the cooperative education experience provides a valuable strategy to enhance student learning. The case study within this chapter has demonstrated how the integration of action learning within student cooperative education projects is possible. The student projects presented exemplified how action learning can benefit the student learning experience. Learning is enhanced by the students' recognition that they have a stake and can contribute to the process and they have some responsibility for the outcomes. Students were able to develop transferable skills that enhanced employability such as oral and written communication, the ability to solve problems using initiative and confidence.

Action learning as a method of inquiry offers a tool that allows students to act as change agents within the workplace setting that can provide lasting benefits for their learning as well as creating change for the organization. Integrating an action learning approach into cooperative education facilitates reflection and this combined with an emphasis on collaboration can encourage students and industry personnel to actively engage in the learning process.

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Part IV
Learning Through Transaction

Chapter 8
Examining Instructional Interventions: Encouraging Academic Integrity Through Active Learning Approaches

Lucia Zivcakova and Eileen Wood

Abstract Academic integrity is a broad term used to identify ethical conduct in educational contexts. With respect to students, academic integrity reflects honesty in the representation of work completed in and out of the classroom. Specifically, this includes the preparation, completion, and submission of assignments and examinations, as well as the interactions that occur among students, and between educators and their students (Bertram Gallant and Drinan in Can J High Educ 38(2):25–44, 2008; Devlin in J High Educ Policy Manage 28(1):45–58, 2006). A corresponding term *academic misconduct* reflects situations where the general principles of ethical behavior have been violated. Specifically, misconduct includes any transgression, which allows a student to gain an unfair advantage over one's peers, therefore resulting in an erroneous evaluation (Davis in Cheating in School: What we know and what we can do. Wiley, Malden, 2009). The following chapter explores innovative programs designed to provide students with the information they need to determine what is and what is not ethical academic behavior, and to conduct themselves with integrity throughout their academic experience.

8.1 Academic Integrity: Background

Academic misconduct is a widespread, pernicious concern with recent research indicating from 50 % to over 90 % of students in higher education contexts self-report having engaged in at least one incident of misconduct (e.g., Baetz et al. 2011; Baker et al. 2008; Callahan et al. 2008; Gynnild and Gotschalk 2008; McCabe et al. 2006). Academic misconduct is not specific to any particular

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discipline, year, or learning context. Instead, it has been found among different majors and disciplines (e.g., Elzubier and Rizk 2003; Schrimsher et al. 2011; Smyth and Davis 2004), classroom-based and online/distance education environments (Kidwell and Kent 2008), and public and private institutions (Brown and Choong 2005).

The most common types of student academic misconduct consist of plagiarism, unauthorized collaboration on tests and assignments, and fabricating or falsifying data and/or a bibliography (Baetz et al. 2011; Brandt 2002; Christensen Hughes and McCabe 2006; Howard 2002; Kidwell and Kent 2008; Wojtas 1999). Interestingly, there is variation in the prevalence of different forms of academic misconduct. Transgressions judged by students to be the most unacceptable tend to occur less frequently, while those considered less 'serious' account for most violations (McCabe 2001).

Academic misconduct is an important issue with far-reaching consequences, as it undermines not only principles of integrity, but also the discipline itself, the institution's policy, as well as the perceptions of the public regarding the quality of post-secondary education (Carrol and Appleton 2001; Keith-Spiegel et al. 1998). Despite its importance, this rather fundamental aspect of academia is being seriously threatened by both the magnitude and prevalence of academic misconduct.

Student academic misconduct is a complex issue, influenced by numerous factors, both individual and contextual. Individual factors such as gender, age, scholastic performance, education/major, and personality variables (e.g., Cizek 1999; Jackson et al. 2002; Nathanson et al. 2006) have generated consistent results. Generally, women engage in less academic misconduct than men (e.g., Cizek 1999; Jurdi et al. 2012; Williams et al. 2010), older students and graduate students engage in less misconduct than younger or undergraduate students (e.g., Cochoran et al. 1999; Kisamore et al. 2007; Kidwell and Kent 2008), and higher-achieving students engage in less academic misconduct than their lower-performing peers (e.g., Brown and Choong 2005; Daly and Horgan 2007; Lawson 2004). Interestingly, students in business seem to be especially likely to engage in academic misconduct along with engineers (e.g., Callahan et al. 2008; Caruana et al. 2000; Ginnyld and Gotschalk 2008).

Contextual factors that increase the likelihood of student academic misconduct include peer norms where reporting cases of academic misconduct is frowned upon, where cheating is frequently observed, and cheating is encouraged by peers (e.g., Christiansen-Hughes and McCabe 2006; Elzubier and Rizk 2003; Ginnyld and Gotschalk 2008; Noah and Eckstein 2001). In contrast, having honor codes (e.g., Bugeja 2001; McCabe and Trevino 2002), providing a context where students believe there is a high likelihood of getting caught, clear sanctions (e.g., Cizek 1999; Robinson et al. 2004), and fear of punishment (Cizek 1999; Robinson et al. 2004; Tibbetts 1999) are contextual factors associated with greater academic integrity and less misconduct.

Despite these individual and contextual factors, perhaps the most salient issue related to the prevalence of academic misconduct is knowledge base. Although faculty members commonly assume that students understand what constitutes

academic misconduct, numerous studies suggest that students lack this basic knowledge (e.g., Baetz et al. 2011; Devlin and Gray 2007; Roig 1997). Often, students have difficulty defining what constitutes academic misconduct. For example, many students do not know the difference between paraphrasing, summarizing, and plagiarizing (e.g., Roig 1997; Schrimsher et al. 2011; Soto et al. 2004). Some students are unaware of how academic misconduct is detected, what penalties, if any are to be levied, or how their institution deals with misconduct (Baetz et al. 2011; Jackson 2006). It is not surprising that misconduct is on the rise if students do not have the critical information they need to make informed decisions about their behavior.

8.2 Instructional Designs for Fostering Academic Integrity

The existing literature provides an excellent foundation for understanding how to design effective instructional programs to enhance academic integrity on college and university campuses. Although individual and contextual differences need to be considered when developing instructional interventions, the extant literature identifies limited knowledge base and personal commitment as the most critical features that need to be addressed. In order to ensure these latter two components are well developed in any instructional intervention, developers need to ensure that the instruction includes clear, well-articulated definitions of what constitutes academic misconduct, how it is detected, what happens once academic misconduct is reported, and perhaps most importantly why academic integrity needs to be valued (Feldman et al. 2001; Harris 2001; Landau et al. 2002; Zivcakova et al. 2012b). This latter goal is the most challenging, as it requires that students become active partners in understanding and valuing academic integrity. The following section reviews programs that show promise for meeting these goals.

Several instructional interventions have been created and tested in an effort to enhance student knowledge, skill, and engagement with academic integrity. Existing instructional interventions can be organized as a function of two features: their program focus and instructional delivery method. With respect to *program focus*, interventions range from highly specific programs that target a single form of academic misconduct, to more comprehensive interventions that address multiple issues ranging from definitions to moral problem solving about misconduct issues. With respect to *instructional delivery method,* interventions have included traditional "transmission models" where an authoritative instructor provides information to an attentive listener typically through a lecture or through reading materials, to interactive learning contexts where students construct knowledge in concert with faculty or with peers. Those programs that provide more extensive learning opportunities and/or that engage students in the learning process typically yield greater learning gains.

8.2.1 Utilizing Direct/Explicit Instruction in Academic Integrity

Every successful intervention has incorporated instructional techniques that directly address students' limited knowledge about academic integrity. In most cases, this aspect of each intervention is handled using "direct" or "explicit" instruction. Direct/explicit instruction involves providing information in a clear, systematic, and well-organized manner. In addition, direct/explicit instruction also requires that material be presented in small increments with clear step-by-step explanations and examples at each step (e.g., Gaskins 1998; Pressley and McCormick 1995; Pressley et al. 1998; Rosenshine 1987). This instructional approach has been identified as effective in a vast array of domain areas and at all levels of education (e.g., Hattie 2008; Slavin et al. 2009; Snel et al. 2012; Watkins 1988). Outcomes following this instructional approach typically support this format as an efficient delivery system for communicating critical information, especially where learners' domain knowledge is low (e.g., Adams 1990; Ehri et al. 2001; Pressley et al. 1998; Stahl and Miller 1989), and when learners may be anxious about the domain being studied (Wood et al. 2002).

Recently, Soto et al. (2004) extended our understanding of direct/explicit instruction by testing it in an academic integrity context. Their intervention was designed to educate students about how to paraphrase rather than plagiarize. Students in their study either simply received a definition about plagiarism or they were provided this definition along with examples. The examples used to reinforce the definition information included paragraphs that had been marked using plagiarism detection software (i.e., TurnItIn.com), and presentation of successful versus unsuccessful samples of paraphrasing. Students were also given an opportunity to discuss the successful and unsuccessful paraphrasing examples. Simply providing information through the definition was not sufficient to enhance learning. Indeed, only when students had access to the basic definition plus examples that systematically identified where plagiarism occurred did students show learning gains. Students benefitted from direct/explicit instruction over simply provision of information.

Landau et al. (2002) also designed an intervention targeting plagiarism. Students in this study were assigned to one of four instructional conditions. A control group of students who received no intervention was compared to one group of students who received feedback for their own attempts to paraphrase, another group of students who studied examples of plagiarized work, and a final group of students who received the examples and who received feedback on their own attempts to paraphrase. As would be expected, participants who received the feedback only, the examples only, or the examples plus feedback outperformed those with no intervention exposure. In addition, consistent with previous research using direct/explicit instruction, students in both conditions that received examples (examples only and examples plus feedback) outperformed participants in the feedback only and control conditions when asked to paraphrase material. The combination of

providing information that clearly identifies key to-be-learned information along with examples to reinforce this knowledge yielded the greatest learning gains. In this particular case, having examples of paraphrasing attempts that were poor (in actuality, examples of plagiarism) and correct (true paraphrasing) allowed the students to see firsthand the features that distinguish paraphrasing from plagiarism.

Together, these two instructional interventions (Soto et al. 2004; Landau et al. 2002) support the need to include direct/explicit instructional design features (clarity in description, use of concrete, clear examples) as key components of any program of instruction. However, these two programs did not address the bigger issue of engaging students in a way that would allow them to internalize the importance of academic integrity. This issue has been addressed by more comprehensive programs.

8.2.2 Examining Comprehensive and Interactive Academic Integrity Interventions

Building on these previous instructional programs, more recent research has examined comprehensive interventions that extend beyond knowledge building in one target area and instead focus on approaches to academic integrity that involve open, interactive, dialogic conversations and discussions that promote communication among students, as well as between instructors and students about specific and more global issues related to academic integrity. This has been acknowledged as the next necessary step by numerous authors (e.g., Bean and Bernardi 2005; Bertram Gallant and Drinan 2008; Boehm et al. 2009; Dichtl 2003; Kirkland 2010; Sims 2004). The key to constructing an effective instructional intervention that promotes constructive learning is to engage students in conversations about academic integrity. Such a constructive approach would ensure students' active participation in the learning process rather than perceiving students as passive recipients of knowledge (Abrami 2001; Perry et al. 2002; Staub and Stern 2002; Von Glaserfeld 1993). Active student participation in learning is a critical component of higher education. Students at this level are considered self-regulated learners, who possess the metacognitive skills that allow them to solve problems, analyze, and meaningfully interpret new information in ways that extend and build upon previous knowledge (e.g., Perry et al. 2002; Baetz et al. 2011).

For example, Elander et al. (2010) tested the efficacy of a writing intervention aimed at improving student "authorial identity," that is, teaching students to identify with their own role as authors. The intervention consisted of multiple tutorials conducted by staff members who taught students how to paraphrase and cite properly, as well as how to understand themselves as authors in the writing process. Students completed a pretest and a post-test survey regarding their beliefs about writing, plagiarism, and (in the post-test) the impact of the intervention. The intervention significantly improved students' confidence in their writing abilities,

understanding of authorship, and knowledge of plagiarism avoidance (Elander et al. 2010). In addition to the specific gains relative to the program, the instructional design allowed students to acquire more general skills that could transfer across academic domains. In addition, having students adopt the perspective of the author is a particularly salient method for conveying the importance of protecting authors' intellectual property rights and allowing students to internalize the importance of academic integrity.

Although interventions of this type are commendable, they may be less practical and economical on a broader scale. While the issue of academic integrity is certainly valuable enough to warrant support, often universities and colleges face the reality of economic and human resource costs that inhibit their ability to implement intensive or extensive programming. In response to these challenges, alternative comprehensive instructional interventions have been introduced that address the resource challenges but maintain high instructional integrity. For example, Baetz et al. (2011) examined the impact of having an academic integrity advisor, who was also a faculty member, present a single interactive discussion-based presentation about academic integrity. The 45-minute presentation was given to 15 classes, and the course instructors were encouraged to observe and/or participate in the discussion. This intervention was designed to engage students in dialogic conversations with faculty members. Previous research indicates that open communication with all members of an institution is necessary for creating institutional changes (Bertram Gallant and Drinan 2008); therefore, having faculty and a representative of the administration at each presentation reinforced that the issue was relevant across the levels within the university.

To ensure consistency and comprehensiveness across presentations, a slide presentation that comprised 26 slides was constructed and covered four topic areas: defining academic integrity, how misconduct is detected, consequences of misconduct, and the importance of academic integrity. The presentation started each topic area with one or two information-based slides which provided clear, well-articulated definitions and examples (see Fig. 8.1 for an example of the information-based slide used to introduce consequences of misconduct) and slides that were used to prompt discussion.

The discussion-starter slides presented quotes that had been acquired in earlier interviews of student ambassadors for academic integrity (see Fig. 8.2 for a sample of the discussion initiation slide used to accompany the consequences of academic misconduct slides). Outcomes were measured through surveys administered before and after the presentation.

Students' awareness and knowledge of all four main topics of academic integrity/misconduct (i.e., definition, detection, consequences, and importance) were higher after the presentation than before. In addition, student responses to the discussion topics clearly indicated that students were not only willing to engage in open, frank discussion, but they welcomed the opportunity to share their experiences, and the ability to make suggestions for improvements (Baetz et al. 2011). The combination of slide types balanced direct/explicit instructional design with a more interactive approach to learning. The intentional inclusion of discussion as a

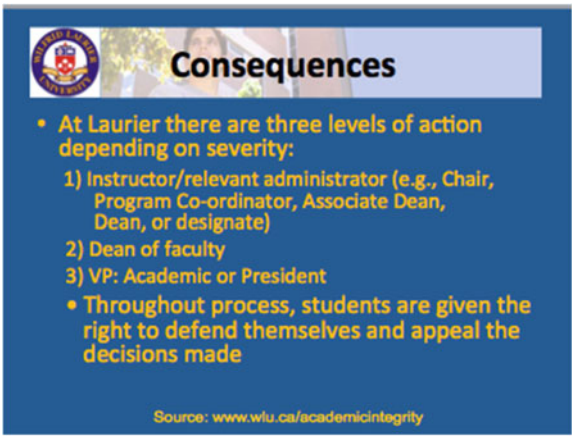

Fig. 8.1 Example of information-based slides about the consequences of academic misconduct

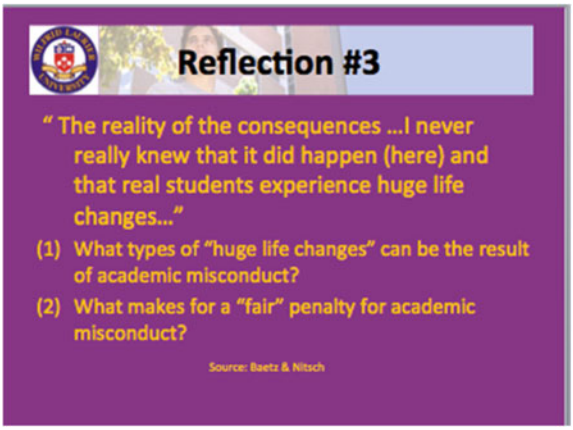

Fig. 8.2 Example of discussion-based slides about the consequences of academic misconduct

key element in the presentation enhanced engagement of students. Inviting students to engage actively in the learning process, to ask questions and to clarify expectations, also enhanced opportunities for students to ratify information presented with their own existing domain knowledge. These benefits are associated with enhanced acquisition and retention of information (Zivcakova et al. 2012a). In addition, having an academic advisor who was a senior faculty member present supported the authority in the answers provided and also conferred a level of commitment from the university regarding the importance of academic integrity.

Follow-up interviews with course instructors who participated in this process (Zivcakova et al. 2012a) also supported the positive learning climate and outcomes from this presentation. In particular, faculty members were surprised at the level of student participation and how "forthright" students' comments were. Students were highly engaged, and faculty responded to their emotional as well as verbal involvement in the topics discussed. This reinforced for faculty the importance that

students place on academic integrity. Interestingly, gains in knowledge were also evident among the faculty. Some faculty were surprised to discover that they too learned new things from the presentations. This is important as instruction and expectations may vary across faculty depending on their knowledge base and inconsistencies may cause confusion among students. The most striking feature, however, appeared to be the insights they gained about their students' views and experiences related to academic integrity. Several faculty members indicated that as a result of this experience, they would adopt the discussion-based approach to teaching academic integrity in their future classrooms (Zivcakova et al. 2012a).

The results obtained in both of the above slide presentation studies (Baetz et al. 2011; Zivcakova et al. 2012a) are consistent with the previous literature, which suggests that students are both willing and eager to discuss academic integrity in their classrooms (Dichtl 2003), and suggest that the discussion-based model is an effective approach in this domain. However, although the single-presentation approach was more economical than other longer more extensive programs, and the content was broad and comprehensive in scope, the human resources for delivery of the presentation on a wide scale would be prohibitive at most universities and colleges. One solution to this particular problem is to examine peer-based instructional models.

8.2.3 Peer-Guided Discussion-Based Instructional Approaches for Academic Integrity

Examination of peer-based learning models indicates that peers can effectively enhance learning when high-ability peers act as instructors and group facilitators for lower-ability students (e.g., Topping 2005; Campbell and Campbell 1997; King 1995; Goldschmid and Goldschmid 1976). The efficacy of the peer-based instruction has been demonstrated at many educational levels, ranging from elementary (e.g., Slavin 1990; Webb and Farivar 1999) to college (Fraser et al. 1977) and university contexts (e.g., Brown and McIlroy 2011; Postholm 2008; Payne et al. 2006). Moreover, peer-guided instruction has been found to be effective across a variety of domains, including physical sciences (e.g., Topping et al. 2011; Balfakih 2003; Chang and Lederman 1994), mathematics (e.g., Sherman and Thomas 1986), nursing (e.g., Chapman 2005), health care (Brown and McIlroy 2011), and business (e.g., Nordberg 2008). The effectiveness of the peer-learning instruction is twofold as both peer learners and peer tutors demonstrate learning gains when this approach is used (Topping 2005; Goldschmid and Goldschmid 1976). In addition to cognitive learning gains, gains in social outcomes have also been reported with the peer-based approach (e.g., Wecker and Fischer 2011; Topping 2005; Allen et al. 1999; Goldschmid and Goldschmid 1976). Given the high potential of this instructional format, it is not surprising that researchers have tested the peer-based approach in the domain of academic integrity.

Ellery (2008) conducted a peer-based writing instruction intervention directed specifically at reducing plagiarism. Older postgraduate students conducted a series of tutorials for younger students regarding the following literacy and media literacy skills: what constitutes plagiarism, reading for understanding, accessing online information, note-taking skills, and numerous essay-writing skills including adhering to proper essay structure, academic writing style, referencing formats, as well as essay assessment criteria. The tutorials also utilized multiple scientific papers as examples of scientific writing. After the students completed the tutorials, they wrote a term essay that was marked and checked for plagiarism. Overall, about a quarter of the students (26 %) still engaged in plagiarism after the training. The researcher conducted interviews with these students, provided further guidance, and encouraged them to resubmit. Only 6 papers (19 % of the overall sample) were still found to contain plagiarized content. While these results are encouraging, the intervention was extensive and only targeted plagiarism, rather than misconduct at large.

Recently, Zivcakova and colleagues (2012b) adapted the interactive presentation program devised by Baetz et al. (2011) to accommodate a peer-based instructional model. Specifically, senior students (Residence Dons) provided the presentations to the junior students they supervised. Dons selected the slides from the original full presentation that they believed would be most useful to students. They had the opportunity to post slides on a community bulletin board prior to their presentations, and several days later, each Don delivered the presentation.

Responses to the presentations were collected from both Dons and students. Asking Dons to select the slides resulted in diversity across presentations in the content presented, discussions engaged, and presentation time. However, most Dons selected predominantly information-based slides. This resulted in self-reported learning gains among the junior students for each of the 4 topics (definition, detection, consequences, and importance of academic integrity). Despite having a greater proportion of information-based slides relative to discussion-based slides, the Dons indicated that the presentations were helpful in encouraging open and honest discussion, increasing awareness of academic integrity, and encouraging further thinking about the topic. It is interesting that the selection bias in slides chosen by Dons did not appear to inhibit active participation. Instead, having peer presenters appeared to encourage active participation and discussion.

Recipients of the presentations were mixed in their evaluations with some finding the presentations interesting, while others did not. Although some students thought the presentations were boring and redundant, however, more students reported that the presentations were helpful and informative, and over half of the students felt that the presentation should be offered again in the following year. Student interest in the presentation predicted learning gains. Thus, the perceived quality of the presentation impacted the knowledge gained by the junior students such that students who found the presentations more interesting learned more. In addition, junior students who reported that academic integrity was important to them personally perceived the presentations to be more useful.

Overall, the results suggested that peer-based instruction benefited most students both in terms of knowledge gained, and in terms of being engaged in the topic of academic integrity. Using this peer-based instructional format was more effective at reaching a wider audience and was more economical than the faculty-based instructional approach. However, there were also limitations. Specifically, the Dons did not feel comfortable in their own knowledge about academic integrity nor in their authority to provide specific answers on the topic. Although training was provided to all Dons, clearly, more training was required. Perhaps an available, authoritative contact source would be useful when peer-based discussions involve highly sensitive or specific questions that exceed the peer presenters' knowledge base. This was a salient issue for the Dons who felt concern that they may harm junior students if they presented skewed, incorrect, or incomplete information regarding topics that could have implications for the junior students (e.g., regarding academic consequences or procedures). Perhaps in reflection of this concern, Dons tended to select slides for content with which they were most comfortable. Although having variability across presentations was not ideal when the goal involved ensuring that students were adequately informed about an important topic like academic integrity, having Dons select their slides was important within the context of this study for highlighting the importance of adequate training for peer instructors. Ensuring adequate training of peer instructors may require input from the peer instructors themselves in order to ensure an appropriate foundation for effective peer-based instruction is met.

The variability in the presentations of the Zivcakova et al. (2012b) study was addressed in a recent follow-up study. In this study, Dons presented a common presentation. They received more extensive instruction and were equipped with fact sheets as a reference to support them in their ability to answer questions. Dons were also provided with online resources that they could access before and during their presentation. Preliminary data from this study suggest that Dons' knowledge and confidence in their knowledge increased as a function of the additional supports and training.

Together, these studies suggest that active instruction with peer-based instructors may provide an ideal solution for teaching students about academic integrity, but also for developing a culture of academic integrity (McCabe and Trevino 1993).

8.3 Conclusion

Academic integrity is a complex issue. Instructional interventions that address this domain need to be carefully and systematically assessed. Successful programs must include sufficient background, definitions and explanations, succinct clear instruction, examples, feedback, and opportunities for active learning to maximize learning. In addition, students need to be engaged in a dialogue about academic integrity, and this dialogue needs to be supported at all levels from the classroom

to administration (Bertram Gallant and Drinan 2008). Encouraging dialogue requires instructional designs that invite students' participation, discussion, and reflection, for example, through faculty-delivered or peer-to-peer-delivered interactive interventions. The research on direct, dialogic, and peer-learning approaches in academic integrity clearly supports these instructional design features as an effective mechanism for teaching in higher education contexts.

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Chapter 9
Peer Mentoring and Tutoring in Higher Education

Janet W. Colvin

Abstract In today's world, colleges and universities are implementing many different types of instruction to not only save money but to also increase student success and retention. Many of these implementations involve peer situations including peer tutoring and peer mentoring. While these peer situations have found much success, there have also been problems. In order to increase the chances for success students, mentors, and tutors, as well as instructors, all need to understand the definition of the role being utilized, the benefits and risks for all involved, and the implications of power and resistance. This chapter outlines each of those and also gives suggestions for implementing peer mentoring and tutoring programs.

Teaching takes place in many forms, places, and situations. In higher education, the idea of traditional or formal teaching is that it takes place in classrooms with professors, highly trained in their fields, passing on information to note-taking students. This is primarily a passive model.

Over the past few decades, the single-source information giving and passive receiving model has been challenged. Contemporary thought holds that teaching takes places whenever someone guides the studies of someone else, imparts knowledge or instructs by knowledge, example, or experience (see Lopez 1999). Sometimes, this is formal, as in classroom situations, and sometimes, it is informal such as when one student, having already taken a particular class, explains how to get a good grade from the professor to a student newly enrolled in that same class. Though instructors may wish it to be otherwise, this sort of peer interaction may have an even greater impact on students than what happens in the classroom.

Others embrace the practice whole-heartedly. Miller and MacGilchrist (1996), for example, adhere to the notion that learning should be a community activity and that by giving students responsibility for helping other students, they can gain a sense of purpose and direction in their own lives. Not only does learning increase, but peers exert influence through socialization processes. Scott (1990) suggests

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that this occurs because shared meaning is most easily attained between people who are similar in culture, language, education, and values. In this way, peers become powerful role models and agents of change in the classroom (Simon and Cutts 2012; Wawrzynski et al. 2011). Milburn (1996) echoes these views when he draws attention to the number of studies that have shown that young people usually refer to their peers for information and advice on a variety of topics. In fact, at times students feel that the skills of their professors seem hopelessly beyond them but those of their more advanced peers are within their reach (Beck et al. 1978). They may also respond without fear of ridicule or reprisal and may be less reticent about asking "stupid" questions of a peer than they would of a teacher (Falchikov 2001). Goodlad (1998) suggests that "by involving learners in responsibility for their own, and more importantly, *other people's* education, it increases social interaction" (p. 16) and transforms learning from a private to a social activity. This transformation takes students beyond "compartmentalized" schooling to a place of engaged and empowered pedagogy.

9.1 Peer Situations

Broadly speaking, a peer is someone of the same social standing. "This notion of shared social status, whether relating to age, ethnicity, gender, cultural, or subcultural membership, has been documented as integral to the application of any peer education project" (Parkin and McKegany 2000, p. 295).

One of the earliest examples of peer approaches was identified by Miller and MacGilchrist (1996). In their study, they describe pupils assisting teachers with lessons in nineteenth-century England. A burgeoning interest occurred following the work of the Russian psychologist, Vygotsky, in the 1930s. He saw interaction as the key by which learning proceeds. He posited that children learn new patterns of thought and understanding by engaging in dialogue with others and "internalizing the very communicative procedures that the child experiences when interacting with a peer" (Damon 1984, p. 334). This concept was pursued further by educationists such as Bruner in the 1970s onwards and now underpins much of the current thinking about education. Most recently, peer education approaches have been used in relation to sexual health education, HIV and AIDS, health and safety at work, teenage motherhood, gambling, reading skills, violence avoidance, and the empowerment of senior citizens just to name a few (for a more extensive review of this literature, see Parkin and McKegany 2000).

Peer teachers may be more advanced than their students, but usually not so far advanced as to no longer be considered peers. They are not teachers and generally do not have professional qualifications. Neither do they usually have control over curriculum or materials being used (Whitman 1988). The term peer approach subsumes such terms as peer educator, peer trainer, peer facilitator, peer counselor, peer tutor, peer leader, peer helper, peer tutor, peer advisor, and peer assessor. While each of these may have slightly different dimensions, each involves

education of a student by a peer in some way or another in an attempt to motivate each other and ultimate enculturate (leaving one community of peers and joining another) students into a particular community.

Peer support or instruction may occur informally between friends or classmates or formally (planned). Formal peer situations are used primarily for three reasons. The first reason is to enhance learning. Crisp (2010), Daughtry et al. (2009), Shrestha et al. (2009), and Sorrentino (2007) are just a few of the educationists who see peer teaching as increasing learning through interaction. This learning is seen as occurring on the parts of both the lower- and higher-level student as they engage in learning as a community activity. The lower-level students learn from the modeling that takes place (Bandura 1977) and the higher-level students learn from the opportunity to be involved in the learning community and strengthen successful collegiate behaviors as they model such behaviors (Astin 1984). This modeling is seen to be successful because of the scaffolding of the learning process that takes place (Masters and Yelland 2002). Scaffolding has been defined as moving learners from their current level or zone of proximal development to a higher level of development. Students learning from a more accomplished peer is seen as being a way to provide a structured way of involving students on both academic and social level.

A second reason for implementing programs such as peer tutoring in actual classroom contexts is economic savings (Goodlad and Hirst 1989; Miller and MacGilchrist 1996; Miller 2001; Parkin and McKegany 2000). When departmental faculties are asked to teach more and more students with no increase in funding for additional instructors, peers can provide support in overenrolled classes.

Finally, a third reason for utilizing formal peer situations, especially in higher education, is "because it satisfies needs that critical theorists and other like-minded educators see traditional schooling as leaving unfilled. It assumes that what students should learn includes effective interdependence and social maturity, and it postulates that social maturity and intellectual maturity are inseparable" (Colvin 2007a, p. 13). As students gain maturity, they also are seen to gain power over themselves and their education (Darwin and Palmer 2009; Goodlad and Hirst 1989). Carpenter et al. (1999) suggest that by increasing social interaction and giving learners responsibility for their own and other people's education that students move beyond "compartmentalized" schooling to a place of engaged and empowered pedagogy.

9.2 Peer Tutoring and Peer Mentoring

Two of the most common peer situations that involve students helping other students in a cross-level peer tutoring situations are peer tutoring and peer mentoring.

9.2.1 Peer Tutoring

Supplemental instruction or what is more commonly called simply peer tutoring typically focuses on a more advanced student helping lower-level students with course content. The scope and function of peer tutoring programs is wide, focusing on benefits that include elimination of the typical hierarchical structure (Bonwell and Eison 1991; Lopez 1999), increased motivation and learning for students and tutors (Miller and MacGilchrist 1996; Simon and Cutts 2012; Wawrzynski et al. 2011), and empowerment for tutors (Goodlad and Hirst 1989; Parkin and McKegany 2000).

> Peer tutoring has been shown to increase self-determination and individual empowerment by taking learning out of the context of a controlled, teacher-directed environment and putting it in the hands of students, who become active learners, interdependent on each other but independent of the teacher … peer tutoring is a flexible, robust instructional tool that produces academic gains and desirable, socially valid outcomes (Carpenter et al. 1999, p. 5).

A number of universities have implemented peer tutoring in programs such as LEAP, a nationally recognized learning community program for first-year students that involves peer tutors, faculty, and students in social and academic settings (e.g., University of Utah, 2012). This program seeks to lay a foundation in which incoming students receive advice and help from more experienced peers in a learning community.

The majority of available research and literature on peer tutoring has focused on preparation, theoretical frameworks, and assessment (see Falchikov 2001; Topping 1996, for extensive reviews), and most extant research is limited to a focus on younger children (Coolahan et al. 2000; Ladd and Kochenderfer 1996). While there are some studies that focus on higher education (e.g., Anderson and Colvin 2003; Colvin 2007a; Kochenour et al. 1996; Newcomb and Wilson 1966; Saunders 1992), the relationships and interactions that occur when peer tutors are available in classrooms are under researched. This virtual absence is surprising given that providing a social interactional context for learning is often listed as a major goal of peer tutoring (Topping 1996, 2005; Topping and Ehly 1998).

9.2.2 Peer Mentoring

Most peer programs focus more on content, but other programs aim to reduce dropout rates and target high-risk courses rather than high-risk students. Peers in such programs are termed peer mentors. In this model, peers are trained to model, advise, and facilitate rather than directly address curriculum content (Kochenour et al. 1996).

Crisp and Cruz (2009) identify three ways that researchers agree about mentoring: (a) mentoring is focused on the growth and accomplishment of the

individual being mentored and provides multiple forms of assistance, (b) mentoring includes broad levels of support that includes degree selection and professional/career development, and (c) mentoring relationships are reciprocated and personal.

Karcher et al. (2006) discuss several forms of mentoring that are popular and useful in education. These programs include field-based mentoring where mentors and mentees have the freedom to select the venue and time when mentoring takes place, site-based mentoring which takes place in a more structured environment, such as a workplace or school, and cross-age mentoring involving a veteran student working with a student newer to the system. Hughes and Fahy (2009) note that many of the peer mentoring programs now in existence were created to help students have a smooth transition into college.

Findings show that mentoring has a positive impact on several levels for students. This includes degree and career pursuits, increased self-esteem, confidence building, academic achievement, college adjustment, and successfully transferring from one school to the next (Crisp 2010; Daughtry et al. 2009; Shrestha et al. 2009; Sorrentino 2007). Thompson et al. (2010) mention that mentors also provide consultation, counseling, socio-emotional support, goal setting, and problem solving.

Good mentoring or tutoring is not just talent and goodwill, according to Reid (2008). Mentors and tutors are also ambassadors between fellow students and the instructor. Often students may be too timid to approach the instructor with a question or concern. As a consequence, the instructor may be oblivious to the unexpressed concerns of the student. Thus, tutors and mentors may serve as a "go-between" or ambassador for students and instructors.

A large number of institutions and programs are moving to using peer mentoring and tutoring programs not just in laboratories (i.e., math and writing laboratories) but actually in classrooms. Few, if any, of these programs really focus on how students, mentors/tutors, and instructors understand and communicate about their respective roles, how they interact together, and the consequences for that interaction (Colvin 2007; Colvin and Ashman 2010). This lack of communication is especially concerning given the number of institutions, in the face of budget crunches, attempting to change traditional instructor to student delivery formats and rely more and more on the use of peer mentors and tutors in the classroom.

As new subject positions—either peer tutors or peer mentors—are added to a classroom, new expectations are added and challenged as well. My research over the past decade has focused on how both peer tutors and peer mentor roles are understood and enacted. The remainder of this chapter will focus on findings from a number of studies I have conducted highlighting how peer tutors or mentors as well as instructors and students come to understand that role, benefits, and risks, as well as power and resistance that occurs as that role is enacted. Finally, suggestions for developing programs for implementing peer mentor/tutoring and future research will be discussed.

9.3 Role Definition

Any time students are moved to new subject positions there are challenges of understanding and initiating those position. Students who just finished a class or have some level of expertise in a subject may suddenly find themselves in a position where they are no longer just another student but are now, in some regards, the instructor. This change in position is often not clear for students, tutors/mentors, or instructors. Callero (1994) found that if roles are not conventionalized, that social action cannot take place. This is often the case when training has been haphazard or even nonexistent as is typical in most programs which decide to add a peer role without a formal process.

In work on peer mentors, Reid (2008) claims the exact nature of expectations and boundaries is a crucial element in supporting peer mentors and the relationship between mentor and mentee. Storrs et al. (2008) additionally suggest that in order for peer relationships to be successful, there must be clarity and consensus of roles. In their study of peer mentors, they note that if mentors as well as mentees do not have a clear sense of their roles and responsibilities, there will be confusion about the meaning of the terms *mentor* and *mentoring* and mentors will find it difficult to have any sort of self-efficacy (Hall et al. 2008).

Not only is the idea of a peer not always clear but though the terms peer tutor and peer mentor are often used interchangeably, those role enactments are quite different. First, I will turn to the role of a peer tutor.

9.3.1 Peer Tutor

In my study of peer tutors (Colvin 2007a) I found that the title of "peer tutor" did not invoke a consistent set of expectations. In this study, tutors took a semester long training course prior to the semester they began tutoring. The following semester, several large lecture classes utilized the peer tutors to help students in these classes with academic materials. Tutors were assigned to specific groups of 10–15 students to facilitate learning of materials. Qualitative analysis of interviews with instructors, students, and mentors helped shed light on how the tutoring role was perceived by all parties. Two main roles were identified—being a role model and functioning as resources for students. Additionally, tutors, students, and instructors all had to participate in crafting the tutor role and its rules of socialization and in the process accept the liminality of the tutor position.

Role Model. Students and instructors expected that tutors would model behaviors that would help students succeed in class. In reality, though the expectation was there, the idea of model student proved difficult for tutors to perform for a number of reasons. First, it was sometimes difficult to move tutors from the position of a regular student to that of peer tutor where they were not just one of the crowd. Second, it was perhaps even more difficult to ask tutors to model

a behavior that they may not have even used as a student. In particular, one tutor indicated "that she really isn't the 'model' student. She came late and sat up in the back behind the chairs. I talked with her about being early and being not only very prepared, but willing to participate. She said she'd try but it really wasn't her (typical role)" (Colvin 2005, p. 161). Ultimately, it seemed that those tutors who were already used to the subject position of "model" or "outstanding" student had less difficulty moving into that role than those who were being asked to not only change subject positions but also typical behaviors.

Resource to Others. Tutors were also expected to be a resource to the other students. Most of the students who were interviewed described tutors as being a resource for them that they could use. In fact, interestingly enough, tutors were seen as being a resource for the students, whereas teaching assistants were seen as resources for the teacher. All but three of the 48 students interviewed said that they would go to a tutor for help first before going to a teaching assistant or the instructor.

Not only did students feel that they were getting help from the tutors, the tutors themselves felt that aiding students was their primary responsibility as can be seen in this quote:

> I enjoy feeling useful and helpful. … It is good to find something you're good at and share it with others. This can definitely be a strong motivator for tutoring people (Colvin 2005, p. 162)

When tutors themselves were asked about their role, they thought that they were there to help and guide the students in the classroom. One tutor said, "I think [a tutor] should be a filter … purify [students] questions so they don't waste [the instructor's] time." Another said "When I think of a tutor I think of someone providing one-on-one interaction or reinforcing knowledge of the learning, clarifying things" (Colvin 2005, p. 215).

Tutors felt that both the instructor and students would not only willingly seek the tutors' help but would be appreciative when that help was provided. However, when tutors began interacting with students, this was not the case. Students varied between wanting the tutors to actually do their work for them: "It's like they wanted me to contribute but I couldn't in the way they wanted me. They wanted me to write their stuff but I'm not going to do that" (Colvin 2005, p. 169) or wondered if they were actually circumventing learning by doing the students work for them: "If you have an assertive peer tutor who thinks they have all the right answers, then all of that learning would be circumvented. One student noted that the peer tutor would just say, 'Come to me for the right answer and I'll spoon feed it'" (p. 169).

In general, however, tutors felt that they fulfilled the expectations of being a resource to others. At times they felt underused, but that they were still able to help students in the classes with which they were working during their internship.

Socialization. Peer tutors enact a role which contains aspects of both student and instructor. However, when tutors are inserted into a classroom, in most cases, students have not anticipated the tutor role and instructors have only a vague idea

about what they hope will happen in the classroom through the use of tutors. Consequently, the way students and instructors view the tutor role develops out of advances from the "taken for granted" student/instructor roles. A large part of how individuals understand the role of tutors, then, comes from prior socialization that defines their own roles in a classroom. Students and instructors bring with them learning orientations and conceptions of learning inherited from their previous educational experiences (Hettich 1997; Marton et al. 1993). These preconditions greatly influence how they define the role they play and establish the expectations they would have for the peer tutor.

Instructors varied between not using the tutors at all (giving them assignments related to course materials), to using them to actually teach the class at times. Not only were students and instructors confused, tutors themselves were confused and felt they were not being used as a resource or if they were even needed: "I ask myself if a tutor is really necessary. If you could ask a friend for help, wouldn't that be easier? Would it be even more convenient? More comfortable?" (Colvin 2007a, p. 173).

Liminality. Liminality, or state of being in between two stable positions as Victor Turner (1986) conceptualizes it, brings with it both freedom and constraints. Status, position, and identity are at play in liminal spaces as well. Some tutors rejected the idea of "model" student and some students rejected the idea of another student having "instructor" (even marginal) status. As one tutor puts it, "I've noticed that most of the students still consider me some type of authority although they're not sure what I do. I don't feel like part of the class, but I don't feel like a tutor either" (Colvin 2005, p. 166). Standing outside a classroom and talking as friends and then walking into a class where one is a tutor immediately changes the things that can and cannot be said and done.

Not only were tutors not friends or regular students, but also they were not teachers. A number of students felt that the tutors should have knowledge equivalent to that of the instructor—they should be teachers. Because they weren't teachers and didn't have that level of knowledge, they were seen as being incompetent.

Ultimately, understanding the role of tutor became a process of continual negotiation throughout the semester as each instructor, working with a specific tutor, assigned to a specific group of students, learned what the role entailed.

9.3.2 Peer Mentor

After researching peer tutor situations, I found myself working with a university program that involves peer mentors. This is a formal program with mentors taking a class on how to mentor and then working with students in sections of a course entitled "Student Success." Wondering how similar or different the understanding of that role was from that of peer tutor, I conducted a project similar to that of the previous peer tutoring one to examine the peer mentor role. In addition to the

broad definitions of what a mentor's role is, findings from my research indicate that while the peer tutor role tends to be focused solely on academic work, the role of peer mentor is more complicated. Five overall roles were identified from mentor, student, and instructor comments: connecting link, peer leader, learning coach, student advocate, and trusted friend (Colvin and Ashman 2010).

Connecting link. When mentors functioned as a connecting link, they helped students feel comfortable with the university campus—everything from knowing where buildings were located to how to find specific offices, attend athletic events, and even find places to eat. Mentors were seen as someone who could help to make connections between students in the classroom and other resources on campus.

Peer leader. In this capacity, mentors were seen as providing leadership to the students in the classroom. They motivated students to study and attend class and provided examples of good study habits and classroom participation.

Learning coach. In this study, the role of learning coach was identified most frequently. Here, mentors were not just seen as providing an example but someone who actually taught students good study skills and strategies, how to study for tests, and how to write papers. Students mentioned that their mentors met with them in study groups outside of class and helped them prepare for class.

Student advocate. A number of students noted that having someone in class who could be a liaison between them and the instructor was the most important role for the mentor. This was especially true when students felt nervous about approaching the instructor but felt comfortable taking that same problem to a mentor.

Trusted friend. This role is perhaps the biggest difference between that of mentor and tutor. Mentors were seen as someone students could share experiences with both inside and outside of the class. Students identified them as friends. Interestingly enough, no instructors viewed mentors as having this role which went beyond the academic setting.

These five role definitions were not shared across students, mentors, and instructors. Rather, they were the five themes that arose from interviews with all involved. So though these are identified, the role is still seen as somewhat ambiguous as one student could see the mentor as a trusted friend and another as a learning coach and so forth.

At times institutions and programs have combined the mentor/tutor role (Colvin and Tobler 2012). At my current university, the developmental math program created a peer mentoring program which put mentors into lower-level math classes. Students who had previously taken math 1050 were hired to go to the classroom and perform the role of tutor in the classroom aiding students in understanding math as well as holding study sessions outside of class. Additionally, they were asked to perform the role of mentor and help students connect to campus, feel supported, and have someone who cared about them. Though they functioned in both roles, they were called mentors not tutors. In combining these roles, there was some role confusion.

When the mentor/tutor role was combined, the majority of students, mentors, and instructors identified the mentor role as being one who teaches and helps

students with class material which is typically the role of a tutor (Colvin and Tobler 2012). When looking at what each interviewee saw about how mentors interacted with the others, mentors saw a relationship between students and instructors and mentors but neither students nor instructors did. Additionally, mentors saw themselves as a liaison between students and instructors but instructors and students did not. What was interesting in the this study was that instructors, mentors, and students all felt that there would be less role confusion if one of the other groups had received more training (never themselves). Overall, how roles interacted was seen differently depending on the role of the interviewee and additional training was seen as necessary for roles other than the one being performed by the interviewee.

9.4 Benefits and Risks

9.4.1 Benefits

Almost every proponent of peer approaches indicates some sort of benefit to both sides of a peer mentor or tutor relationship. Sinclair Goodlad gives one of the more complete list of benefits for such peer roles: "Just preparing … has been proposed to enhance cognitive processing in the [mentor]—by increasing attention to and motivation for the task, and necessitating review of existing knowledge and skills. Consequently, existing knowledge is transformed by reorganization, involving new associations and a new integration" (1998, p. 52). Benefits occur for students, mentors/tutors, and instructors.

Students. Students view having peer roles as being beneficial to them as individuals, in helping with their class work, and connecting them to campus. In our 2011 study on peer mentors, my colleague and I found fifty out of 137 comments focused on benefits for students that involved connecting them to the campus at large (Colvin and Ashman 2010). Others focused on retention benefits. Thomas' (2000) study of student retention supports this as well. He finds that students perform better academically and are more likely to persist in school when, "those students who possess broader, well-connected networks … are able to more easily make connections with others due to the multitude of paths reaching to many parts of the overall network" (pp. 10–11).

The next most often expressed benefit for students having peer mentors pinpointed individuals. Forty-four of the 77 comments centered on having a friend or someone to help them one-on-one.

In the developmental math study combining the mentor/tutor role (Colvin and Tobler 2012), different benefits were identified for having mentors or tutors in a classroom. Instructors and students identified having someone to help students as being the greatest benefit of having a mentor, while mentors identified the biggest benefit as having students be able to be more comfortable in communicating with

their professors and being in class. The one and only benefit identified in this same study for having a peer tutor in the class was that tutors help students. "…for a tutor, I think it's really beneficial because a student generally needs help and they'll go to the tutor and that way they'll help the student succeed" (p. 19).

Instructors. While not a lot of benefits have been identified for instructors having mentors or tutors in their classroom, the main one is that they are able to receive feedback about the class that they might not normally receive from students (Colvin 2007a; Colvin and Ashman 2010; Colvin and Tobler 2012).

Mentors/Tutors. When asked about benefits for being a mentor or tutor, there are three main themes: being able to support students, reapplying concepts in their own lives, and developing connections among themselves. These themes are interesting given that though in several studies mentors received tuition benefits (Colvin and Ashman 2010; Colvin and Tobler 2012), very few mentioned this as a direct benefit.

Being able to support students demonstrated itself in three ways—first being able to generally help others. Mentors said such things as, "[Mentoring] is just a great service opportunity to help others and kind of a selfish reason, I like doing it just to help other people. I like seeing that 'aha' moment" (Colvin 2011, p. 24). Mentors also liked being able to help others be successful in their class(es).

Second, mentors and tutors felt, as Goodlad (1998) suggested, that working with peers allowed them to reapply concepts into their own lives and helped them become even better students themselves.

> … there are principles that are taught in the class and by me mentoring, I am able to continually be refreshed on all those items … it is not uncommon for me to be doing, like teaching a presentation or preparing a presentation that I'm going to be giving to a class and realize that in my own schooling I need to reapply that. I've done it in the past, I know about it, but it reminds me. So in being a peer mentor, I'm teaching the students these things that I've learned that I may not be doing that I need to reapply. That's one of the big benefits I think. (Colvin and Ashman 2010, p. 128)

Finally, developing connections was viewed as a benefit for being a peer mentor or tutor. These connections were with other peers, friendships developed with students, and the ability to interact with others. "I've been a person who is more introverted. I don't like to go up to people. I wait for people to come to me. So, to get that social experience is really helpful to me because I'm more outgoing now and I'm not afraid to talk to other people and initiate conversation" (Colvin and Ashman 2010, p. 128).

One interesting finding, which sheds some light on benefits, is found along gender lines. When responses are examined from instructors, peer mentors, and students along gender lines, women focus on the benefits of having a friend and a support system—relationship-centered responses. Men, on the other hand, indicate the biggest benefits are that they learned more because they had help from an equal or peer—content-centered responses (Ashman and Colvin 2011).

However, while the benefits were mentioned often, both peer mentors and students saw some risks for both in the peer–mentor relationship.

9.4.2 Risks

Instructors, peer mentors, and students all saw some risks or challenges in having a peer relationship. Much of this may stem from the overall low use of mentors/tutors in classrooms and students (as well as instructors) unfamiliarity with the process and relationship. Dunne, in her research using peer mentors to help students to develop transferable life skills, suggests that "one of the problems of introducing new processes of learning is that it tends to be difficult for both those that provide them and for those who should gain from them" (2000, p. 369). Bruffee (1994) also points out some of these problems or challenges when using any sort of collaborative learning. He says,

> Willingness to grant authority, willingness to take on and exercise authority, and a context of friendliness and good grace are the three ingredients essential to successful autonomous collaboration. If any of these three is missing or flags, collaboration fails. These three ingredients are essential also to successful semi-autonomous collaboration, such as classroom collaborative learning (p. 44).

As with benefits, the risks identified fall into categories of risks for students, risks for instructors, and risks for mentors/tutors themselves. Each of these will be examined in turn.

Students. Students saw risks and challenges in working with a peer mentor through two aspects—the role the mentor was fulfilling and the relationship that occurred.

Mentors and instructors both identify students becoming too dependent on mentors as the primary risk of having mentors in the classroom. The following two quotes demonstrate this risk:

> Well there's always a risk that you know a student can get too attached to the mentor and maybe become so dependent on this mentor resource that they're not successful without them. (Colvin and Tobler 2012, p. 18)
> A risk will be just having the help. Well they have the help so they put everything on the mentors and they don't do their part so I think that's a risk. (p. 18)

On the other hand, in numerous studies, students felt that having a mentor or tutor was a risk because the student might be bothered too much (Colvin 2007a, b; Colvin and Ashman 2010).

> One thing … that's a huge risk is depending on that person too much, using them as a crutch and then once you're done with the semester …. I mean it's not like you have to cut off all ties but you have to have grown. Like, you have to be able to do things on your own. They're there to help but they're not there to hold your hand through everything and so that could definitely make you rely on them too much and not be able to do anything for yourself. (Colvin 2011, p. 29)

Students were also concerned about mentors or tutors not fulfilling their role and the ensuing challenge to students: "If the mentor says they're going to be somewhere and they don't [show up]" (Colvin 2011, p. 30). Similarly, others

expressed concern that if a peer mentor wasn't dedicated or didn't befriend the students that the student would suffer (Ashman and Colvin 2011).

Some mentors felt that the relationship between mentor and student could get too personal: "Sometimes I've noticed that students almost pass the barrier. They think that they can, like I've had a lot of them try to invite me over. It's more, it gets too personal" (Colvin and Tobler 2012, p. 18). Others indicate that relationships might not be so much of a risk as a challenge as seen in this quote: "Sometimes it's hard for students to open up" (Colvin 2011, p. 29).

The only real risk seen specifically for students utilizing peer tutors was the issue of the tutor not understanding the material, presenting it in a confusing way, or giving instructions other than what the instructor had intended (Ashman and Colvin 2011; Colvin 2007a, b, 2011; Colvin and Ashman 2010; Colvin and Tobler 2012).

> The only thing is that the peer tutors need to know the subject matter a little bit more strongly if they are tutoring in a given area. So they need to be comfortable in doing that otherwise the students could perhaps come back and say, 'Well the mentors got it wrong. They told me to do this.' (Colvin and Tobler 2012, p. 20)

However, despite the risks and challenges described above, the most prevalent feeling about risks to students is that there are no risks for students.

Instructors. The most common risk identified for instructors utilizing peer tutors or mentors is that it is easier to do everything themselves. "[it] takes time for the instructor to meet with the mentor and develop a relationship—it is easier to just do it themselves" (Colvin 2011, p. 29). Instructors are often also uneasy about the possibility of having students go to mentors instead of to the instructors as evidenced in this comment: "If the [mentor/student] relationship gets too comfortable and students call the mentor and tell them 'I'm not taking the test' and just using the mentor when they should be coming to the instructor" (p. 29). These comments may reflect the predominant culture of higher education in which the teacher is one who has the right to question, command, challenge, and occupy the talking space in a classroom. Having to share that space with a mentor or tutor, in any way, challenges even those who want toward a more collaborative mindset in the classroom precisely because it is the predominant culture.

Overall, most felt benefits outweighed risks: "Uh, I'm sure there's risk I'm not aware of, but I would think the benefits would far outweigh the risks" (Colvin and Tobler 2012, p. 18).

Mentors. Comments about risks or challenges for mentors focus on their personal lives and interactions with students. Mentors and tutors feel that there are sometimes expectations that they cannot meet. One mentor said: "I would say the biggest risk of being a mentor is people who are trying to do too much and people who are trying to be perfect in everything and I think some of the times they can suffer from anxiety" (Colvin 2011, p. 31).

> I think just maintaining balance in your own personal life and being able to draw the line between helping other people and taking on their other problems and issues. You have to send them to the resources and not take on their problems because you probably have your

> own. So just maintaining balance and drawing the line between your problems and their problems is a challenge (p. 28).

Others note they have to make themselves vulnerable and this sometimes leads to rejection by the students and difficulty in ending the formal relationships at the end of the semester (Colvin and Ashman 2010). Interestingly enough, some light can be shed on risks and challenges for mentors through comparison with the amount of time mentors have been participating in various programs. In this particular study of mentors who were involved in a multiple year program where they received training and then mentored in subsequent semesters and even years (Colvin and Ashman 2010), those who were first- and second-year mentors often see the students as being too dependent as the major risk. By the third year, mentors focus mainly on time management as the major risk.

Some peers see risks and challenges in interacting with students. One mentor indicated, "I took my time to devote to [the student], to work with him, and when I'd meet with him the next time he would not have done anything more than what we'd done together" (Colvin 2011, p. 28). Another expressed this challenge,

> Getting a hold of students or some of them thinking that me getting a hold of them and wanting them to succeed in school meant that I wanted to push a relationship with them. I think that there are students who aren't going to help or aren't going to want to help and no matter what you do you are either not going to help them because they already know what's going on and they don't really need it or they're going to avoid you and don't really want your help and you're not going to do a whole lot after that (p. 28).

One mentor even went so far as to say that there may even be a physical risk for mentors: "if they got upset with [the mentor] and sought revenge, that could be dangerous" (p. 28).

Ultimately, challenges and risks tend to focus around the task itself—whether students are getting what they need (from either the student or the mentor/tutor or instructor role), or the relationship. Relationship issues center around personal and academic boundaries.

Some of the challenges, more specifically from the mentor/tutor perspective, may actually be those of power and resistance.

9.5 Power and Resistance

When students enter an institution of higher learning, they carry with them ideas about what is going to happen while they are participants in the learning process, how that process is going to occur, and what their purpose is in even continuing their education. These ideas and preconceptions come from sources such as former teachers, families, friends, things they've read, and the media. Once they begin to become socialized into the role of student at a particular institution, however, they adjust those ideas and shape them to fit what becomes their reality. They learn the

"ropes," how to function in their role, and begin to understand the subject position that they are enacting through discourse as well as material practices.

Along with learning how to do things, they also learn how *not* to do things. They learn what things are acceptable to resist, when and how to resist, and strategies for performing that resistance. Karp indicates that "power is the ability to get all you want from the environment, given what's available. It's a means to an end, rather than an end in itself, and is solely a function of the individual. Resistance is the ability to avoid what is *not* wanted from the environment" (Karp 1984, p. 69). Students, from the moment they begin identifying themselves as a student, in a particular institution, at a particular place and time, begin to learn how to get what they want, and how to avoid what they don't want as well.

9.5.1 Power

An important aspect of this discussion of power is the difference between power and control. Power is a joint performance that begins in the reciprocity of a relationship. What it is possible for one person to do to another, under what rights and obligation, is given by the version of events currently taken as "knowledge". Therefore, the power to act in particular ways, to claim resources, to control or be controlled depends upon the "knowledges" currently prevailing in a society. We can exercise power by drawing upon discourses which allow our actions to be represented in an acceptable light. For example, peer tutors and mentors can and cannot say and do certain things based on expectations of the instructor and students.

In my study of peer tutors (Colvin 2007a), issues of power were not blatant, but, rather, were couched in terms of mentors feeling powerful because they were helping students to succeed not because they felt the role itself was imbued with inherent power. Several students voiced the concern that mentors could abuse the relationship or not fulfill their role. Again, this was a more subtle form of issuing power—recognition that the mentors have the ability to do either of these things rather than an outright statement of the mentor having power.

Many times students do not grant power to a peer unless some level of credibility has been granted—they trust that the mentor or tutor will help them appropriately whether in interaction or coursework.

> Despite the fact that tutors arrived in classrooms with the blessing of the instructional staff and with a formal role, many students did not automatically assign power to those tutors. They gained positional power as they demonstrated the ability to help the students in ways that the students wanted to be helped. (Colvin 2007a, p. 177)

Tutors were nominally granted power but gained no privilege until a relationship was formed.

9.5.2 Resistance

Resistance, as opposed to power, is "a process through which meanings are prevented from becoming fully fixed; meanings remain open, partial, and contingent" (Murphy 1998, p. 504). Resistance does not seek for closure but rather remains open. While in past research, resistance has often been seen as synonymous with revolutionary tactics, Fleming and Sewell suggest that resistance operates in many other ways. Saying instead, "rather than looking for patently grandiose and global strategies of insurrection we may instead find it in the commonplace cracks and crevices of intersubjective relations and other quiet subterranean realms of organizational life" (Fleming and Sewell 2002, p. 861).

Although some resistance may be overt, more often people (and especially students) resist individually, in the cracks (Fleming and Sewell 2002) and covertly (Ferguson 1984). Covert resistance may occur through hidden discourse and small resistances. Students are not passive recipients of power or culture—they have the power to accept or reject classroom practices, even if this occurs in micropractices that are largely hidden to the instructor or others in power. Hidden discourse also functions as a way of venting, of letting off steam which enables individuals to continue functioning in a system (Deetz 1998). Hidden discourse allows opportunities for students to have voice—to identify, complain, and ridicule public policy and organizational practices even as they appear to consent. As de Certeau (1984) suggests, this type of resistance allows individuals to sustain themselves without confronting the powerful in a direct manner which might jeopardize their standing in an organization. It allows students to construct alternative meanings in both the private realm and possibly even in the public realm as "the capacity to change creates the ability to both enact and resist the (re)production of dominant (relatively fixed) discursive patterns" (Murphy 1998, p. 503).

Certain tasks and social arrangements make resistance a prudent strategy for many students. Students learn that there are more opportune moments and situations to challenge teachers and tasks than others. In this view, the formal and informal organization of classroom settings do more to make student resistance a practical strategy of action than a student's background of gender, race, or class. Students are not passive recipients of power or culture—they have the power to accept or reject classroom practices, even if this occurs in micropractices that are largely hidden to the instructor or others in power.

In my study of peer tutoring situations (Colvin 2007a), I found that administrators could not automatically assume that using tutors was without resistance from any or all of the parties involved: teachers, tutors, and students.

> It is apparent that the use of peer tutors is not something that can be grafted onto a standard classroom configuration with automatic success—the system must be designed specifically with peer tutors in mind. It is a whole system of training and support concerning the socialization of students, teachers, and instructors in the interaction. (p. 178)

While this study demonstrates the importance of the relationships that are formed as tutors, students, and instructors interact, I also found that findings were

based specifically on peer tutors and change if the relationship changes. For example, peer tutors help students with specific class or topic material and are typically engaged in a more formal relationship, while peer mentors have a more informal relationship with students helping them with academics but also socialization. Changing the relationship changes the way resistance occurs and even what counts as resistance.

The frequent conflation of the tutor/mentor roles, while providing multiple strategies for engaging students, also presents certain problems. I have found in multiple studies (Colvin 2007b, 2011; Colvin and Ashman 2010) that students and tutors or mentors are often confused about what exact role is being played out. This confusion often leads to resistance to help and sometimes inadequate training for the specific role. This was especially true when the two roles were purposely combined. Though program developers intended for both roles to function in the developmental math study (Colvin and Tobler 2012), there was confusion. This confusion was articulated in the way students, mentors, and instructors answered interview questions about how the roles interacted and in responses to the question about what needed to change or could be improved. Training was given to the mentors in the role of mentoring but not that of tutoring as assumptions were made about the ability of the mentor to tutor based on their GPA and previous experience in a math 1050 course. Even with a high grade, they sometimes didn't know how to teach the concepts well. When mentors were not good at tutoring, students made comments such as this: "I think there's some mentors in there that need to be evaluated more closely by instructors and screened" (Colvin and Tobler 2012, p. 21). Students resisted going to mentors for tutoring help when they felt that the mentors were not good at tutoring.

Instructors, mentors, and students all indicated that there was a need for more training in the use of mentors (and by default tutors); however, everyone indicated that it was others who needed training not themselves (Colvin and Tobler 2012). Perhaps this is not so surprising as it was suggested that all three roles need more training. This supports my findings from 2007 that tutor and mentor roles are not automatically understood but need to be talked about with instructors, mentors, and students, and the specifics of the role must be articulated and agreed upon by all as well.

Peer mentors and tutors cannot automatically expect peer interactions in classrooms to be met with open arms by everyone involved; instead, students wait to assign positional power to tutors until mentors/tutors help students in ways the students want to be helped. If this doesn't happen, students disregard mentors/tutors.

Overall, there are a number of types of resistance that can occur. Instructors perform some resistance when they express concern that the relationship with mentors takes too much of their time. Students also express resistance when they indicate that sometimes mentors bug them too much when they don't need help. However, the majority of concern about resistance comes from mentors as they talk about trying to fulfill their role. The following is a summary of comments that indicate resistance:

- Students not doing assignments
- Instructor won't let the mentor do their job
- Students don't want to open up to the mentor
- Relationship clashes
- Getting a hold of students
- Students don't want help
- Being out on their own in class (too little instructor support) (Colvin 2005, 2007a, b, 2011; Colvin and Ashman 2010; Colvin and Tobler 2012)

What is surprising is that while students might have viewed mentors as having the ability to fill or not fulfill their roles and responsibilities, these resistance comments indicate that in many cases, students hold more power than mentors. Students have the power to accept or reject the help that the mentors are trying to offer.

9.6 Development of Training Programs

In order to provide the most benefit and promote student success, preparation, and retention, any institution or program utilizing peer situations needs to recognize the importance of communication. One of the most important elements of any peer situation is the relationship that comes from the interaction between peer mentors or tutors, students, and instructors. Communication plays a vital role in creating and sustaining relationships, understanding not only the function but the impact of peer roles on all involved. Communication should be a main focus of implementing any such program and not a side note considered only as an afterthought.

More clarification for all parties could help establish the role more clearly and alleviate confusion. This is especially true if mentor programs focus on particular roles rather than all of the five my colleague and I identify in our 2010 study (connecting link, peer leader, learning coach, student advocate, and trusted friend) (Colvin and Ashman). Clarification of instructor and student roles, particularly in a first-year experience class, would also be helpful.

Programs interested in instituting training programs can help increase the chances of success by considering the following four elements: roles, impression management, power and resistance, and benefits and risks.

9.6.1 Roles

In the case of tutors, it would be helpful to assure that tutors and instructors both interact and are on the same page about the tutor role before they begin the semester. After the semester starts, assumptions cannot be made that students understand the tutor role either, these must be made explicit. In numerous studies,

I have found that instructors don't always agree on what their role and that of the peer will be. In some cases, instructors have utilized the tutor by having them teach classes; in others, they haven't used them at all. Tutors cannot function well unless they are given information by and are continually supported by the instructor. In my 2005 study, I found that the instructor who had the most success spent considerable time with his tutor going over assignments, lesson plans, and exams making sure the tutor understood requirements and deadlines and could help the students.

For mentors, it is helpful to outline for instructors, mentors, and students the primary roles of a mentor. Again, the roles I have identified are connecting link, peer leader, learning coach, student advocate, and trusted friend (Colvin and Ashman 2010). In particular, instructors and mentors should understand the definition of each of these roles and how they will function in a classroom.

9.6.2 Benefits and Risks

I think most tutors are aware of the benefits but are rarely aware of the risks. Risks should be articulated and planned for and in doing so, lessened. Primary risks that I see over and over include becoming too attached to students, being rejected by students and especially the amount of time involved in being a good mentor or tutor. Quite often, I see peers whose own studies and personal lives have suffered because they are trying to be "on call" for a class or group of students. Training programs should include time management skills and stress taking care of the peer's self over assigned students.

Training programs can help increase success by having mentors/tutors engage in whatever their peer requirements will be ahead of time. If mentors or tutors will be in charge of groups by themselves, then practice is helpful in training peers to manage difficult personalities and set goals, etc. If they will be working one-on-one, then practice in areas such as questioning techniques and so forth is helpful. Have peers practice on each other and practice both roles. Have them practice difficult conversations and other challenging situations. I think it is also important that they have time before courses begin to interact with instructors and make sure they all understand the role that will be played by the peer in the classroom.

9.6.3 Power and Resistance

Most mentors or tutors go into the peer role thinking that they are going to be providing a great service for others. They often need training on understanding the liminal space that they occupy as peers—neither student nor instructor but one to which students assign power. They also need to expect a range of resistance practices from resisting having a mentor/tutor to resisting the strategies that the

peer expects them to employ. Sometimes, instructors resist using tutors effectively, and sometimes, tutors themselves get into the situation and find it is taking too much time and energy and they resist that as well.

Training programs need to help peers recognize that they will have power (even if only perceived) and will also encounter resistance. Administrators who help peers plan for such resistance will eliminate much of the stress that takes place when resistance occurs (and it will).

9.6.4 Impression Management

When social actors enter a classroom, they create and maintain an identity. Peer mentors and tutors use a number of different methods to help them understand and enact their role as both students and as tutors. One of the primary methods is that of impression management. Impression management is used to manage the way that others see a particular role performance such as that of tutor.

Students going into a peer situation generally desire to be credible, good listeners, helpful, patient, and have some degree of responsibility in the classrooms where they were tutoring or mentoring others. These qualities all add up to a particular image they have of themselves as successful peer mentors and tutors. One of the first things is training where peers create, think about, and identify their role and how they see themselves enacting that role. Next, when an instructor or administrator introduces the peer by name and explains their role in the classroom, their role is framed for others. When they begin interacting with students, peers need to think about their role in the context of this specific interaction and frame it for the students. Sometimes, this involves rethinking their performance as in this situation: "[I] got to meet with [my] assigned group for the first time and found that students in the group were older than [me]—one guy has a son like only a year younger than me" (Colvin 2007b, p. 178).

Finally, throughout the interaction, peers have to negotiate their role, defining, and redefining it, as they work with students.

Teaching peer mentors and tutors how to recognize and utilize impression management strategies to manage the perceptions of others as they perform their role can help them be successful in that role. In fact, key may be helping them to recognize that impression management is part of the role. Continued administrative and instructor support is key to helping peers handle and maintain impression management skills throughout the time that they function in a mentor or tutor role.

9.7 Future Research

Future research needs to focus more specifically on how students, instructors, and mentors understand the roles of peer mentors and tutors in a variety of classes and subjects. All of my studies have been conducted at large western US universities

and may reflect a Western bias. However, other peer mentoring studies conducted outside of the western USA note some similarities. In Hall et al. (2008), study of peer mentors at the University of Calgary, they emphasize that careful planning and adjustment is needed before integrating peer mentors into courses. Future research needs to develop these findings further to see whether culture, experience, years in a program, and gender make a difference in more substantial ways, such as how mentor roles are enacted and how that changes the experience of those involved. Future research should also focus on the effect of relationship training on the peer mentor or tutoring experience.

Despite differences in role definitions, peer mentors, as well as peer tutors, need to clarify roles, understand expectations of all parties, and receive training on developing, maintaining, and managing relationships. As Reid (2008) suggests: "real magic in a mentoring program comes in attention to details, in attentiveness and planning, in learning and practicing and reflecting" (p. 71).

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Part V
Transformative Learning

Chapter 10
Learning and Transformation

Sabra E. Brock

Abstract One of the biggest challenges of twenty-first century higher education is to transform students into dynamic workers who can adapt to fast-changing environments. The objective of this chapter is to draw on published and new research to articulate the lessons learned and propose new insights from the field of transformative learning and how to incorporate them into teaching and learning in higher education.

Transformative learning expands our perspective on education beyond the pragmatic foundation of selecting optimum learning tools among new forms of lecture, construction methods such as case studies, and transaction activities that include collaborative learning.

This chapter examines the research foundation of transformative learning and adds findings from original studies on fostering transformative learning in the post-secondary classroom conducted in 2005, 2008, and 2010. It first describes the steps preceding transformative learning. Then, after reviewing the current transformative learning literature and the scholarly writing on college student learning, the next six sections elaborate on the key transformative learning concepts, its incidence, the characteristics of those more likely to exhibit it, as well as the factors fostering it: instructional methods, life events, and types of people who stimulate it. Previously unreported verbatim comments from three original studies expand understanding of the process of transformative learning. Conclusions are then drawn.

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10.1 Steps to Transformative Learning

Transformative learning has been important in the development of college and adult education since Jack Mezirow proposed it more than 40 years ago as a theoretical description of the steps learners undergo in changing their worldviews (Mezirow 1978). From an educator's perspective, transformative learning is when a learner is struck by a new concept or way of thinking and then follows through to make a life change; it supplements more common types of learning such as acquiring facts or learning new skills (Cranton 2006).

The 10 steps predicted to precede transformative learning were set out by Mezirow as (1) a disorienting dilemma; (2) a critical assessment of assumptions; (3) recognition that one's discontent and the process of transformation are shared and that others have negotiated a similar change; (4) exploration of options for new roles, relationships, and actions; (5) self-examination with feelings of guilt or shame; (6) provisional trying of new roles; (7) planning a course of action; (8) acquisition of knowledge and skills for implementing one's plans; (9) building of competence and self-confidence in new roles and relationships; and (10) a reintegration into one's life on the basis of conditions dictated by one's new perspective (Mezirow 1978, 2000).

An example of these transformative learning steps would be a student who believed that Americans have the most innovative ideas. In a class composed of diverse nationalities, innovative ideas are put forward by Italian, Chinese, and Bolivian students (Step 1). She could then question her assumption (Step 2). In chatting with others or in class discussion, she might realize that others had held the same faulty assumption (Step 3). Then, she considers what it means in terms of how she regarded other nationalities' capacity for innovative ideas (Step 4). She may even feel a bit ashamed that she had been so parochial (Step 5). The next class, she could then be more open to ideas expressed by non-Americans (Step 6). If that worked out well, she might adopt this broader perspective when she sought new ideas (Step 7). She could plan a more formalized approach, even writing herself a reminder card (Step 8). As she practices her more inclusive approach, it will become more natural (Step 9) and be made a habit (Step 10).

These 10 precursor steps may or may not be conscious; and they may not necessarily be linear (Cranton 1994; Mezirow 1994). A number of researchers have condensed the process into fewer steps (King 2000; Taylor 2009). One version included only the steps of critical reflection, discourse, and action (Merriam and Caffarella 1999). Some researchers (Newman 2012; Kilgore and Bloom 2002; Kovan and Dirkx 2003) have emphasized their "disproof" of transformative learning because they have shown it not to require the first step of disorienting dilemma. Mezirow has stated that all steps are not required to experience transformative learning (Mezirow 1978, 1994) although Brock (2010) showed quantitative evidence that the more of these steps remembered, the more likely transformative learning occurs and that critical reflection may be more important than the other steps. Also Kelly and Fetherston (2007) indicated that a cluster of

students of conflict resolution did not change their points of view if unwilling to engage in critical examination. Brock et al. (2012) further showed that reporting *none* of the precursor steps is a strong predictor of *not* experiencing transformative learning.

10.2 Transformative Learning Literature

Since 1978, when Mezirow reported his grounded case study that is the foundation of transformative learning, the field has expanded through much qualitative research and more recently, quantitative research.

The two most popular topics in research using the transformative learning model have been (1) the push to validate the pivotal step of Mezirow's model, critical reflection, beyond the cognitive realm to emotional, spiritual, and situational dimensions (Kovan and Dirkx 2003; Kroth and Boverie 2000; Tisdell 2000); and (2) the questioning of the cataclysmic character that Mezirow posited about the process of transformative learning (Newman 2012; Eisen 2001; Kovan and Dirkx 2003).

The first two issues (validating critical reflection and examining the time frame required for transformative learning) indicate an incomplete reading of Mezirow's original exposition of transformative learning. However, Mezirow did acknowledge that the term critical reflection, on which he centered his theory, might have better been called perspective reflection or reframing because it implies the use of exclusively cognitive functions; rather, he was referring to the use of all dimensions including affective (Mezirow 1998). There is some discussion in the transformative literature about "adding in" emotional (Kilgore and Bloom 2002) and spiritual elements (Christopher et al. 2001; Tisdell 2000) to the step Mezirow called critical reflection. Mezirow has said all along that critical reflection includes emotional and spiritual elements; it covers context, other ways of knowing, and relationships. As to the second issue, in 1985 Mezirow said transformative learning can be either "an accretion" or an "epochal" moment (Mezirow 1985). Generally, Mezirow's theory has held up and has stimulated continued original research and debate.

The transformative learning research literature has expanded well beyond Mezirow's original sample of housewives returning to work. Transformative learning has been shown to be useful in explaining the transformative process among women in the workplace (Carter 2002), older adults (Moon 2011), mixed gender professionals (Maybury 2001), mixed gender environmentalists (Kovan and Dirkx 2003), and mixed gender students (Bamber and Hankin 2011; Brown 2006; Clare 2006; Cragg et al. 2001; Eisen 2001; Glisczinski 2007; Hanson 2010; Harris 2002; Hodge 2011; King 1997; Kroth and Boverie 2000; Sessa et al. 2011; Ziegahn 2001). Mixed gender welfare recipients experienced all of the transformative learning elements mentioned in the literature except one (spirituality) in a family-empowerment project focusing on life skills (Christopher et al. 2001).

At the end of a major longitudinal study (Baumgartner 2002; Courtenay et al. 2000), Baumgartner concluded that the transformative learning approach was helpful in examining the nature of perspective transformations made because of a diagnosis of HIV/AIDS, specifically that perspective transformations held and individuals continued to expand their meaning as time went by. These researchers confirmed what Taylor had posited in summarizing 5 years of transformative learning research (Taylor 1997), i.e., that social interaction was important for change to take place.

In one of the few mixed methods studies incorporating both qualitative and quantitative techniques found, King discovered the transformative learning model was useful in identifying how undergraduates in four diverse evening programs learn, and she presented a validated instrument to measure the 10 steps of the Mezirow model (King 1997). In a later mixed method study, King expanded her interpretation to show that the perception of empowerment that ESL (English as a Second Language) students had fostered transformative learning, as did the occurrence of other life changes such as immigration and changing jobs, and/or residence (King 2000). One other quantitative study (Cragg et al. 2001) showed transformative learning among graduate nursing students although these authors found a values scale too unreliable to further expand understanding of the impact of transformative learning on values.

Only a few of the many qualitative studies did not find the transformative model predictive. Reasons cited were the lack of consideration of the multiple realities of drug-addicted mothers (Kilgore and Bloom 2002) and several misreadings of Mezirow, e.g., that transformative learning does not allow for gradual transformations, as well as cataclysmic ones (Baumgartner 2002; Eisen 2001; Kovan and Dirkx 2003).

After an extensive review of the transformative learning literature, Taylor concluded that transformative learning was supported by the research, but more was needed to capture actions taken because of transformative learning (Taylor 1997). He recommended less emphasis on critical reflection (although Mezirow 1998, disagreed) and more emphasis on context, other ways of knowing, and relationships. Mezirow expected that the transformative learning model would always be evolving but defended the importance of critical reflection as a key step; the point Mezirow continued to make is that critical reflection covers context and relationships, as well as other ways of knowing besides the rational (Mezirow 1998).

10.3 College Student Learning

Contributing factors to college student learning are faculty (Smart et al. 2000), out-of-classroom college activities (Terenzini et al. 1996), and peer support, especially for women (Kuh 1995).

Most college students progress toward maturity as they stay in school and advance their class standing. Several theorists have created models of such growth.

For example, Kegan's developmental stages include the socialized mind (focuses on one's own needs), the self-authoring mind (identity includes interpersonal relationships), and the self-transforming mind that accepts ideological differences (Kegan 1994). In a later study, it was Kegan and Miller (2003) who concluded that the last stage rarely occurs until after graduation and presented evidence that higher levels of development predict success in work and organizational life. In a longitudinal study of cognitive development of college students, Baxter Magolda found four stages of growth: absolute knowing, transitional knowing, independent knowing, and contextual knowing (Baxter Magolda 1999). The passage is from certainty about one's knowledge to the ability to question in the last stage, which can be likened to critical thinking. She found gender differences in the first stages with women more likely to use what she called a receiving pattern and male students preferring an active approach to learning. This researcher went on to characterize how female students valued peers more as collaborators, whereas male students used peers for testing achievement. In the maturation process, she found that men grew in finding common ground with others and women by taking the initiative to meet their own needs. She also found that the gender difference in thinking had disappeared at the last stage of contextual thinking (Baxter Magolda 1992).

Stage and her colleagues connected the frameworks and theories of learning such as multiple intelligences, social cognitive theories, and motivation theories; and they identified learning activities that foster college student learning:

- social learning experiences, particularly those that promote group construction of knowledge and that allow a student to observe other students model successful learning and that encourage him or her to emulate those such as peer teaching and group projects;
- varying instructional modes to deviate from lecture format such as visual presentation modes, site visits, use of the Internet;
- varying performance expectations for students from merely individual written formats to group work that includes writing and presentation, interpretation of musical, theatrical, dance, or artistic work, and performance of actual work site tasks;
- providing choices that allow students to capitalize on personal strengths and interests;
- overt use of socio-cultural situations and methods that provide authentic contexts and enculturation into an academic disciplinary community;
- course material that values diverse cultural, ethnic, class and gendered groups (Stage et al. 1996, pp. iv–v).

This broad list showing the diversity of influences on learning while in college relates to the learning experiences that increase the likelihood of transformative learning. So does the importance of the context outside the classroom (Stage 2003). Other scholars underscored the importance of the active support of others in growing, e.g., support from other students, classmates, advisors, and teachers (Merriam et al. 1996), as well as woman–woman friendships in undergraduate school (Aleman 1997). The demands of modern culture such as partnering,

parenting, working, and learning are believed to be inadequately addressed in today's schools (Kegan 1994). Life events such as marriage, divorce, moving, and job change or loss play an important part in creating the stimulus for transformative learning (Cranton 1994).

To summarize perspectives on college students, the individuals enrolled in a university have chosen (and devoted significant amounts of time and in many cases money) to learn and change themselves so they are better prepared for the workplace. Some scholars indicate that there may be differences in how males and females learn during a college career and that maturation is an important contributing factor to effecting changes in perspective. Many factors affect the quality of the educational experience: the classroom curriculum, interactions with faculty and other students, and other changes in the student's life.

10.4 Methodology

A series of studies measured the incidence of transformative learning and each of the 10 precursor steps as well as demographics and college majors. Samples of undergraduate populations were gathered in 2005, 2008, and 2010 from two colleges in a large metropolitan area in the northeast USA via a Web survey. Total sample sizes for each year are 298, 454, and 468, respectively. The 2005 sample consisted of traditional age undergraduates (mean age 19), whereas the later two samples had mean ages of 26 and 27.

10.4.1 Instrument

Data describing students' experiences were collected using a quantitative survey, previously validated through use of an expert panel and multiple pretests (King 1998). Respondents self-reported whether they had experienced transformative learning and the 10 steps leading to transformative learning, and there were questions on demographics and college major. Recall of each of these precursor steps was measured by check boxes and included the option to say "none," followed by a question whether or not transformative learning occurred while at this institution. Those respondents reporting transformative learning were asked to explain in their own words how they experienced it. These open-ended responses were used to confirm that students reporting transformative learning understood that it was not merely learning a new tool, such as SWOT (a commonly used model in business, describing strengths, weaknesses, opportunities, and threats). For this study, the instrument was modified to add class rank in the demographic section. This paper-based survey was first piloted to assure the original method would be replicable on the Web. Further piloting showed comparable results between the paper-based instrument and a Web-based version of the survey.

10.4.2 Procedures

Participation in all three studies was voluntary and had been approved by the colleges' Institutional Review Boards. In 2005, the Dean of the Undergraduate School helped recruit students; recruitment invitations were included in four editions of the school's weekly e-newsletter. Those students interested in volunteering were directed to a link for a Web site (surveymonkey.com) displaying the survey. In the 2008 and 2010 studies, undergraduate students were e-mailed directly and offered a link to the SurveyMonkey.com Web site. In the 2005 study, participants were offered participation in a $250 lottery as suggested by Dillman (2000) to increase response rate. No incentive was offered in the latter two studies, but in all three the offer was made to provide a summary of the completed results if an e-mail address was provided. Response rate was 13 % in the 2005 study, the relatively low level being attributed to the invitation appearing at the end of the weekly Dean's letter and "below the fold" of this electronic communication and thus not on the opening screen (Lynch and Horton 2001). In the latter two studies, the response rate to the more direct solicitation was 60 % (2008) and 61 % (2010). Split half reliability was checked between responders and non-responders in each of the three studies. The resulting randomly selected halves did not show significant differences on key variables.

Selected information from these three studies (Brock 2010; Brock and Abel 2012; Brock et al. 2012) has been reported elsewhere, but not the verbatim comments described in the next sections.

10.5 Incidence of Transformative Learning

What proportion of a classroom can be expected to have at least one transformative experience in a college career? As reported earlier in Brock et al. (2012), the range in the three studies elaborated on here was from 38 to 55 %. King (1997, 2000) found a similar range with the highest percentages coming from ESL classes where students are older than traditional-aged and likely to have moved residence and are living and working in a culture new to them. Glisczinski (2007) reported that 35 % of college students said they had experienced transformative learning.

10.6 Characteristics of Transformative Learners

What are the characteristics of those more likely to undergo transformative learning? Brock et al. (2012) found that more mature students (25+) reported higher rates of transformative learning as did Hispanic students and students with the non-traditional GED (graduate equivalent diploma). The finding related to ages

does support discussions in the educational literature that transformative learning is related to the maturation process. This finding is important in that educators are encouraged not just to celebrate the sudden aha type of learning but continue to stimulate the more gradual change of framework occurring over time. The work of Perry and other stage theorists may be useful in framing how incremental transformative learning can be fostered (Baxter Magolda 2000; Kegan 1994; Perry 1970). In looking back over a semester, learners can be surprised that life lessons have been absorbed. Reflecting on behavior and life can foster seeing the world in a new way.

Maturation and the building of self-confidence are major contributors to the experience of transformative learning. Many students talked about the usually gradual process that occurs in college:

- "The normal course of self discovery led me to change what I expected out of myself; going through classes helped initiate this." "I think it's more about growing up than the college I was in. Living away from home and being self-supportive gave me more self esteem and made me respect others who are hardworking and self-starting."
- College is "the time in life to grow up."
- "I just began to not feel comfortable with what other students and teachers were saying or automatically believed in, and also was starting to be independent from my parents' beliefs (which are the polar opposite); I started questioning more and also started becoming more verbal about my own beliefs."

The emergence of a more confident self was mentioned by a number of students as characteristic of transformative learning:

- "I became more ambitious and self-confident; I viewed life as something I am in control of."
- "I feel more confident in dressing, talking and acting in the way that my belief requires."
- "Having a college degree gives you much more confidence with yourself."
- "All the undergraduate courses helped me to identify and to make sense of my own life and the life of the people in the community where I live; it helped me put a name to what I was feeling and to validate me as a person."
- "Being in school helped me to think in a different direction, helped me to build my confidence and believe I can accomplish anything."
- "I think that the fact that I am in school, and thinking of completing college with a master's degree makes me feel as if I am going to cut that dense boundary that separates me from people above."
- "School influenced me by building my self-confidence, self-esteem, and goals. Getting good grades, making it through each semester has shown me I can do it!"
- "It proved to me that I was capable of achieving more than I had thought. That I can inspire people with how I inspired myself."

In some cases that increase in confidence directly related to the transformative learning step of role redefinition.

- "On my return to college after many years, I doubted my academic ability in being able to comprehend and retain the work; the professor shed a whole new light on my esteem."
- "My self-confidence went through the roof; I realized I didn't need to be in the relationship I was in; I realized that I was smart and my self-worth was more than what he thought of me and what he made me think of myself."
- "School helped me to realize that I was able, willing, and ready to take my education to the next level. It also helped me to evaluate things that were going on in my personal life as far as parenting, becoming a single mother, and starting my life all over again."

When looking at gender, it appears that males and females are not different in the proportion likely to experience transformative learning (Brock et al. 2012). However, the mechanics of undergoing it may be different. Women may process competition differently than men, adding a frame of reference, whereas men appear to absorb it directly.

Responses to open-ended questions give some possible explanation of the difference between men and women in response to a competitive class environment found by other researchers (Gneezy et al. 2003). These answers seemed to indicate men may be more used to thriving on competition, whereas women need to contextualize competition to see it as a positive. For example, male student responses talked about a class environment as:

- "Fierce in competition and constantly moves me to forward. In this atmosphere, one is more future-driven than before;"
- "I realized that if it were not for the competitive nature of the school and the city, I would not have been as motivated in my studies… I have adopted a more serious tone in all aspects of my life."
- "I began to see that I needed to raise my expectations and work much harder than I ever have before."
- "My friends in [this school] are all hard-working and smart; so, I feel like I am competing with them. This has improved my skills and perspective."

While many of the female students reported a positive reaction to competition, they appeared to have expanded definitions of what competition is, for example:

- "This is a mature, thought-provoking setting in which we are all hammered by different presences. Diversity in thoughts provided me with the motivation to change and be open-minded."
- "I was put in a place with high achievers and this influenced me to raise my own expectations."
- "I knew coming to college means exposing myself to a myriad of ideas. I'm fine with that and I'm willing to change if I find the new ideas more applicable and convincing."

Some female students just observed competitiveness as part of the environment, saying:

- This school is "very fast paced (as is [this city]) as well as competitive and there are the students [who] have very strong character, including the women."
- "Each person is for himself in school. No one will look after you. I must take responsibility to organize my academic time, social time, and relaxing time."
- "I realized that starting now, I need to be more responsible and dedicate more time to what should be my higher priorities to help me prepare for the future."

10.7 Instructional Methods Stimulating Transformative Learning

The studies on the instructional methods that foster transformative learning have a common theme that shifts the goal from instructor-centered design to student-centered and to one where students are active learners in the classroom. A number of studies examined the classroom elements that contributed to transformative learning. An adult education experience could itself be a disorienting dilemma (Kroth and Boverie 2000).

Factors within the classroom found to contribute to transformative learning were the importance of a non-threatening educational environment (Christopher et al. 2001), peer learning partnerships for expert instructors in a practice improvement class (Eisen 2001), as well as reflection, class discussion (Harris 2002), and storytelling (Maybury 2001). The time and space in asynchronous distance learning gave more space for the critical reflection necessary for transformative learning (Ziegahn 2001). Other possible connections between transformative learning and spirituality (Tisdell 2000), with for-pleasure reading choices (Jarvis 2003) and with the mission defined for one's life (Kroth and Boverie 2000) were explored but not found to be significant contributors. In workplace studies, contributing factors to transformative learning have included new meaning perspectives to manage the conflict precipitated in their personal relationships by a mid-life academic degree for eight women (Kennedy 2002), as well as sharing "fundamental existential dilemmas" in personal stories, and creating relational space for 11 mid-level executive men working in nine different Silicon Valley corporations (Robin 1998).

Learning activities found to support transformative learning include personal learning assessments, reflection, dialog, discussing concerns, and self evaluation, as well as the concept of the instructor as a support to, rather than an originator of, learning (Cranton 1994). Other devices include learning journals, communities of learners, and the recognition of the need for support of students' emotional needs (Baxter Magolda 2000). Student choice of learning activity can also affect learning positively; in a study where undergraduates in a communications course were

given the personal choice of type of assignment and evaluation method, students reported not only preferring this approach, but also those who considered the long-term payoffs had a significantly more positive learning outcome (Lewis and Hayward 2003). Efforts have been made to show that setting up motivational sessions prior to classes may provide stimulation to learning. Some of the influencers of motivation included giving the learner the opportunity to provide input to whether to take the class (Cheng and Ho 2001), but at least one effort to stimulate motivation by a pre-class session did not bear fruit (Werner et al. 1994).

The format of a classroom situation can also affect transformative learning. Prior research had also confirmed the value of assignments to write or talk about concerns, critical thinking and reflection, as well as internships (Brock 2010). The 2008 and 2010 studies confirmed the value of actually recording concerns as an aid to transformative learning.

The three current studies show that talking and writing about concerns, deep concentrated thought and personal reflections were consistent facilitators of transformative learning. The 2005 study with a sample of traditional-aged students added a non-traditional class structure and internships to the list of facilitators to transformative learning. The 2012 study of slightly older students added a personal learning assessment to the list.

Verbatim comments in 2008 pointed to specific class subject as being foundation for change, although quantitative analysis did not show significant differences in the incidence of transformative learning among different majors. The subject of psychology and of religion came up but one student mentioned an acting class as "increasing perception to the energy around me." English class was a platform for debating political issues. A science class taught one student "how people became braver and improved other people by themselves." In 2010, a student noted "A journalism class made me more aggressive and unafraid of approaching strangers. I realized questioning doesn't mean being too forward, it means learning." Another learned through a biology class "to question research when it's presented through the media." And, "the undergraduate portion of the Doctor of Physical Therapy program is constant work and pressures, so it forced me to have to figure out what works practically rather than what works in an ideal situation." Lastly, "Psychology classes have been very profound. I have thought of my past a great deal and relearned how to proceed dealing with life changes."

The concept of critical thinking has greatly influenced the design of learning activities that prepare students for a world where one has to make judgments in complex and ambiguous situations (Merriam and Caffarella 1999). Critical thinking, going back to Kant's use of rationality to examine what had been faith-based, has been an important stream in social sciences research (Creswell 1998). Brookfield defined critical thinking, which is also the second of Mezirow's steps leading to transformative learning, as a habit of looking at the assumptions beneath behaviors and ways of thinking (Brookfield 1993). Other scholars besides Brookfield have shown critical thinking skills learned through classroom lectures, application exercises in classroom and library, student presentations, and testing (Tremblay and Downey 2004).

The adult education literature indicates that learners need support, e.g., breast cancer survivors found self-directed learning provided useful information, but that it also was needed to help them deal with negative emotions (Rager 2003). Personal support and expression of care may be important supplements to self-directed learning, especially among women.

Quantitative research conducted among three separate samples of undergraduate business majors in two colleges sheds more light on the steps preceding transformative learning in the classroom. Brock et al. (2012) reported that the step of *reflection* was more important in predicting transformative learning than any of the other precursor steps. They found that the steps of *acquiring the skills/knowledge to implement a changed perspective*, *trying on new roles*, and *building confidence* were also important to transformative learning. Surprisingly, other precursor steps were not significant predictors: *recognizing others shared the discontent*, *exploring new roles* (as contrasted to *trying* new roles), *self-examination with feelings of guilt/shame*, *planning a new course of action*, and *reintegrating new perspectives to life*.

10.8 Life Events Stimulating Transformative Learning

Changes outside of the classroom, such life events as marriage, divorce, moving, and job change or loss, play an important part in creating the stimulus for transformative learning (Cranton 2006) as do immigration and changing jobs, and/or residence (King 2000), role transitions (Isopahkala-Bouret 2008) and out-of-classroom college activities (Terenzini et al. 1996).

To summarize key points of research published elsewhere, Brock (2010) reported that moving residence, which could represent anything from a move away from the parental household to immigrating to a new country, is the single life event most predicative of transformative learning. It would appear that moving not only calls for redecorating the walls of one's home, but also the walls of one's mind. As many college students do move to campus, this seems a natural to tie in the dislocations made to the internal potential for readjustment. In a repetition of this study in 2010 at another college with an older, commuter student base with both liberal arts and professional majors, moving was also a significant predictor of transformative learning. However, in a 2008 study at the latter college, it was only death of a loved one or retirement that predicted transformative learning.

The immigrant experience as a facilitator to transformative learning was found by King (2000) and echoes through the current research. Not only do immigrants move they also encounter many new cultural influences. One student said, "I feel a lot more comfortable living in New York City as an immigrant than I did before; furthermore I feel I have a better view about America." Another that "I re-immersed myself in America and realized I had to be different."

10.9 People Supporting Transformative Learning

Summarizing research published elsewhere, teachers were shown to be a catalyst to transformative learning less in original research done in 2008 and 2010 at a New York area commuter college than Brock and Abel (2012) found in a 2005 study among traditional-aged students. The influence can come from a either a positive or a negative experience.

Respondents in 2008 talked about the positive influence of instructors:

- [Had] "a dynamic teacher,"
- "My teacher challenged me to meet my potential,"
- "My teacher presented a different point of view," and
- "Hearing professors' thoughts and experiences."

Verbatim comments of negative experiences included:

- "Teacher expressing inappropriate ideas,"
- "Being avoided by one professor and suspended by another," or being told "you're not a good writer."

In 2010, positive experiences with teachers mentioned:

- "I had a great professor who really inspired me to try to make a difference for what I believed in;"
- "My professor has guided me to realize I can be more than what I originally planned;"
- "I respect Professor ___ and looked up to her as a mentor;"
- "The professors always had fun anecdotes, quotes, or poems along with our assignments and these included some that were very compassionate;"
- "The professors made you think about who you are and what role you are playing in today's society;" and
- "I know that I am being guided by smart, professional people who have been in this position before."

The negative experiences also were stimulants to transformation:

- "A professor gave another student who did not do as well as me the same grade; in discussing it, I was disrespected;" or,
- "The teachers' knowledge of the system opened my eyes to what I was about to get into."

The diversity of a student body also is a key stimulant to transformative learning. In the 2008, research students described their transformations as due to "exposure to different nationalities." They also said:

- [I] "realized that disabled people are people just like you and me, who expect to be treated with the same respect as everyone;"
- "Seeing many students from many different backgrounds has opened my eyes to see the different options and opinions that are out there," and

- "I was placed in a class with people from many different ethnic backgrounds and some of their personal stories, struggles and trials of life influenced me to be more open."

Other comments about the influence of diversity included:

- "My beliefs changed in a more positive way towards other cultures. I had a better understand of what other people had to experience in their everyday lives;"
- [I] "became a little open minded about other people who may have a different lifestyle, though sticking very strongly to my own religious beliefs;" and
- "Not to make assumptions about people from their role or cultures and not to be dismissive, to learn to become more attuned when I am not familiar with a person's background, rather than just tune into the familiar."

A few of the comments mirrored back to the original case study done by Mezirow, for example, one woman said, "while attending college I have met different individuals that made me realize that there is more to life than marriage. I learned to believe in myself."

In the 2010 study, students talked about stimuli for transformative learning as:

- "Meeting other people who had their own ideas of what to do with life/schooling/working made me question some of my own motives;"
- [It was] "exposure to people I normally would not have hung out with" and "to others outside my social circle;" also,
- "Meeting new people from different backgrounds and learning about different ways of life were eye opening."

10.10 Conclusions

Much research, writing, and thought has been devoted to how educators can foster transformative learning and stimulate students to break through perceptual barriers to new ways of thinking. It is certainly true that this kind of resilience and flexibility of mind will be required for success in the twenty-first century.

What can be concluded about how to increase an individual student's likelihood of experiencing transformative learning? Not all college students will be changed by the experience. In fact, only half report a transformation. And what to look for? First, start with students who have chosen to immerse themselves in new cultures and be open to change: the immigrant, the one who moves out of the parental household, or the person who has decided to start a new life. Then, respect that there is a process of maturation that traditional college-aged students go through that, when considered, can reinforce the likelihood of transformation and new perspectives on life. And bring on people and experiences who both challenge and

support existing patterns of belief. Do not ignore the value of diversity of cultures and lifestyles in our increasingly global communities.

Also the 10 precursor steps to transformative learning that Mezirow hypothesized can be building blocks to a foundation for it. The more of these steps remembered, the more likely transformative learning occurs and that critical reflection may be more important than the other steps.

Some classroom techniques are better than others in fostering transformative learning. Techniques that cause students to reflect on their values (and do so critically) create a fertile field for transformative learning. Examples are talking and writing about concerns, stimulating deep concentrated thought, and personal reflection.

The teacher is often at the core of the life-changing nature of education. A well-placed challenge to existing beliefs, whether direct or by putting students in situations different from their life experiences, can begin a process of transformative learning. This observation may be well to remember as post-secondary education moves to place more emphasis on delivery through technology and increasingly larger classes.

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Chapter 11
Using the Discovering Model to Facilitate Transformative Learning in Higher Education

Michael Kroth and Patricia Boverie

> *The greatest obstacle to discovering the shape of the earth, the continents, and the ocean was not ignorance but the illusion of knowledge. (p. 86)*
> *The most promising words ever written on the maps of human knowledge are terra incognita—unknown territory (p. xvi).*
> *The Discoverers: A History of Man's Search To Know His World and Himself*
>
> Daniel Boorstin (1983)

Discovering is at the heart of humanity. We were born to be discoverers, whether of lands beyond the horizon, the planet, or the universe; of the physical or social sciences underlying the mysteries of our world (Boorstin 1983); or of the deepening awe that occurs when realizing that there is more to know than we can ever hope to comprehend or apprehend. We seek to learn about the world around us and the world within us from the time we are born to the days we take our first steps through the experiences and development of a lifetime to the day we die. The sales of self-help books indicate that many people are looking for ways to discover better ways to live their lives in the world. Human resource development professionals help people to discover their strengths (Buckingham and Clifton 2001). Individuals seek to find their vocations, calling, or mission (Kroth and Boverie 2000), and counselors guide individuals through career exploration (Brown 2007).

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Experts in human potential and education claim that discovering one's passion "changes everything" (Robinson and Aronica 2009). Leaders and scholars seek to know how change occurs or are constrained in organizations, society, and individuals (Kegan and Lahey 2009; Kotter and Cohen 2002; Rogers 2003).

Exploration, minor or monumental, complex or simple, personal or societal, is at the core of who we are and how we change as we learn more about ourselves and the world. It is when we think we know it all, when we believe we have a handle on "truth," when we are constrained by unexamined-yet-governing assumptions and their related beliefs, or when the forces of life have made us decide to quit trying (Peterson et al. 1993) that our inquiry wanes and we settle for whatever life hands us. It is the job of higher education faculty to provide learning environments that facilitate inquiry and discovery.

In our book, *Transforming Work: The Five Keys to Achieving Trust, Commitment, and Passion in the Workplace* (2001), we proposed a Passion Transformation Model intended to help leaders and individuals create passionate work and passionate work environments. A process we call discovering is embedded in that model. It is grounded in transformative learning theory (Mezirow 1991) and intended to demonstrate how one's passion might be discerned and then followed. In an earlier techniques article (Kroth and Boverie 2009), later elaborated upon related to leadership (Kroth and Boverie 2011), we suggested a simple model that can be used to help discuss and to understand the transformational learning process and, as importantly, the role personal agency can play for individuals who wish to initiate the inquiry process themselves. The editors of this book asked us to share how this might be applied to higher education learning. The purpose of this chapter is to present this model which college faculty can use to help facilitate transformational learning experiences for their students. We draw here from both those earlier techniques articles and expand the discussion to include transformational learning in higher education.

11.1 Transformative Learning

Transformative learning theory (Mezirow 1991) has become perhaps the leading adult learning theory today (Taylor 2007), and students, practitioners, and faculty are still finding ways to practice it. This useful theory has been applied to a variety of settings, in such arenas as higher education, workplace education, community, and social change (Mezirow and Taylor 2009).

Briefly, transformative learning occurs when something causes people to examine their assumptions about the world (Cranton 2006). Over their lifetime, people develop a perspective of how they see the world. Much of what they come to believe has been simply accepted as fact from their family, culture, and other sources, such as the media or the community, without being questioned. People build a set of assumptions or beliefs about the world which underlie their behavior. This set of assumptions is the frame of reference through which people operate

(Mezirow 1991). It is when something happens that shakes one or more of those underlying beliefs that transformative learning begins. Sometimes those experiences can be traumatic, calling a person's self-concept, or even world views into question. An unexpected health challenge, a job loss, or a revelation about a close personal relationship or a role model, can cause something thought to be true to be brought into question.

Mezirow named these assumption-shaking experiences "disorienting dilemmas." He called the process of transformative learning, when people transform their now-questioned frames of references into ones that are more dependable, as one of "perspective transformation." He described this process as occurring in some variation of the following ten phases:

1. A disorienting dilemma
2. Self-examination with feelings of fear, anger, guilt, or shame
3. A critical assessment of assumptions
4. Recognition that one's discontent and the process of transformation are shared
5. Exploration of options for new roles, relationships, and actions
6. Planning a course of action
7. Acquiring knowledge and skills for implementing one's plan
8. Provisional trying of new roles
9. Building competence and self-confidence in new roles and relationships
10. A reintegration into one's life on the basis of conditions dictated by one's new perspective (Mezirow 2012, p. 86)

This process leads to a deep shift in perspective. Although a disorienting dilemma will start the process, it may take years for it to fully play out in a person's life. Transformative learning theory is considered an adult theory because the focus is not on initial formation of these beliefs, assumptions, and values, which occurs in earlier years, but on their transformation, which occurs later.

Although explained simply here, transformative learning theory is considerably more comprehensive and complex. Mezirow (2012), says transformative learning is a process "by which we transform our taken-for-granted frames of reference (meaning perspectives, habits of mind, mind-sets) to make them more inclusive, discriminating, open, emotionally capable of change, and reflective so that they may generate beliefs and opinions that will prove more true or justified to guide action" (p. 76). They are transformed, he says "by becoming critically reflective of their assumptions and their context" (p. 84) and such assumptions might be "epistemological, logical, ethical, psychological, social, cultural, economic, political, ecological, scientific, or spiritual, or may pertain to other aspects of experience" (pp. 84.85).

A frame of reference, Mezirow (2012) says, is a structure of assumptions and expectations and is composed of habits of mind with resulting points of view. A habit of mind is a set of assumptions that acts as a filter through which one interprets experience. Habits of mind might be sociolinguistic, moral-ethical, epistemic, philosophical, psychological, or aesthetic.

Transformative learning theory has evolved considerably since Mezirow developed it initially just a few decades ago. Taylor (2008) describes several conceptions of tranformative learning, including Mezirow's psychocritical perspective, but also a psychoanalytical approach which views transformative learning as a process of individuation, a psychodevelopmental perspective (a lifespan approach), as well as social emancipatory, neurobiological, cultural-spiritual, race-centric, and planetary perspectives. *The Handbook of Transformative Learning: Theory, Research, and Practice* (Taylor, Cranton, and Associates, 2012) is an excellent resource for achieving an in-depth understanding of transformative learning theory.

11.2 Transformational Learning and Higher Education

Transformative learning theory was rooted in higher education from its origins. The initial transformational process of perspective transformation was first described in a 1970s study of women in college reentry programs (Mezirow and Marsick 1978). Building upon this initial study, Jack Mezirow continued to develop transformative learning theory (Mezirow, 1978, 1981), which he discussed comprehensively in his book, *Transformative Dimensions of Adult Learning* (Mezirow 1991). Since then he has authored and co-authored books and articles further discussing the theory and practice of transformative learning. More importantly, his initial work has resulted in transformative learning theory arguably becoming the dominant adult learning theory today and has spawned countless books, articles, and continued research (Taylor 2008). Now, 35 years after perspective transformation was introduced, there is a scholarly journal, *The Journal of Transformative Education*, dedicated to transformative learning (http://jtd.sagepub.com/), a transformative learning handbook (Taylor and Cranton 2012) and a scholarly conference (http://meridianuniversity.edu/index.php/about-the-conference) focused upon it (Dirkx 2011). Indeed, the *Journal of Transformative Education's* mission is focused completely on transformative education and even a casual reading of its tables of contents shows the variety of research, theory development, and practice that is now occurring in higher education.

Spawned over three decades ago from a study about higher education, transformative learning practices are now found in a wide variety of higher education programs and disciplines. Mezirow and Taylor (2009) devote an entire section of their book *Transformative Learning in Practice*, to higher education and signal the range of work occurring with chapters from as varied disciplines as sociology (Langan et al. 2009) and palliative care education (MacLeod and Egan 2009), and learning strategies from dialogic teaching (Gravett and Peterson 2009) to arts-based approaches (Butterwick and Lawrence 2009) to mentoring (Mandell and Herman 2009). Some of the specific techniques and practices used to facilitate transformative learning discussed in the higher education section of this book include reflective assessment portfolios (Donaldson 2009), journaling (Dirkx and Smith 2009), theater

(Butterwick and Lawrence 2009), and cultural imagination (Tisdell and Tolliver 2009).

Research related to transformative learning is also burgeoning in higher education. Kasworm and Bowles (2012) looked at around 250 transformative learning-related publications from 1994 to 2009 focused on higher education learners and contexts, both noncredit and credit. They describe higher education as a "naturalistic landscape" (p. 389) which produces challenges for adult learners and an "*invitation* to think, to be, and to act in new and enhanced ways" (p. 389). Higher education is a natural environment for transformational learning because opportunities for what Mezirow has called "disorienting dilemmas" abound. Not only do students often find themselves in a very different physical environment from ones they may have been raised in, but they are often confronted with belief systems and academic content that do not fit their established ways of thinking.

Kasworm and Bowles (2012) describe how transformative learning in higher education environments can be designed intentionally. Experiential programs that engage students with unfamiliar people or cultures through action research, service learning, portfolio, or prior learning assessment, as examples, can facilitate the examination of assumptions and, hence, cause disjuncture between an individual's established belief systems and what is being observed or experienced in the world.

From this research, Kasworm and Bowles (2012) outline five domains of intervention strategies supporting transformative learning and provide examples of instructional activities for each:

Domain One: Development of Self-Reflection, Emotional Capability to Openness, and Critical Disjunctures. Among their examples are reflective logs and essays, role-playing, cultural immersion, and simulated games.

Domain Two: Strategies for Critical Reflection. Among their examples are journaling, dialoguing with others, experiencing new situations beyond one's comfort zone, collaborative writing projects, and engagement in critiques.

Domain Three: Supportive Social Environment. The importance of providing a learning environment that is respectful, trusting, and safe is noted here, as well as the role the person facilitating the learning experience plays in providing a supportive environment, while also serving as a guide and catalyst for reflection and examination.

Domain Four: Use of the Arts, Literature, Film, and Drama as Tools for Transformative Learning. Among their examples are improvization and theater drama, arts-based activities, and use of the literature and writing.

Domain Five: Holistic, Affective, and Spiritual Processes. Among their examples are imagery and contemplative practices, forms of culturally responsive teaching strategies, and empathic connections.

11.3 Other Arenas for Transformative Learning in Higher Education

Although so far we have focused our discussion of transformative learning in higher education on research and teaching, there are many other opportunities to apply transformative learning techniques in higher education environments. For example, career centers regularly advise students who are seeking guidance about degrees and occupations to pursue. Individuals' career aspirations are constrained by their assumptions about their abilities and their opportunities (Gottfredson 1996), and career counselors have the opportunity to help students make explicit these assumptions, to examine them, and to discover prospects they had not previously considered. Faculty who advise students also have this opportunity when considering study plans or when working with students who are searching for how their academic work might apply to future professional goals.

The same holds true when junior or even more senior faculty considers research agendas and future career planning. Senior faculty mentoring junior faculty can help them uncover and examine assumptions they may have absorbed and adopted from an influential major professor or the dominant paradigm of their doctoral program. By problematizing their own belief systems, senior faculty can give junior faculty space to do the same as they consider their own research agendas and future contribution. When faculty think about their own career journeys, there is significant opportunity to test assumptions about both emerging research opportunities and also the changing nature of higher education. The nature of the professoriate will doubtless be transformed over time and belief systems about it—what faculty believe to be true—will doubtless be challenged via disorienting dilemmas caused by a changing external environment.

11.4 Discovering

Some of the most well-known transformational learning experiences involve the discovery of passionate work. For Christians, an example would be Paul's conversion in Damascus as he found a new purpose in life after scales fell from his eyes (The Bible, Acts 9). For Buddhists, the story of how the Buddha, "went into solitude and then sat beneath the bo tree, the tree of immortal knowledge, where he received an illumination that has enlightened all of Asia for twenty-five hundred years" (Campbell 1988, p. 167) would be another example. Discovering as we have defined it is the process in which a person comes to know what she or he is passionate about doing. For organizations, discovering in this context means providing ways for employees to determine the kind of work that they will love to do and then to help them do it (Boverie and Kroth 2001). The theory and process that best describes the discovering process for individuals is transformation theory, of which discovering passionate work is actually a subset. People are limited in

realizing what they might love to do to the extent they are unwilling to test their assumptions about what they can do and are therefore unwilling to explore, and their opportunities are only expanded to the extent they are willing to question assumptions about themselves. As in transformation theory, adults' assumptions about their career choices are often unexamined even when they have been derived in childhood from extant societal and cultural beliefs, including those handed from parents, educational, community, and other significant influences decades earlier (Gottfredson 1996; Gould 1978).

We have described discovering in terms of finding work about which one can be passionate, but discovering is at the core of a vast array of transformative learning issues and is initiated by a disorienting dilemma. For example, at some point, many discover that a role model is not as perfect as was previously believed and that a different role model might be better suited. Others may discover that there are viable world views different and more appealing than they experienced growing up. Still others may discover that a particular ideology they believed in is incomplete or inadequate, but that another is more convincing. By learning more about the world, people discover new ways of considering it.

11.5 The Discovering Model

The Discovering Model (Fig. 11.1) is a practical tool using just two dimensions of transformative learning to help understand and apply transformative learning theory. We initially developed it and the Integrative Discovering Model (Fig. 11.2) to use for our own classes and presentations and have further adapted them for this discussion.

Transformative learning theory has evolved since Mezirow first proposed it, and scholars have elaborated upon it (Cranton 2006; Taylor 2007). At its core, however, transformational learning occurs when an individual's frame of reference—his or her paradigm—shifts to become more "inclusive, discriminating, open, emotionally capable of change, and reflective so they may generate beliefs and opinions that will prove more true of justified to guide action" (Mezirow 2000, pp. 7–8). In *Transforming Work,* we describe how transformative learning (TL) theory undergirds the discovering process. Briefly, Mezirow suggested that learning might be the result of deliberate inquiry, which he called intentional; a by-product of another intentional learning activity, which he called incidental; or assimilative, which he said was mindless (Mezirow 2000).

For our model, we modified these to say that transformation—or what we have called discovering—may be *imposed*, that is, it happens to us, or *intentional*, that is, it happens because of us. We are often shocked, and our worldview is irreversibly changed when difficulties we did not expect—a change in job status, a sudden and major health problem, or loss of a spouse, as examples—come our way. Those experiences are imposed—they happen *to* us—often very painfully

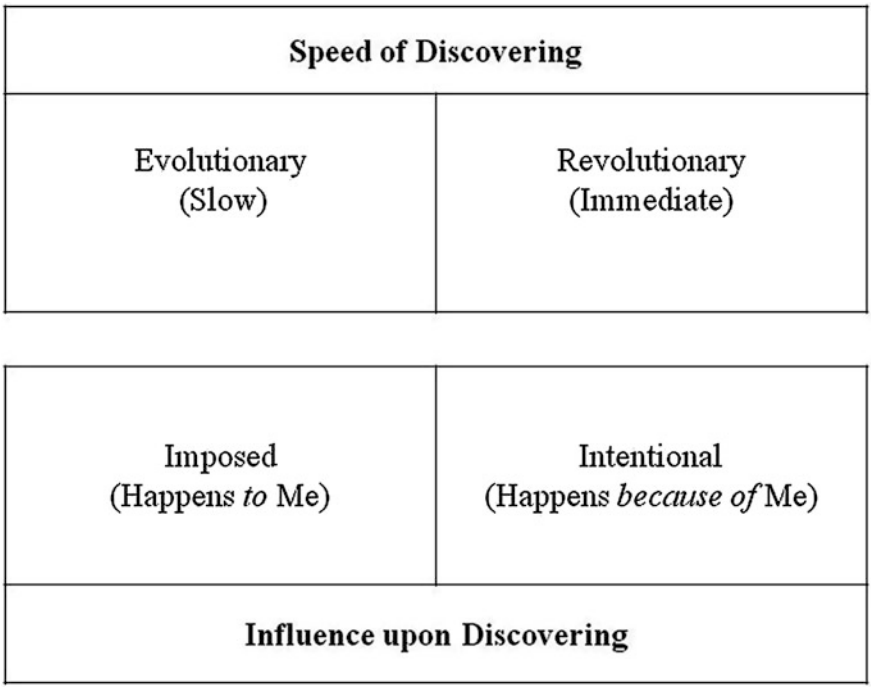

Fig. 11.1 Discovering Model (Adapted from Kroth and Boverie 2009)

and cause us to rethink what we have believed to be "truths" about our careers or even lives.

Alternatively, we can be intentional about discovering by doing something different, learning something outside our experience, or getting to know people who we would not run into normally. Ibarra (2003) says that we learn about and change our working identities as we start doing new things (crafting experiments), interact with different people (shifting connections), and rethink the stories we have about our lives (making sense). This intentional discovering process can be exciting and adventuresome. It has the positive feel of being something we can influence and a sense of building personal agency and self-efficacy (Bandura 1997). Both imposed and intentional discovering often occur for students on the "natural landscape" (Kasworm and Bowles, 2012, p. 389) of a higher education learning experience. Discovering is at the heart of faculty teaching strategies related to transformative learning.

Mezirow (2000) also said that transformations might be incremental or epochal. Incremental change occurs through a progression of smaller shifts in frames of reference. Cumulatively, over time, they might result in a significant shift in beliefs about the world. Epochal, in contrast, is "a sudden, dramatic, and reorienting insight" (p. 21). Our model uses Evolutionary to describe the incremental discovering process, and Revolutionary to describe the Epochal process.

In the case of work or career, the goal of personal discovering is for individuals to come to understand that about which they are passionate. That means learning what one loves to do, which might change, as Ibarra (2003), suggests, over time. In the case of higher education, discovering for students means coming to changed frames of reference via one or more learning contexts.

11.6 The Integrative Discovering Model

The Integrative Discovering Model (Fig. 11.2) is a simple, heuristical model primarily intended as a teaching and coaching tool for learning facilitators. It demonstrates the means of moving toward positive change by combining the two dimensions—speed of and influence upon discovering—into a four quadrant model which can be used to explain the processes of transformation, to discuss them, and to identify useful tools. Even Quadrant One, where imposed, revolutionary discovering can cause unexpected shock and trauma, often eventually results in positive change as people adapt their meaning structures, relationships, goals, and so forth, much as Mezirow (1991) describes the perspective transformation (PT) process to occur.

11.6.1 Quadrant One

Quadrant One is discovering which occurs through a swift, major change in one's belief system that is surprising and unsought. It is something we do not ask for and perhaps never believed could happen. It could result from being betrayed by a trusted friend or by a doctor telling you about a life-threatening health problem. In an education setting, an exercise could result in a profound insight about justice issues and specifically how one has blithely perpetuated inequity over the years. It can also be positive, as when struck by a completely new view of a co-worker after a surprising kindness. It can be particularly challenging, shocking, and traumatic, however, because it is *imposed and revolutionary,* unexpected, immediate, and dramatic.

11.6.2 Quadrant Two

Quadrant Two is what we often consider "aha" experiences to be. Discovering here is immediate and dramatic. It often results in a major change to a significant belief. Discovering here is hoped for and anticipated epiphany and enlightenment. It is *intentional* and *revolutionary*. It too can be traumatic but, unlike Quadrant One, here individuals are taking control of their learning processes and are seeking new insight.

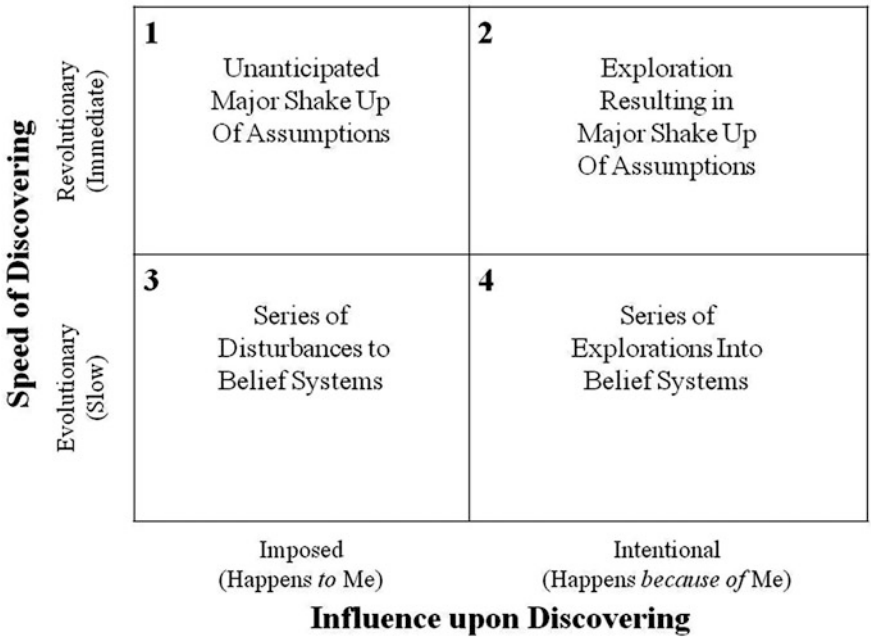

Fig. 11.2 Integrated Discovering Model (Adapted from Kroth and Boverie 2009)

11.6.3 Quadrant Three

Quadrant Three is discovering that happens over time, through smaller changes in one's belief system which are unintentional and perhaps go unnoticed in the short term. It might occur on the job as a person slowly overcomes an aversion to adopting new processes, or personally as an individual volunteers in the community. For students, perspectives can slowly take place over several semesters during the program of study by being exposed to new concepts and ideas. It is *imposed and evolutionary*, unexpected, and incremental.

11.6.4 Quadrant Four

Quadrant Four is discovering that happens over time, through smaller, progressive changes to one's belief system that is the result of *intentional* practice. Discovering here is hoped for and anticipated. For individuals, it might occur as a person goes back to school or begins attending church and intentionally reflects upon and deepens, changes, or modifies his or her views.

Each of the quadrants represents changes to frames of references that can be either traumatic and difficult or positive and affirming.

11.7 Discovering Practices

As discussed above, many have described processes for initiating transformational learning. Here, we discuss what we called discovering enablers in our book, *Transforming Work* (2001).

11.7.1 Learning

Faculty and students, good ones anyway, are always seeking new knowledge and are constantly learning from mistakes and successes. What can be missing, however, is learning about ideas, concepts, or practices outside one's immediate experience. Real, epiphanal learning often comes from looking for examples, models, theories, world views, successes and failures from outside the culture or region, or institution or arena, in which the learner or the faculty member is ensconced. Learning can be helpful even when traumatic. Observing others can cut the learning curve significantly (Bandura 1997) though there is always the danger of simply adopting the role model's belief systems, which would simply perpetuate a set of assumptions rather than learning by challenging them.

11.7.2 Experiment/Change

Trying new things is a discovering process. Immersion in a new culture through a service learning project or by taking classes abroad, working on projects with experts from outside the discipline or who hold views that are different from those of the dominant culture of the program, department, or field can make existing, outmoded paradigms apparent.

11.7.3 Reflecting

Higher education provides opportunities for reflection that are rarely matched in the working world. Reflecting is something we do not give enough credit to in this fast-paced, competitive world, but it is a real key to being intentional about transformational learning, thinking critically about the future and is an opportunity in coursework or advising practices. A likely way to experience imposed transformational learning—the traumatic kind people do not want—is to blithely operate under unspoken or unconsidered assumptions that turn out to be wrong.

11.7.4 Self-Awareness Assessment

When leaders deliberately and regularly seek feedback through 360° and other assessment tools, including using internal or external consultants or coaches, the discovering process is likely to be less traumatic than if they rarely get feedback about themselves. The same is true of both students and faculty. We have also conducted many feedback sessions for students, faculty, and employees or others using career or other assessment instruments, and the results can be enlightening as well. The point is that discovering is facilitated when people deliberately seek to become more aware of themselves, how they perceive the world and also how they are perceived.

11.7.5 Imagination

"Imagination," as we say in Transforming Work, "is the portal to an intentional future. If you can imagine something and can clearly envision it, then it is possible to see the steps required to achieve your goal" (Boverie and Kroth 2001, p. 111). Visioning and visualizing processes help to imagine both undesired and desired futures. Students can do this either through literature reviews, interviews, writing projects, or doing creative thinking with study groups or in cohorts.

11.8 Applications

Our model is useful as a lens through which students can view, reflect upon, and discuss their and others' transformative learning experiences. It shows students, for example, that they can be intentional about exploring and testing their assumptions. Helping them see the potential for an inquiring approach to life and learning that intentionally seeks to understand assumptions about the world, to learn more about them, and to build a healthy and ongoing approach for reviewing them, may be the most valuable insight the model can provide.

The Integrative Discovering Model can be used by itself in counseling, advising, or coaching sessions; it can be used as part of another transformative learning intervention, including it, for example, as part of a autobiographical writing exercise; it can be used with larger groups, asking them to look at various experiences, examining them through the lens of the model, and then looking at ways the group and its individuals can be more intentional about inquiry into assumptions.

The Integrative Discovering Model can be adapted to meet the needs of the situation. Different items can be put into each of the quadrants for examination. Also, if using the model to discuss or teach transformative learning, the model

itself can be problematized, revised, and examined. As a model, it is incomplete by definition. A class exercise could involve asking what is missing about it, or confusing, and what would make it more useful or explanatory.

Encouraging faculty and students to practice the enablers above, as well as other techniques described above, will help open "the portals of imagination". We believe discovering is the first and an important step toward passionate work and organizations. It is an essential part of what we as faculty, staff, and leaders do to facilitate transformative learning experiences in higher education.

Testing long-held, deep assumptions can be an emotional experience so it is particularly important to create the supportive social environment (Domain Three) Kasworm and Bowles (2012) suggest. Faculty, career counselors, and others have a responsibility to facilitate and guide transformative learning processes with special care. It is also important to realize that while we can provide assumption-testing experiences, these may or may not result in disorienting dilemmas and transformative learning. Every individual is unique and brings a particular set of assumptions, beliefs, and values to each learning experience.

11.9 Conclusions

This model only considers two aspects of transformative learning. It is a simple tool to help communicate, apply, and to study the transformational learning process. Those particularly interested in facilitating transformational learning opportunities in higher education might use this model for teaching, advising, and career exploration or as part of other transformative learning strategies they are using to discover new insights about themselves and the world.

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Chapter 12
Transformative Learning Theory: Addressing New Challenges in Social Work Education

Peter Jones

Abstract Transformative learning theory has emerged as an educational approach concerned with understanding and facilitating profound change at both individual and societal levels. The congruence between the features of transformative learning and the central concerns of social work education suggests that this approach to learning may be beneficial as the profession addresses new challenges, including engaging with the global environmental crisis. This chapter discusses the features of transformative learning and explores their application in integrating ecological concerns into social work education.

12.1 Introduction

Education for professional social work practice, like education for most other professional disciplines, faces a number of challenges as we move deeper into the twenty-first century. A rapidly shifting political, economic and social landscape means that many of the traditional social work concerns, such as poverty, discrimination and a concern for social justice, have either changed in nature, altered in the way they are manifest, or come to be understood in a new and globally related manner. New areas of concern have also emerged. For example, we have become increasingly aware of the connections between environmental issues such as climate change and human well-being, and begun to consider how social work as a profession might respond to this new and increasingly urgent challenge.

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In such a rapidly changing context, social work education can no longer rely on the traditional approaches and pedagogies that have served it well until now. Just as the practical approaches to professional practice must adapt to the changing landscape, so too must the underlying assumptions about learning and the educational processes and practices that accompany them change in response to the new challenges. What social work education requires is an approach to learning that allows it to continue expressing its core concerns for social justice and emancipatory practice, but grounds these in an understanding of how students learn and in particular, how learning which leads to more open and inclusive ways of knowing might happen.

Transformative learning theory, as developed by Mezirow (1990, 1991, 2000, 2003, 2012) and others (see, for example, Brookfield 2000; Cranton 2002; Cranton and Taylor 2012; Dirkx2006, 2012; Taylor 2006), provides such an organising framework for social work education, both as an explanatory theory of learning and as a guide for educational practice.

This chapter discusses the nature of transformative learning and explores the utility that such an approach may have for social work education. It then looks more specifically at one of the key new challenges confronting social work as a profession—how to expand the social work agenda to better include a focus on the natural environment and the impact of environmental issues on human well-being—and discusses the ways in which a transformative approach to social work education might facilitate deeper engagement in this area.

12.2 Transformative Learning

The concept of transformative learning has proven to be a very rich vein of scholarship in the field of adult learning, creating opportunities for wide ranging discussion and debate about the nature of adult learning and of its relationship to personal and social change (Dirkx2006; Marsick and Mezirow 2002; Taylor and Snyder 2012). At its heart, transformative learning theory is about the nature of change, and about the processes through which we produce a shift in the way we see and make meaning of the world. Mezirow, one of the leading proponents of this theoretical orientation, describes transformative learning as

> …learning that transforms problematic frames of reference—sets of fixed assumptions and expectations (habits of mind, meaning perspectives, mindsets)—to make them more inclusive, discriminating, open, reflective, and emotionally able to change (2003, p. 58–59).

Central to this theory is the concept of structures of meaning—the frames of reference which we acquire uncritically through processes of socialisation and acculturation and which are often distorted as a result of the internalisation of dominant sociocultural assumptions prevailing in our social context. Transformative learning is said to occur in those situations where we become aware of the

inadequacy of these frames of reference (often through an explicit, disorienting experience) and subsequently engage in critical reflection on their very basis. This critical reflection, a key process in transformative learning, may in turn lead to the awareness of alternative ways of thinking and to testing out such alternatives through dialogue and action (Mezirow 2012).

The second of the key processes of transformative learning relates to the role and importance of rational discourse or, as Mezirow has referred to it, critical-dialectical discourse (2003). Mezirow's argument here, building on the work of Habermas (1980), is that critical reflection on underlying assumptions, such as would lead to perspective transformation, is not a solitary activity but rather takes place, at least in part, through discourse. Discourse here refers to 'the process in which we have an active dialogue with others to better understand the meaning of an experience' (Mezirow 2000, p. 14). In particular, Mezirow is concerned with dialogue devoted to assessing contested beliefs, and it is through such discourse that the process of transformation is promoted, developed and enacted. As Taylor notes 'It is within the arena of rational discourse that experience and critical reflection are played out. Discourse becomes the medium for critical reflection to be put into action…' (Taylor 1998, p. 11).

Most transformative learning theorists agree that such learning can only be said to have truly occurred when it produces action based on the newly transformed frames of reference. For Mezirow, transformative learning is not necessarily linked directly and inevitably to social change. Perspective transformation may, for instance, relate to epistemic or psychic distortions, and while transforming these existing presuppositions will entail taking action in the social world, such action may relate more to individual behaviour than direct, collective social action (Mezirow 1991). However, and importantly, Mezirow argues that processes of transformative learning help to create the conditions for both individuals and society that are necessary for emancipatory social transformation and engagement in participative, democratic processes (2003).

While Mezirow is generally recognised as having initiated the discussion on transformative learning, it has indeed been a discussion, with many other theorists and practitioners critiquing and extending Mezirow's work or taking the concept of transformative learning in different directions with new theoretical orientations. In particular, most if not all of these approaches attempt to address the criticism that Mezirow's primary focus on cognitive-rational processes limits the ability of transformative learning theory to account for other forms of change and to facilitate shifts in other aspects of people's lives.

The Jungian or subjectively oriented approach to transformative learning provides a useful example of the way in which Mezirow's approach has been expanded. This perspective has perhaps been most fully developed and expressed in the work of John Dirkx (see, for example, 1997, 1998, 2001, 2012). Dirkx argues that his approach to transformative learning is consistent with and articulates the work of theorists such as Mezirow, but that his focus is on the experience of the learner's 'inner world' rather than cognitive, epistemic and sociocultural dimensions of the learning process (Dirkx et al. 2006). In describing this

difference, and the focus of his own approach, Dirkx notes of the work of Mezirow and others that their approach

> …represents the way of logos, the realm of objectivity and logic, the triumph of reason over instinct, ignorance and irrationality. [However,] Transformative learning also involves very personal and imaginative ways of knowing, grounded in a more intuitive and emotional sense of our experiences. This aspect of transformation, the way of mythos, reflects a dimension of knowing that is manifest in the symbolic, narrative and mythological (1997, p. 1–2).

Dirkx's concern is with the inner world and the ways in which this interacts with and shapes the learning experience. Dirkx is not referring here to aspects of our personal or individual world such as our particular beliefs, values or attitudes, but rather to the 'shadowy' inner world, 'that part of the inner world that volunteers questions without being asked, offers comments uninvited on our behaviour, conscious thoughts or our creations' (Dirkx et al. 2006). Dirkx contends that a theory of transformative learning must adopt a holistic approach that encompasses these aspects of the learner.

Alternatively, 'developmental' approaches to transformative learning are represented most clearly in the work of Baumgartner (2001), Daloz (1999, 2000) and Kegan (1994, 2000). Kegan discusses in some detail the importance of understanding what 'form' is actually transformed in transformative learning processes. He points out the difference between informational learning which deepens 'the resources available to an existing frame of reference [and] …brings valuable new contents into the existing form of our new way of knowing' (2000, p. 49), and transformational learning which involves not only changes in what we know, but also how we know. This, according to Kegan, might involve developing the capacity to move beyond concrete thinking into abstract reasoning, where one is situated within a pre-existing frame of mind and the other actually reconstructs the frame itself.

In developing his ideas around transformative learning, Kegan draws on concepts generated in the field of constructive-developmental psychology. As he notes:

> Adult educators with an interest in supporting transformational learning can look to constructive-developmental theory as a source of ideas about (1) the dynamic architecture of 'that form which transforms', that is, a form of knowing; and (2) the dynamic architecture of 'reforming our forms of knowing', that is, the psychological process of transformations in our knowing (2000, p. 53).

In this sense, Kegan is concerned with an epistemological view of transformation, an idea about human development that is concerned with the process whereby people come not simply to new ideas but rather to a new set of ideas about their ideas (2000). The importance of this epistemological approach to transformative learning is that it not only highlights the developmental processes involved, but also clearly limits those experiences that can be thought of as truly transformational. As Kegan notes (2000, p. 59), 'not every kind of change, even important change, constitutes transformation'. Kegan departs from Mezirow's description of the transformative process by widening the consideration of transformative experience

to a wider, life-span development, rather than focusing exclusively or primarily on adulthood. In this way, he argues that an understanding of the creative processes of development, which learners are engaged in throughout their lives, will greatly enhance our understanding of transformative learning.

Daloz (2000) similarly draws on constructive-developmental psychology in exploring transformative learning as an epistemological question, arguing that 'what shifts in the transformative process is our very epistemology—the way in which we know and make meaning' (p. 104). Daloz emphasises the importance of the interaction between learner and external context in determining whether the potential for development of more adequate frames of reference is realised or not.

A more recent theoretical development has seen a number of writers drawing on the work of Wilber (1996, 2000a, b) and his 'integrally informed' approach to psychology and society. Gunnlaugson (2005) notes that attempts have been made recently (see, for example, Cranton and Roy 2003; Cranton and Taylor 2012) to develop integrated models of transformative learning, bringing together perspectives from different disciplines and approaches. While recognising that there is great value in this, he argues that it simply does not go far enough and that these integrative frameworks 'fall short of being comprehensive, balanced and inclusive' (2005, p. 331). The significance of Gunnlaugson's use of Wilber is that it has the potential to greatly expand the focus of transformative learning from the rational-cognitive and affective-emotional orientations of previous theorists. The integral approach includes a concern with not just personal, but intrapersonal, relational, cultural, planetary and universal dimensions of being (Gunnlaugson 2005).

12.3 Facilitating Transformative Learning

This brief description of the nature of transformative learning, and some of the theoretical directions that it has moved in, points to its potential value as an educational approach, but says little about how such an approach might be operationalized. Indeed, it raises the question of how such transformative learning might actually be facilitated and what kinds of classroom relationships and practices might be involved in such a process. For Mezirow, his primary concern regarding this issue is to identify the conditions and capacities required for such transformations to occur. As he argues:

> Creating the conditions for and the skills of effective adult reasoning and the disposition for transformative learning—including critical reflection and dialectical discourse—is the essence of adult education and defines the role of the adult educator, both as a facilitator of reasoning in a learning situation and a cultural activist fostering the social economic, and political conditions required for a fuller, freer participation in critical reflection and discourse by all adults in a democratic society (2003, p. 63).

Mezirow argues that effective adult education helps learners to move towards positions of greater autonomy, a process which must include a focus on developing the skills and attitudes required for critical reflection. Approaches which may help

learners to move towards these objectives include those which are learner-centred, group-oriented, interactive and participatory (Mezirow 1997, p. 10). In particular, Mezirow emphasises the need for educators to draw on the experiences of learners themselves, and to engage in 'discovery learning', including the use of role-plays, simulations, case studies and group projects (1997). In utilising such techniques, educators are challenging students to begin identifying and questioning the assumptions of others as well as their own.

Cranton (1996, 2002, 2006) has written extensively on the processes involved in facilitating transformative learning. She notes that there are no teaching methods that guarantee transformative learning. However, she argues that an environment of challenge may be the common feature that underlies teaching for transformation. Cranton (2002, 2006) proposes a number of specific strategies designed to create such an environment and facilitate such learning. These include creating an activating event, encouraging the articulation assumptions, promoting critical self-reflection, promoting openness to alternatives, engaging in discourse, the revision of assumptions and taking action based on those revisions. She states, 'We cannot teach transformation. We often cannot even identify how or why it happens. But we can teach as though the possibility always exists that a student will have a transformative experience' (Cranton 2002, p. 71).

While Cranton's work reflects a deep engagement with Mezirow's conceptualisation of transformation, given the expanding understanding of transformative learning, and the range of approaches that have built on Mezirow's initial articulation, it is unsurprising that a diversity of approaches to facilitating such learning has also emerged.

Dirkx (2006), reflecting the Jungian approach to transformation, discusses a number of specific strategies to be used in group settings whereby emotion-laden images can be used to foster learning, including the use of active imagination activities, metaphors and analogies and working with such images through text. Dirkx notes that 'imaginative approaches to emotion and affect are beginning to supplement reliance on critical reflection and analysis as a means of furthering deep and potentially transformative experiences' (2006, p. 24).

Also approaching the fostering of transformative learning with a focus on the extrarational, Davis-Manigaulte et al. (2006) and Kasl and Yorks (2012) describe methods for promoting expressive ways of knowing. Particular strategies included the use of guided visualisations, group discussion and art activities such as drawing, clay work and collages. Davis-Manigaulte et al. argue that such activities can operate as a bridge between precognitive experiential knowing and rational knowing. Tolliver and Tisdell (2006) look at methods for engaging spirituality in the classroom, as a method for fostering transformation, while Lipsett (2002) draws on a cosmological, ecozoic approach to facilitating transformative learning in her account of the use of spontaneous painting as a pathway for such experience.

Adopting a different approach to facilitating transformation, Johnson-Bailey and Alfred (2006) employ a political framework as black women educators in their transformative teaching practice. They state that they try to 'provide a classroom setting where we engage with our students, our colearners, in critical reflection,

critical thinking, reframing questions, deconstructing issues, and dialogue and discourse' (Johnson-Bailey and Alfred 2006, p. 56). Brookfield (1990), also adopting an explicitly political approach, has explored the use of critical incidents to promote critical thinking and uncover learners' assumptions.

Many approaches to facilitating transformation have explored approaches that involve interrogating and creating text or other creative expressions. The use of popular and literary romantic fiction is discussed by Jarvis (2006, 2012) while Burke (2006) focuses on intensive writing designed to promote skills for critical thinking in writing and analysing text. Experiential learning portfolios are seen by Brown (2002) as a teaching strategy which may facilitate learner self-knowledge and Karpiak (2003) discusses the use of autobiography as a method for promoting insight and transformative learning experiences.

Looking in a different direction, Robinson (2004) discusses the use of meditation in facilitating transformative learning. Her autobiographical account not only acts as an illustration, but also a prelude to considering the use of meditation in the classroom. Robinson argues that in such classroom settings, 'the key is in building the discipline of concentration, of abiding with whatever mind-states may arise in a moment-to-moment way—in a state of presence' (2004, p. 115). In this manner, according to Robinson, students may become more aware of the extra-rational aspects of self and of learning, increasing potential for transformation.

The material presented above on the development and application of transformative learning theory points to both the diversity of theoretical orientation and practical application, and the emergence of some common themes and issues. While there is a lively discussion about the nature and boundaries of transformative learning, there is broad agreement that transformative learning is learning which provokes fundamental change in the way a person sees and makes sense of their world. Furthermore, there is agreement that transformative learning is a process which involves praxis, the enacting of personal change in the social world, whether through changed personal behaviour, participation in action for social change, or a combination of both.

Critical reflection and dialogue are generally seen as crucial aspects of the transformative process, even while the specific understanding of what these concepts mean and how they might be enacted remains open for debate.

12.4 Transformative Learning in Social Work Education

The discussion above explores the nature of transformative learning and discusses some of the ways in which writers and practitioners have suggested such learning might be facilitated. For a professional discipline like social work, the question then becomes to what degree might such an approach be useful in supporting professional education to meet the challenges of the shifting contextual landscape. One way of assessing the utility of any theoretical approach is to assess the degree

of congruence between the core assumptions and values of the theory and of the profession itself.

It is difficult to arrive at a consensus regarding the definition of social work. In part, this is due to the wide range of areas in which social workers practice and the diversity of social and personal issues with which social workers are concerned. However, it is also partly because of the dynamic nature of the profession as its role in society constantly changes and adapts in response to wider social and ideological forces.

The International Federation of Social Workers provides a useful starting point in its definition of social work, which states

> The social work profession promotes social change, problem solving in human relationships and the empowerment and liberation of people to enhance well-being. Utilising theories of human behaviour and social systems, social work intervenes at the points where people interact with their environments. Principles of human rights and social justice are fundamental to social work. (IFSW 2012).

While various definitions will reveal differences in the particular emphases placed on aspects of social work, there is probably broad agreement that social work is a profession which has faced, and continues to face, challenges in terms of its purpose, legitimacy, and its role in contemporary society (Ife 1997; Mullaly 2007). Inherent in most definitions, however, is a recognition that social workers can operate at a range of levels of social organisation, from the individual to the global, across a number of different domains, including family work, group work, community practice, social policy and education, and in a wide range of fields of practice such as child protection, income support, advocacy, community health, sexual assault and disability services (Alston and McKinnon 2001; Chenoweth and McAuliffe 2012).

Looking then, for points of congruence between the concerns of the profession and features of transformative learning theory, we can see that both transformative learning theory, in its many variations, and social work education are primarily focused on the interactions of the individual in the social world. Mezirow's cognitively oriented approach to transformation theory, for example, still has a primary social-relational focus as learners enact altered meaning structures in the social world, particularly through rational discourse and dialogue. For social work education, the acquisition of new skills and knowledge, and the inculcation into social work values and ethics, is primarily directed at equipping learners to become effective practitioners, and to deal effectively with the sociopolitical context in which practice occurs. That is to translate theory and knowledge into action in the social world.

Social work education and transformative learning theories are also both concerned with issues of change. This may involve change at the level of the individual as learner (for example, via perspective transformation) or the support and facilitation of change in others (as in many forms of social work practice). Both are also concerned, however, with broader change. The definition of social work provided above highlights the ways in which contributions to social change are

built into the idea of what social workers do and, indeed, are an ethical requirement in some cases. Similarly, most accounts of transformative learning argue that individual change must be linked, via praxis, with action and change in the social arena. The emphasis placed on the centrality of social change varies amongst transformation theories (Brookfield 2012), and this is also the case with social work education and practice, where critical/radical approaches place greater emphasis on this aspect of education and practice.

The inclusion of social change as a focus in both transformative learning theories and social work is indicative of the importance of the emancipatory tradition inherent in each. Both of these fields can be considered broad churches in the sense that they encompass theories and orientations with a range of ideological perspectives, but the importance of the emancipatory tradition in shaping each is undeniable.

Social work education is increasingly concerned with the centrality of experience as a source of learning, and has a strong tradition of facilitating such learning through field education experiences as well as experiential approaches to the classroom. Experience is also central to all transformative learning theories, which see experience as the starting point for learning and transformation. Discussions of transformative learning inevitably highlight the place of critical reflection and dialogue/discourse as essential components of the transformative process. The discussion of social work education, above, has also highlighted the ways in which these have become significant, in many ways essential, aspects of social work education.

In many respects, this reflects the fact that a great deal of social work education already incorporates some aspects of a transformative approach. Critical reflection, for example, has emerged as a core component and concern of social work education and practice (see, for example, Clare 2007; Fook and Askeland 2007; Gould and Taylor 1996; Napier and Fook 2000; Osmond and Darlington 2005; Redmond 2005; Sheppard 1998; Yelloly and Henkel 1995; Yip 2006). Similarly, dialogical approaches have been recognised as invaluable to social work education (see, for example, Ross 2007; Rozas 2004; Tsang 2007), and there is a continuing recognition of the importance of experiential learning and praxis (Anderson and Harris 2005; Carey 2007; Gibbons and Gray 2002).

There is an emerging sense, then, that transformative learning theories and social work education share a set of similar foundations, aims and processes. The level of congruence between these two areas argues for a further exploration of their relationship and the ways in which this might be used to both understand the experience of social work education and to guide its development and implementation. In particular, it is useful to consider the ways in which a transformative learning perspective might prove a valuable approach in supporting the social work profession's engagement with some of the key challenges facing the profession, including the role of social work in addressing the global environmental crisis.

12.5 The Ecological Challenge for Social Work

Over the last decade, and more dramatically in the last few years, increasing evidence of major problems in the earth's ecological balance, particularly relating to the issue of climate change, has seen the level of concern expressed about ecological issues increase dramatically. In the face of the overwhelming evidence of climate change, there would be few people in the world today who would argue that humans are having no impact, or only a benign impact, on the natural world. It is widely and generally agreed that humans have reached population levels and technological capacities that mean we are capable of destroying the fragile ecosystems which sustain us.

The fundamental conclusion drawn by much of the emerging evidence is that there is a crisis and we are the cause. Many recent reports also make the point that environmental problems impact inequitably on the world's poorest, and operate to further prevent many people from moving from poverty into more sustainable lifestyles (United Nations Environment Programme 2007). The prominence of environmental issues in recent domestic political debate in the UK, USA and Australia make it increasingly clear that the issue of the environment will continue to move from the periphery of economic and social policy to being one of, if not *the*, core issue. Such a conclusion recognises the centrality of the environment and the ways in which all aspects of human life are related back to the state of the global ecosystem. This acknowledgment also clearly links issues of global social justice with issues of the environment.

Given this level of recognition, it is an interesting and important exercise to think about social work's role in understanding and responding to the global ecological crisis, and to assess the ways in which the profession might build on existing theoretical and practice foundations to make a contribution to facilitating the social, economic and political transformations that will be required to move the planet towards a sustainable future. On a philosophical level, this will require a paradigmatic shift in the way social work as a profession understands its role and purpose as well as its conceptualisation of the relationship between people and the non-human world.

Yet, despite the increasing and urgent evidence of the ways in which the ecological crisis is impacting human well-being, and the obvious connections amongst the concerns of environmental, ecological and social justice, social work has generally been reluctant to claim, or even explore, a role in the task of addressing this crisis and finding ways to move forward. A review of the major social work journals (Jones 2011) reveals a paucity of literature linking the profession and the natural environment, and although social work programs may include a consideration of environmentalism as an ideology or a social movement, there are few examples of courses devoted specifically to linking the social and ecological in theory and practice.

Yet a concern with people's environment has been described as one of the distinguishing features of the social work profession, and it was in the very earliest

efforts at organised welfare that this became evident (Besthorn and McMillen 2002; Coates 2003). This concern is often referred to as social work's 'person-in-environment' perspective. Despite the use of the term 'environment' in this literature and in social work theory and practice, the relationship between humans and the natural environment has, to a large extent, been ignored or excluded from the ongoing development of ecological or person-in-environment models in social work (Besthorn and McMillen 2002; Coates 2003). Instead, a conceptualisation of 'environment' has been developed that is almost exclusively limited to a person's *social* environment, that is, a person's relationships with other individuals, groups, communities and organizations. This highlights the need for a profound philosophical shift if social work is to actively engage with the emerging issues of the environmental crisis (Dominelli 2012).

On a practical level, this philosophical shift will need to be facilitated by a pedagogical approach to social work education that is capable of challenging existing paradigms, critically evaluating emerging alternatives and encouraging action grounded in new ways of understanding the world. Transformative approaches to social work education may help us to move towards the necessary goal of equipping students with an expanded ecological consciousness and a clear sense of the interdependence of social and environmental issues.

In this way, the ecological crisis presents as both a challenge and an opportunity for social work. The challenge is to respond to an emerging dynamic, when that response may very well involve a fundamental reassessment of the values that underpin the profession. The opportunity is to do exactly this, in a way that builds on social work's existing foundations, and in doing so place the profession in a position to make significant and meaningful contributions to the creation of an ecologically sustainable future.

12.6 Transformative Approaches for Ecological Social Work Education

If we accept that social work may, and should, have a role to play in addressing the ecological crisis, then we are presented with the question of what is required, for the profession and for social work education, if this challenge is to be taken up. One answer is to simply 'add-on' the natural environment as one of the core issues with which the profession and professional education is concerned. To some extent, this is already happening, albeit slowly and with questionable impact, as mention of ecological sustainability creeps into social work mission statements (for example, de Silva 2006). However, there is a strong case to be made that such an approach will not produce the fundamental shift that is required if we are to grapple in a meaningful way with the ecological crisis.

The nature of the fundamental shift required is one that moves us away from the anthropocentric approach which has been a core characteristic of much social

work, towards a more ecocentric worldview. Ecocentric philosophies highlight the fact that humans do not stand above nature (Attfield 2003; Eckersley 1992). Such approaches point out that while technological development has greatly increased our ability to have an impact on global ecological processes, in every real sense we remain simply a single species in a complex ecological web, joined in myriad relationships with other species, and with non-living components and systems within the ecological whole. We are part of nature, not separate from it. It is our perceived separation from nature, a form of environmental alienation, which lies at the heart of the ecological crisis. In this sense, it can be argued that we have lost sight of our place in the natural world and, perhaps most importantly, lost the sense of connection, of relationship to the other parts of the web. This matters because if we do not see or understand our relationship to something then it is easy to ignore the impact that our actions might have, and to not recognise or care about the consequences of that impact.

For decades, now environmental philosophers and ethicists have grappled with the nature and consequences of anthropocentrism and the merits and varieties of eco-centric alternatives (see, for example, Bookchin 1995; Paavola and Low 2005; Stenmark 2002). It would be a mistake, however, to think that the importance of environmental philosophy is restricted to abstract conceptualisations of our relationship to, and place within, the environment. In fact the fundamental, ontological assumptions that underpin these belief systems have direct and practical implications in many areas of our lives. The public policies developed by governments are shaped by particular ways of thinking about these issues, and these extend through areas that have direct relevance for social work, including the nature and orientation of economic, political, legal, health and education systems. Some commentators have argued that if the ecological crisis continues to deepen, such philosophical debate will be of direct relevance when considering the very nature of participatory democracy and authoritarianism (Dobson 2007; Low and Gleeson 2001). Consideration of this dimension alone, i.e. the links between ecology, public policy and democracy, should alert the profession to the need for an expansion of existing ecological approaches, and a deeper concern and engagement with issues of the natural environment.

While there are signs of a growing awareness within some areas of higher education of the need for such an expanded ecological knowledge and awareness (see, for example, Moody and Hartel 2007; Shephard 2008), there is as yet little evidence of such a shift within social work (for discussions of exceptions to this, see Coates 2003; Mckinnon 2008; Jones 2011). Yet outside of the profession, there are some strong arguments as to what is actually required, particularly in relation to the role that higher education must play. Capra (2002), for example, has described the process of increasing academic specialisation and noted the way in which this has served to alienate the social sciences from ‘the world of matter’ (p. xix). He argues that such a division will no longer be possible as, in the near future, all disciplines will need to become focused on the quest for ecological sustainability.

Similarly, Orr (1992, 1999) advocates for the importance of having educational systems that develop students' ecological literacy—the idea that we must reclaim and reconnect to our understanding of the natural world. He argues that the Western educational model needs to be changed if we are to address the ecological crisis. O'Sullivan (1999, 2002, 2012) has also approached the question of learning for ecological sustainability by engaging in a far-reaching and visionary articulation of a new form of education, one which he refers to as 'integral transformative learning' (2012, p. 173). The educational vision articulated by O'Sullivan is one that is profoundly holistic and integral. He argues that the features of such an educational approach will include an orientation to knowledge that is synthetic and holistic, that is time-developmental in nature, and that includes 'earth education', by which O'Sullivan means 'not education about the earth, but the earth as the immediate self-educating community of those living and non-living beings that constitute the earth' (1999, p. 76).

Building on similar arguments, but with a specifically social work focus, Besthorn (2002, 2003) is one of the voices calling for an ecological revolution in social work education. He argues that if the profession is to meet the challenge of the current crisis then social work needs to move towards a deep-ecological consciousness. Besthorn describes such a consciousness as converging along three dimensions: environmental awareness, spiritual sensitivity and political activism. Each of these dimensions is clearly interrelated with the others, but it is perhaps the first of these, the development of environmental awareness, or ecological literacy, where social work education has the greatest potential to build upon existing approaches, both theoretical and practical, and make a significant shift towards a more fully ecological orientation.

The importance placed on reflecting on fundamental assumptions as part of the process of developing and enacting a new world view makes transformative learning theory particularly important when considering the direction social work education may need to take if we are to develop a new, ecologically oriented approach to theory and practice. Mezirow has suggested that there are two key types of reflection involved in the transformative process, firstly, critical reflection of assumptions, or objective reframing, which involves critically reflecting on the assumptions of others, and secondly, critical self-reflection of assumptions, or subjective reframing, which involves critical self-reflection on one's own assumptions and in particular, the ways in which one's world view may be limited and distorted (Mezirow 2000; Taylor 1998).

Both of these forms will be critical to the development of an ecologically oriented social work. Encouraging students to critically consider the assumptions, values and beliefs of modernity, and the ways in which these are implicated in the current ecological crisis, will be an essential step in developing a new world view. Equally important, however, will be creating the space within which students can reflect on the ways in which the presuppositions of the dominant paradigm have shaped their personal world views and their own values and beliefs, particularly the way in which they see their relationship with the non-human world.

In pursuit of an expanded ecological consciousness, a central task for social work education will, therefore, be to break through the existing level of ecological alienation and encourage students to re-evaluate their relationship to the non-human world. Developing such an awareness of their connections to the natural world and of the nature and extent of the ecological crisis will, for many students, constitute a disorienting dilemma—a recognition that our old ways of thinking and acting are no longer sufficient and that we need to seek out new models and ways of being. Critical reflection on the sociocultural assumptions that have lead to the crisis, and the ways in which we have internalised these, will lead to a search for alternatives. The paths suggested by writers such as O'Sullivan and Orr, who call for the development of an expanded environmental awareness and ecological literacy, then need to be considered and assessed, and it is through critical-dialectical discourse that such assessment may occur. A task for social work education is, therefore, to create awareness of these alternatives but also to create the dialogical spaces in which students can openly engage in a critical assessment of their merits and validity (Jones 2011).

The emphasis on praxis is an important dimension of this theory when viewed in relation to the task of developing an ecologically oriented social work. Faced with the enormity of the ecological crisis, social work education must look to pedagogy with an explicit orientation towards change, both at the individual and social levels. Transformative learning approaches appear to offer just such a pedagogical alternative.

12.7 Facilitating Ecological Transformation in SW Education

The challenge for social work educators is, therefore, to integrate transformative learning theory with a range of existing methods focused on reflective, dialogic and experiential approaches, and to apply this theory and method to the development of ecological awareness and eco-literacy amongst students. In my own teaching practice, this process is often begun with an attempt at producing a disorienting dilemma—an experience that alerts students to the limitations of their existing frames of reference in relation to the environment. Challenging students on the nature and extent of their environmental alienation is often a good place to start. How many native plant species endemic to their region can they name? Who can describe both the location and process of sewage disposal in their community? Where are the boundaries of their local catchment area or bio-region? Such questions often reveal the poor levels of environmental literacy amongst students, but are most useful when followed by the question 'why do not we know the answers to these questions?'.

Challenging students' existing frame of reference can also be helped by getting them out of the classroom setting. In the course I teach on eco-social justice, we

often hold classes off-campus, visiting degraded waterways, revegetation projects, community gardens and suburban sub-divisions. In all of these settings, it is instructive to see students realise how much they do not know about both the natural world and our impact on it. The depth of this realisation is often apparent in students' reflections on the experience.

A wide range of activities can be employed to help challenge students' pre-conceptions and reveal blind-spots in their own knowledge and understanding. For many, such disorienting experiences are enough to open the door to an active and enthusiastic engagement in critical reflection on the assumptions inherent in our society and the connection between these assumptions and our own values, beliefs and experiences.

Developing forms of assessment that promote both objective and subjective reframing is also an essential component of a transformative approach to expanding ecological awareness. In various iterations of the eco-social justice course mentioned earlier, assessment has included autophotography, reflective learning folios and critically reflective autobiographies. All of these forms have the advantage of being able to incorporate critical engagement with conceptual material, such as a consideration of the foundations of modernity, with students' own lived experience. The most recent form in use in this course, for example, asks students to write an autobiographical piece (as overview, or focusing on critical incidents) which illustrates the degree to which the values of modernity have, or have not, impacted on their personal relationship with the non-human world. Based on the experiences of students involved with these tasks, such critically reflective processes can be very challenging but are also often rewarding.

Challenging students' existing beliefs, and facilitating reflection on the sources and impact of these beliefs are important steps in creating the potential for learning and change. There is a danger, however, that if the process stops there students may be 'stranded'—aware that their existing frames of reference are limited, but unclear as to how they might move forward. Creating safe and supportive spaces for dialogue and rational discourse then becomes an essential part of the transformative process. In particular, students need opportunities to explore and assess the validity of alternative ways of seeing and being in the world. Debates around our place on the anthropocentric–ecocentric continuum are often useful in this regard, as are visioning exercises that encourage students to imagine the possibilities and day-to-day realities of an ecologically sustainable society.

The transition from abstract concepts to practical action is also a crucial phase of the transformative learning process for the profession of social work and social work education. Students need to be given opportunities to take action to test out their newly expanded frames of reference. Various models of service learning could be applied here, including participation in environmental projects as part of course design, but where practical constraints make this difficult other approaches may be useful. In my experience, students are often simply unaware of the range of possible actions which they could take, as individuals and collectively, personally and professionally, that would contribute to the social transformations required if we are to address the ecological crisis.

Presenting a range of eco-actions, or socio-environmental strategies, at various levels of social organisation, and providing examples of practice and activism which are grounded in an ecological paradigm, gives students a starting point for considering what actions they themselves can take. This is also an important opportunity for educators to model their own eco-oriented practice, providing students with powerful examples of the ways in which an ecological orientation may actually manifest in the practice of a social worker. Considering the possibilities for action often leads students to testing out such action in their own lives, and importantly in their own practice.

While such actions may initially be small-scale and often individual in nature, this is an important step in testing out transformed frames of reference and of enacting change in the social world. Truly, transformative learning will also be characterised by persistence, and so it is encouraging to hear back from past students about the ways in which an ecological orientation has manifest in the professional practice. For example, describing her work in a migrant support program with an environmental focus, a social work graduate recently wrote:

> I am writing to tell to you all this because I never expected in my wildest dreams that I would get involved this much into environmental issues. I actually thought of the subject as a waste of time in the beginning. Now I am learning more and realise how crucial it is for community sustainability.

Hopefully, what these small steps represent is the beginning of the process whereby social work, building on its existing foundation of a concern for people in their environment, shifts from a thoroughly anthropocentric, modernist orientation towards an expanded ecological perspective. If social work is to have a role in addressing the ecological crisis, this shift will be essential.

12.8 Conclusion

Transformative learning theory suggests both a way of understanding the deep, often profound, learning experiences of adults who have been lead to challenge their own worldviews, and a pathway for educational practices designed to facilitate such change. With key elements of critical reflection and dialogue, and an emancipatory orientation that links individual and social change, transformative approaches to education seem particularly suited to the profession of social work—already characterised by a focus on these elements. The links between the two become especially salient when considering the challenges facing the social work profession as it moves into the twenty-first century, particularly those posed by the global environmental crisis.

To fully engage with, and address this issue, social work education needs to shift from its current anthropocentric orientation. Transformative learning provides an example of a pedagogical model that can be used in building the foundations of this shift in social work education, but only if the will to do so is present. In this

sense then, while a transformative learning approach will be invaluable in developing the theoretical and practical orientation required for an ecologically oriented social work education, the fundamental task is that of first recognising the urgency and validity that underpins this need.

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Part VI
Using Technology

Chapter 13
Technology-Supported Design for Inquiry-Based Learning

Philippa Levy

Abstract This chapter explores the role of digital technology in supporting higher education teachers to design for inquiry-based learning (IBL). It begins by introducing the idea of 'design for learning' and by summarising key features of IBL pedagogy. A pedagogic planner tool is appended to highlight considerations for IBL design. The chapter then moves on to review the findings of a research project that investigated university teachers' approaches to design for learning and their use of a computer-based design tool, the learning activity management system (LAMS) to create IBL learning designs. Using a qualitative research approach, the project identified variation in teachers' conceptions of IBL pedagogy and in their approaches to design for learning. LAMS, in the version used, was found to offer design affordances that are especially consistent with teacher-led, rather than student-led, approaches to IBL pedagogy. The issues arising from this research are of relevance to academic developers in higher education and to the further development and use of digital design tools for IBL.

13.1 Introduction

This chapter explores the role of digital technology in supporting teachers to design for inquiry-based learning (IBL) in higher education. The chapter begins by introducing the idea of 'design for learning' and by summarising key features of IBL pedagogy. Appendix presents a pedagogic planner tool that draws attention to considerations for IBL design. The chapter then moves on to review the findings of a research project, reported in more detail by Levy et al. (2009), which investigated university teachers' approaches to designing for learning and their use of a computer-based tool, the learning activity management system (LAMS), to create

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IBL learning designs. The issues arising from this research are of relevance to academic developers in higher education and to the further development and use of digital design tools for IBL.

13.2 Design for Learning

Design for learning is not a new concept and has historical roots in the field of instructional design (Britain 2004; MacLean and Scott 2011). The principle goal of design for learning is to engage students in meaningful and productive learning activity, mediated by tasks established by the teacher-designer. According to Beetham (2007), a learning activity is an interaction of learner(s) with other(s) and with an environment, digital or not, that provides access to resources, tools and services. It is carried out in response to a task that is aligned with specific learning outcomes. Tasks designed by teachers provide the stimulus for student activity, although in any particular context, inevitably, this is influenced also by contingencies that teachers cannot control (Ellis and Goodyear 2010). Design for learning can be seen as a form of situated action, influenced by the beliefs and values held by teacher-designers; it is an emergent, iterative process that occurs during, as well as prior to, the actual learning activity (Jones and Asensio 2002). When students are involved as co-designers of their own learning in higher education, the distinction between learner and teacher roles in design for learning begins to blur.

Since the late 1990s, the idea of design for learning has been adopted and developed by the e-learning research and development community. One key area of interest is in the role that digital technology might play in the creation of shareable representations of learning tasks, resources and teaching interventions, as vehicles for the development and dissemination of good pedagogic practice. In this context, definitions of design for learning (or, alternatively, 'learning design') vary. The UK Joint Information Systems Committee has described design for learning as 'the process of designing, planning and orchestrating learning activities' (JISC 2006). Beetham and Sharpe (2007: 6) offer a definition that excludes the element of orchestration: 'the process by which teachers—and others involved in the support of learning—arrive at a plan or a structure or design for a learning situation'. Another definition explicitly includes the aspect of description, seeing design for learning as, 'the planning and documentation of a learning activity, session or curriculum in advance of delivery' and 'a learning design' as the documented outcome of the design process (Falconer and Littlejohn 2007: 42). In this chapter, design for learning (and, interchangeably, learning design) is understood as the planning and representation of learning activity for any scale of learning event. It is worth noting the important distinction between design for learning as a general concept, and the IMS Learning Design specification that offers a standard language for the description of learning designs (Koper and Olivier 2004).

As discussed by Masterman and Vogel (2007), it is common for teachers in higher education to use general purpose software such as word-processing, mind-mapping and presentation tools to author designs for learning. Virtual learning environments (VLEs) also may be used as design environments (Vogel and Oliver 2006). However, in recent years, software specifically intended to support the creation, sharing and re-purposing of designs for learning has been developed. Britain (2004, 2007) provides an overview in which he differentiates between authoring software and integrated software. Authoring software provides design tools for learning activities that might take place online or offline, but that is not intended for use by learners during the learning activity. One example is the compendium LD system described by Conole et al. (2008). Integrated software (such as LAMS) offers combined authoring and 'run-time'—that is, learning activity orchestration, or implementation—functionality. Britain (2007) suggests that integrated design for learning software reduces complexity for designers but may also serve to constrain design possibilities if design and run-time functionality are closely coupled.

13.3 Designing Inquiry-Based Learning

Interest in strengthening the role of student inquiry in higher education is growing internationally. Studies have identified benefits relating to students' engagement with academic work, their subject learning, and their intellectual, professional and personal development (e.g. Brew 2006; Healey and Jenkins 2009; Justice et al. 2007; Lee 2012; Levy and Petrulis 2012).

Definitions and conceptions of IBL pedagogy differ. Perhaps IBL is best seen as a family of approaches in which student-led exploration, investigation or research drives the learning experience, and all learning tasks, assessments, teaching interventions, resources and environments are designed to support an emergent process of exploration and discovery. Students use the scholarly and research practices of their discipline to engage with authentic discipline-based or inter-disciplinary questions and problems. Productive IBL is generated by purposeful, creative engagement with well-designed inquiry tasks in a learning environment that provides an appropriate balance of challenge and support. Inquiry tasks may be less or more flexible, and small or large in scale. Students often work collaboratively and use digital technologies to interact with peers and tutors, access information, and produce and share outputs. They often are encouraged to share the results of their inquiries with peers and wider audiences.

Use of inquiry approaches in teaching typically reflects strong commitment to the educational values and beliefs of student-centredness and learner empowerment, with teachers aiming to encourage students to embrace a significant amount of responsibility for their learning. However, IBL can take a variety of forms to suit different educational purposes. For example, while some forms of IBL engage students with questions to which answers already exist, IBL often is conceived as a

means of engaging students with uncertainty and the contested nature of knowledge, and with authentically 'messy', open-ended problems. IBL that is oriented towards open questions and problems offers potential for productive interaction between research and teaching in higher education (Spronken-Smith and Walker 2010). At the same time, some modes of IBL are more teacher-led, in which the teacher sets the questions and offers a great deal of guidance on the inquiry process, while in other modes, students have more freedom to define and direct their own inquiries.

There is no single design protocol for IBL, but the point of departure typically is a question, whether formulated by students, teachers or others, or by negotiation amongst them. Questions may be generated from intriguing fieldwork or design problems, complex real-world case scenarios of relevance to professional practice, stimuli such as visual resources, or more broadly from already-established or new lines of inquiry within a research domain. Design for IBL normally is strongly process-focused even when the intention is to engage students with very specific content, in that it is students' engagement with the inquiry process that drives their activity. A key aim is to design conditions, in which students' inquiries are stimulated and can flourish, and in which students are guided and supported effectively to develop relevant competencies for inquiry (i.e. the scholarly and research techniques of the discipline) and learning skills in areas such as information literacy, reflection, technology use and group work. Designing for IBL involves incorporating the approach into the frameworks of wider curriculum requirements, establishing appropriate learning outcomes and assessments, creating or selecting tasks that will motivate and engage students, selecting or creating learning resources, and planning appropriate guidance and support. Laurillard (2012: 129) identifies the following as key design features of IBL design: negotiation of a task or question that will be appropriate for rehearsing students in the ways of thinking and practising in their field; selection or creation of the resources and task environment to be used by students; scaffolding and progressive 'fading' or decreasing of guidance and support during the inquiry process as students gain in expertise and confidence; provision of opportunities for students to test and adjust their developing skills and knowledge. Much design work for IBL entails planning and reflection prior to the learning activity, but design-in-action is also involved when teachers modulate their designs in response to the activity that takes place.

IBL frequently is seen as a form of active learning in which students carry out research-like tasks to explore and assimilate aspects of an existing knowledge base. But in open inquiry modes, IBL extends beyond learning (understood as individual conceptual change) towards and well into the realms of genuine scholarship, research and knowledge-building (understood, following Bereiter (2002), as a contribution to improved thinking or knowledge in a domain). In light of their research into the student experience of inquiry, Levy and Petrulis (2012) propose three fundamental design considerations for IBL: the epistemic orientation of students' inquiry (learning/knowledge-building); with whom primary responsibility lies for establishing the inquiry question or theme; and, the level and nature

of process support, or scaffolding, to be provided—that is, the guidance, structure and resources aimed at helping students to engage productively with the inquiry process and subject matter. Different approaches to designing progression in IBL through the levels of study include those that lead from 'inquiry for learning' towards 'inquiry for knowledge-building' at more advanced levels, and others that introduce students to open forms of inquiry early, at more introductory levels. Early opportunities to engage in inquiry that is strongly guided and scaffolded but that is open-ended in character, and for students to frame their own inquiry questions, may in some contexts yield significant educational benefits (Levy and Petrulis 2012). Appendix presents a pedagogical planner for IBL that draws attention to these, and other, key considerations for IBL design. Intended as a simple tool for use in practical academic development settings, it is organised as a series of questions for teachers to consider as they engage in the process of design, whether technology-supported or not.

13.4 Designing for IBL with the Learning Activity Management System

How might computer-based tools assist higher education teachers to design for IBL? As noted above, software has been developed specifically to support teacher-designers to create, share and re-purpose designs for learning. As the leading software of this kind, LAMS was selected for a pilot study that aimed to examine the issues raised by such a tool for the development and support of IBL practice. LAMS is an open-source tool that enables design, orchestration and sharing/reuse of sequences of learning activity, placing special emphasis on collaborative and group processes (Dalziel 2003, 2007). It is intended to foster activity-oriented design thinking for activity-focused pedagogy including, but not limited to, IBL; it is important to distinguish a design for learning system such as LAMS from specialist computer-supported inquiry learning software as described, for example, by van Joolingen et al. (2007). The visual, drag-and-drop LAMS design interface offers the user-designer a range of activity types (tasks) and the means to arrange these into sequences and embed, or connect to, relevant content and other tools and services. The designer can see the design from the students' point of view during the process of authoring. Drawing from the activity tools available, a simple LAMS sequence might, for example, start with small group discussion, followed by Web research and resource-sharing, followed by large-group discussion of the results in relation to material provided by the teacher, and end with individual reflection and note-making. Once learning designs have been created in LAMS, they can be run with students, using the same software, published online to a wider community and reused and adapted by others. LAMS has been developed through a number of versions since the study reported here took place using version 1. More recent versions have been oriented towards embedding greater flexibility

into design structures and optional de-coupling of the system's authoring and run-time aspects.

The questions explored by the pilot study were:

- What are higher education teachers' purposes and values in relation to IBL, and what approaches do they take to design for IBL?
- What are the affordances of LAMS as a tool for creating IBL designs, and for stimulating engagement with pedagogical values and practices associated with IBL?

One-to-one and (in one case) one-to-two interviews were carried out with twelve members of academic staff who piloted LAMS, with in addition, a series of focus group interviews involving thirty-nine members of academic staff in total. All but one of the pilot users were university teachers located in arts or social sciences disciplines (Education, Geography, Information Studies, Law, Modern Languages), the exception being from an applied science (Engineering). In predesign and implementation interviews, pilot users were asked to describe how they understood and approached IBL in their practice; how they usually approached designing for learning; why and how they planned to use LAMS in their pilot. Post-implementation interviews explored design and orchestration experiences and outcomes. Focus group interviewees were shown a selection of LAMS sequences that had been produced by pilot users and then asked to respond to a series of questions on topics relating to design for learning in their own IBL practice. In addition, LAMS sequences designed by pilot users were analysed, to identify key design features and patterns.

The study illuminated teachers' differing conceptions of IBL. Some of those who participated in the project aimed to engage students, through IBL, in processes that were very closely aligned with formal, discipline-based research practice. Others saw IBL as a more general process of critical questioning, exploration and investigation, encouraging 'inquiring' students to set their own learning goals, plan and direct their learning and reflect on outcomes. Teachers often identified the development of learner autonomy as central to their pedagogical purposes in adopting IBL approaches, describing themselves as facilitators of learning rather than as teachers or instructors. They most often characterised IBL in terms of open-endedness, providing opportunities for students to pursue different lines of inquiry with multiple possible outcomes. Teachers also emphasised a strong focus on developing students' learning and other transferable skills and metacognition through the process of IBL. However, while the teachers who piloted LAMS all indicated that they aimed to foster learner autonomy, some preferred quite strongly teacher-led approaches whereas others preferred more student-led approaches. They often explained their personal approaches to IBL pedagogy in flexible terms, saying that they would adopt different modes of IBL in different educational contexts.

These teachers typically were unfamiliar with the term 'design for learning' to describe the practice of planning teaching, or curriculum design, in higher education. They had not previously used LAMS or any other any digital design for

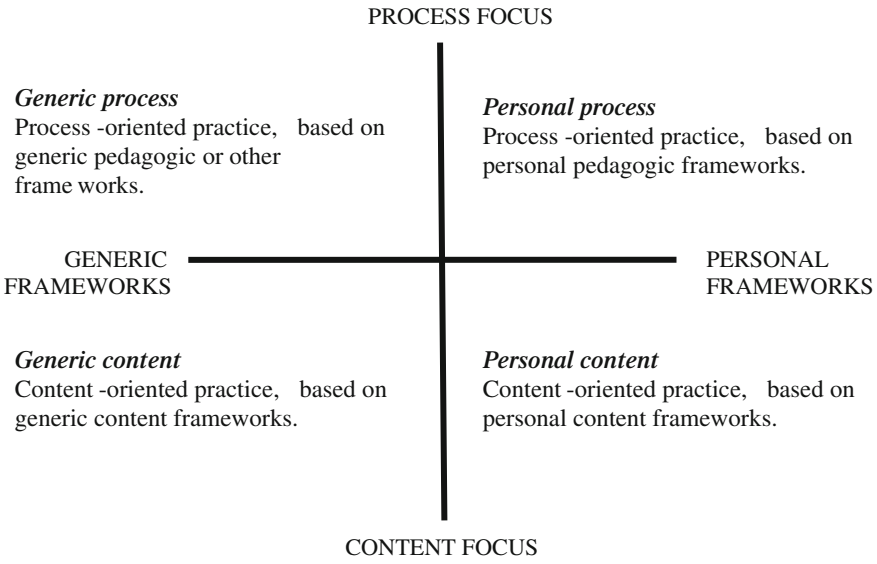

Fig. 13.1 Approaches to design for learning—adapted from Levy et al. (2009)

learning tool. They explained their general approaches to planning teaching as highly contextualised, with specific learning outcomes normally providing an initial point of departure and a wide range of contingent factors taken into account. Within this broad frame, two different dimensions emerged in their accounts of design for learning: a 'content/process' dimension and a 'generic/personal' dimension. The first of these differentiates, on a continuum, between design considerations oriented primarily towards engaging students in a process (activity), and those oriented primarily towards engaging students with content (subject matter). The second differentiates between design considerations that are inflected more by 'generic' pedagogic or disciplinary frameworks and models, and those that derive more from practitioners' own personal pedagogical goals and perspectives. Levy et al. (2009) present these dimensions as a matrix, thereby identifying four distinct modes of design for learning. Figure 13.1 presents an adaptation of this.

The teachers thought of design for learning as a practice with both content- and activity (process)-oriented dimensions. Either of these considerations could dominate their design thinking, although some saw these dimensions as inseparable and in dynamic interaction, and described design for learning as entailing movement back and forth between them. Most, but not all, of the teachers associated IBL with strongly process-oriented design. Some described designing for IBL largely as a matter of drawing on their own personal conceptualisations of the inquiry processes or content (subject matter) with which they wanted their students to engage. Others described drawing on different types of external, or generic, framework. Generic 'process' frameworks were revealed in descriptions of design

as the creation of sequences of learning tasks based on standard procedures embedded in disciplinary or professional practice, for example, when the task-sequencing elements of design were identified as a matter of 'step a' necessarily needing to be followed by 'step b' and so forth. None of these teachers described applying specific pedagogic models, such as Kolb's (1984) experiential learning cycle, Laurillard's (2002) conversational framework, or Garrison and colleagues' Community of Inquiry framework (Garrison and Arbaugh 2007). Generic 'content' frameworks were revealed in teachers' descriptions of design as a matter of planning the sequence of presentation of one topic after another, in line with generic knowledge structures of their discipline.

How were these approaches to design thinking affected, if at all, by the use of LAMS, and what were its affordances found to be, as a tool for supporting the development of IBL design? Affordances have been described as 'features perceived by an observer [that] create the possibility for a certain kind of behaviour' (Laurillard et al. 2000: 3). As outlined below, three main themes emerged in relation to these teachers' experiences of designing with LAMS: its support for rapid process design; for linear inquiry pathways; and for tight structure and teacher control.

Rapid process design: Pilot users did not approach experimentation with LAMS with the aim of implementing new approaches to IBL. Instead, they focused on ways in which use of the tool might fit with, and enhance, their existing approaches to IBL. Several used the tool to broadly replicate designs they had already used in face-to-face teaching, while others had new ideas sparked for small-scale inquiry tasks. Comparing LAMS with the university's VLE, some felt it moved the focus away from overloading with content and considered that this helped foster process-oriented approaches to design that they saw as more compatible with IBL. They usually described designing with LAMS as an iterative process in which it was very easy, for both less and more experienced learning technology users, to rapidly build up and change the sequence of tasks and to populate them with relevant content, links and instructions. In principle, they welcomed the possibility of reusing LAMS designs created by others, especially for cherry-picking inspiring design ideas for adaptation to their own subject teaching or for easy, off-the-shelf adoption of full sequences for teaching in generic skills and subject areas. However, in practice, these pilot users did not normally look at others' designs before creating their own. Although design with LAMS was perceived as quick and easy, some pilot users described experiencing their own initial responses to the system as mechanistic and unreflective. They emphasised the value of pedagogical reflection, discussion, guidance and exemplars in conjunction with experimentation with the new system. Custom-designed sequences used in introductory workshops provided a starting point for critical and reflective discussion. Dialogues that took place with academic development staff and other practitioners around the use of LAMS were identified as positive developmental stimuli, in particular, in making the concept of design, and task design, more explicit.

Linear inquiry pathways: All teachers saw 'linearity' as the principle characteristic of the way in which LAMS supported—and shaped—their design thinking

for IBL. They experienced a strong sense of LAMS as a tool for creating and reinforcing linear learning pathways and saw this as either positive or problematic, depending on different pedagogical purposes and context. On the one hand, they welcomed these characteristics as a means of reinforcing sequential inquiry processes and procedures. Teachers were especially likely to see advantages in using the tool to support activity in subject areas—such as Engineering, Information Technology, Languages, Maths, Nursing—in which 'generic' inquiry processes could easily be identified. They saw LAMS as especially suited to the design of bite-size task sequences that would scaffold students' engagement with larger, more complex inquiry processes. On the other hand, teachers saw linearity as problematic in relation to 'messier', iterative, more personal forms of inquiry. From this perspective, the design functionality of LAMS was perceived to be conducive of something akin to programmed learning or training. For example, the version used in the pilot did not allow easily for backwards as well as forwards movement through sequences, and 'branching' options to facilitate the creation of multi-level, in-parallel activity sequences were not yet available. These were seen as major problems by those teachers who approached IBL as a fundamentally iterative and 'parallel-processing' experience. Others saw the linearity of LAMS sequencing as imposing a serialist rather than holist learning style (Pask 1976), or as incompatible with the learning approaches of specific groups, such as postgraduate professionals. The value of LAMS in this version as a tool to design more complex, holistic, personal and extended inquiry processes, therefore, was questioned. Some teachers welcomed the prospect of the enhanced design features of the next version of the software as more promising for IBL, because of its greater potential for enabling iterative and multiple activity pathways through a task sequence.

Tight structure and teacher control. In general, teachers experienced LAMS as a tool for designing tight activity structures with relatively high levels of teacher guidance and control. They often identified tight structure as a positive feature in the context of introductory forms of IBL. However, the perceived in-built bias in the system towards tight activity structures was felt to be against principles of open-ended inquiry and higher-level student autonomy. Teachers questioned the extent to which the tool could help them facilitate students' ownership of their inquiry process. Some pilot users explicitly identified LAMS with behaviourist or didactic approaches to teaching, and analysis of the pilot sequences confirmed that LAMS was not used by these teachers to create strongly student-led, open-ended or extended approaches to IBL. Instead, the sequences generally were designed as small-scale initiatives in more teacher-led approaches to IBL. However, while perceptions of LAMS as affording tight activity structure and teacher control were generally to the fore early on in exposure to the tool, teachers' initial perceptions could shift over time. Moreover, some interviews and focus group discussions mooted the idea of 'students as designers' and of giving students opportunities to use LAMS to (co-)design their own inquiry activities. Teachers envisaged setting tasks designed to empower students to take greater control of their inquiries, whereby one group of students might design a sequence for another group, or staff and students would work collaboratively on design for learning.

13.5 Implications for Academic Developers and the Development of Digital Design Tools

This research reviewed above revealed aspects of higher education teachers' pedagogical values and purposes in relation to IBL and two main dimensions of their design for learning practice, labelled here as a 'content/process' dimension and a 'generic/personal' dimension. Teachers tended to associate design for IBL with relatively strongly process-oriented approaches, drawing on either more 'generic' or more 'personal' process frameworks to guide their design practice, as illustrated in the two upper quadrants of the matrix in Fig. 13.1. In foregrounding differences of emphasis in teachers' accounts of how they approach design, the matrix offers a conceptual framework that may be useful for further explorations of the nature and practice of design for learning in IBL and other pedagogical contexts, across different disciplines.

The research also highlighted pedagogical and design affordances of one tool, LAMS, in relation to IBL, as reflected in practitioners' responses to it. In the context of this study, for teachers with varying levels of familiarity with IBL, the features of LAMS offered similar design affordances: rapid process-oriented design practice; design approaches based on linear learning pathways; and design approaches based on relatively tight task structure and sequencing, and teacher control.

The study pointed to the potential value, for IBL design and development, of generic tools that can bring the concept of design for learning to the fore and support the practice of process-focused design. LAMS was perceived to be promising for some forms of IBL in a range of disciplinary contexts. However, it has been suggested that a margin of 'indirection' in teaching-as-design is important when development of student autonomy is desired (Goodyear and Ellis 2007). The characteristics of LAMS in the version used appeared less well-suited to flexible, open-ended and student-led forms of inquiry. These considerations suggest that for IBL, there will be value in developing design tools that provide for a high level of flexibility in relation to pedagogical choices about the extent of structure and control of students' inquiry processes, so that the balance of constraint and freedom may easily be adjusted by teacher-designers to suit the circumstances of different educational contexts, including different disciplines and levels of study. The project also suggested that technology-based design may bring a risk of engaging a somewhat mechanistic response. While wanting tools that would be easy to use, teachers were concerned about a reductive impact on practice. This reinforces the importance of supporting teachers to 'step back' during the design process to explore underpinning pedagogical purposes and values, for example through interactions with academic developers and peers, and provision of pedagogical guidance resources.

The potential of LAMS was not fully explored in the study, since the focus was on initial encounters and experiences of the tool rather than longitudinally on experiences over time. However, as Masterman and Lee (2005) also found, use of

the tool per se was not associated with strong developmental impact. In particular, it was shown here to have (in version 1) little articulation with, or stimulus for, ideas, values and practices that represent arguably the most empowering forms of IBL pedagogy (Hutchings 2007). Nevertheless, a generic design for learning system such as LAMS may well have potential to facilitate the design of more transformational forms of IBL. The fact that LAMS in the version piloted did not tend to orient pedagogical thinking and practice in the direction of strongly student-led pedagogies is not only a consequence of its features but also of the pedagogical mindsets and other factors brought to bear on its use. Affordances are relational and context-sensitive, rather than inherent. As observed in the study, when teachers had opportunities for pedagogical reflection and discussion, they did identify ways in which LAMS task sequences might be designed to encourage empowering modes of IBL. The study illustrated the importance of teachers with interests in IBL having exposure to a wide range of exemplar designs, including designs based on loosely structured and student-led approaches.

The project reviewed here explored design for learning mainly from the perspective of the teacher-as-designer. However, in the context of IBL, which places emphasis on learner autonomy, it would be useful to explore how students themselves might use design for learning tools and to investigate the issues relating to this. For example, is there a case, as is suggested by Levy et al. (2009), for the development of explicitly 'student-facing' digital tools that assist students to design, manage and adjust their own inquiry processes, and to use design representations as resources for reflection and sharing with peers, thereby supporting metacognition? If so, the findings of the study reviewed here indicate that such tools would need to include highly flexible research planning features, and perhaps offer integrated guidance on design for learning from the student perspective. The kinds of tools envisaged would also serve to support the development of students' digital literacies for learning in the fast-moving digital resource environment of contemporary higher education.

13.6 Concluding Remarks

Technology-supported design for learning tools and environments offer support for the development of professional practice in higher education teaching and a means for teachers to participate in sharing and refining good practice within professional communities. Interest in teaching-as-design, and in using digital technology to capture, represent, reuse and share pedagogic design ideas, including in the form of structured 'design patterns' as well as individual learning designs, is growing (Goodyear and Retalis 2010; Laurillard 2012). Laurillard envisages teaching communities in which teachers 'enact design science as part of their normal professional practice, and have the means to act like design researchers themselves, i.e. documenting and sharing their designs' (2012: 7). Recent initiatives in the UK include the development of Cloudworks, a social software environment for

community-oriented learning design sharing and reuse (Conole and Culver 2010), and the development of the learning design support environment (LDSE), which includes an interactive support environment called the Learning Designer that interfaces with LAMS (Laurillard et al. 2013).

The concept of design for learning emphasises the role of activity in the experience of learning and of task design in the practice of teaching-as-design. The research reviewed in this chapter highlighted the potential value of easy to use digital design tools in helping to generate and share creative designs for IBL. The study discussed in this chapter was small-scale and exploratory, and so there is a need for further work to test its findings and implications. However, it suggested a number of considerations for academic developers and for developers of computer-based design for learning systems. These include the risk of fostering inflexible or mechanistic conceptions of inquiry, teaching, and learning, and the need for design tools, and associated community and institutional processes, which help to engage teachers in imaginative and critically reflective approaches to development and innovation in their professional practice.

Appendix: Inquiry-Based Learning Pedagogic Planner (Adapted from Levy et al. 2010)

Designing for IBL	Questions for the teacher-designer to consider
Intended learning outcomes	• What are the intended learning outcomes of this inquiry?
	• Will students use inquiry solely to engage with existing knowledge ('inquiry for learning') or also to generate, potentially, new ('inquiry for knowledge-building')?
	• What will be the balance between subject-matter outcomes and process outcomes (e.g. inquiry process competencies)?
	• Will students play a role in determining learning outcomes?
Students	• What relevant subject and process knowledge and skills will students bring to the inquiry? How do they understand inquiry and research in their discipline, and their own roles as student researchers?
	• How might IBL challenge them, e.g. in relation to their beliefs about their role in learning and knowledge-building, their self-confidence, and their existing subject-matter knowledge and inquiry skills?
	• What are their likely needs for support and guidance, in relation to both subject matter and the inquiry process?
Inquiry theme	• What will students explore? How will their inquiry relate to the curriculum?

(continued)

(continued)

Designing for IBL	Questions for the teacher-designer to consider
	• Will there be a link between students' inquiries and their academic teachers' research interests? If so, will this link be made explicit?
Inquiry question	• What will the stimulus be for the inquiry (a question; a scenario; a problem; an image; an artefact; a discussion; something else)?
	• Will the question be open-ended, or is the answer already known (to the teacher)?
	• Who will establish the question—the teacher, students, someone else?
Inquiry process	• What is the appropriate scale and timescale of the inquiry?
	• Will the process be tightly or loosely structured? A step-by-step sequence of activities, or a more flexible, emergent process? More strongly teacher-, or student-designed?
	• Will students have choices in deciding how to approach the inquiry?
	• Will an established pedagogic framework or protocol be used to structure the process? How closely will it follow the pattern of research practice in the discipline?
Tasks and sequencing	• What tasks will students carry out? How will they be sequenced?
	• What tasks will there be to help students engage with relevant theory/subject-matter (e.g. reflection; discussion; peer-to-peer information sharing; lectures; practical workshops; laboratory sessions)?
	• What tasks will there be to help students develop process competencies relating to their inquiry (e.g. in areas such as research methods, information literacy, group work, reflective writing, use of technology)?
Summative assessments	• What will be assessed (e.g. understanding of subject matter; inquiry understanding and competencies)? What will the assessment criteria be? Will students play a role in establishing these?
	• What form will assessed outputs take (e.g. completed worksheet; quiz; computer model or simulation; essay; report; film; poster; wiki; product design; journal article; other)? Will students play a role in deciding on outputs? Will assessment be of individual or joint/team work?
	• Who will assess (teacher; student peers; self-assessment; other)? How will summative feedback be given?
Information resources and technology, and other equipment	• What are the essential information/learning resources, equipment and other technology that students will need to conduct this inquiry?

(continued)

(continued)

Designing for IBL	Questions for the teacher-designer to consider
	• How will students access relevant information? What will be the balance between providing information to students and requiring students to seek and select information independently?
	• Will students be guided towards information on process issues and skills as well as subject matter?
Spaces	• Is there a need for a particular type of learning/teaching space during and outside of teaching 'contact' time?
Guidance and scaffolding	• How much guidance and scaffolding will there be, and will these be reduced as students become more experienced?
	• Who will be involved in guiding and assisting students (teachers; mentors; learning support professionals, e.g. librarians, technicians)? What will their roles be?
	• How and when will formative feedback be provided (e.g. by teacher, computer software) and at which stages in the inquiry process?
	• Will there be an element of partnership between students and teachers or others?
Peer to peer	• Will students work together? If so, when and in what way? Will there be a focus on building an 'inquiry community'?
Communication and dissemination	• Will students share the results of their inquiries with each other? More widely at department or Faculty level, or with a community beyond the university or college?
	• How will results be shared (on web, at an event, via presentations, posters, suitable peer-reviewed outlets, other)?
Design and evaluation	• How will you go about designing this IBL initiative? Will you use a design tool to assist with planning? Will you look at other teachers' learning designs for IBL and reuse or adapt them? Will you involve students as designers?
	• When you have developed and run this initiative, will you evaluate its effectiveness? Will you share your design, and experience, with other teachers?

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Chapter 14
Past, Present, and Future of Podcasting in Higher Education

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Abstract Podcasting has become a major phenomenon within both our society and our educational system, as is evidenced by the large quantity of scientific publications on the topic. However, the study of podcasting in higher education remains in its initial phase of study. The results of research on podcasting are notably diverse and are even occasionally contradictory. Thus, this chapter performs a thorough review of the literature with the objective of developing a podcasting model that can establish the necessary guidelines for the study of podcasting. This model is key to defining control variables for sharing and incorporating research results on podcasting. Finally, the chapter proposes a list of future lines of podcasting research based on the literature review and the proposed model for creating podcasts.

14.1 Introduction

In 2005, the editors of the New Oxford American Dictionary chose a new technological tool as the word of the year: podcasting (Skira 2006). Although the existing literature has identified a long list of uses and features of podcasts, much remains to be studied, particularly in the field of higher education. This chapter aims to provide an overview of how podcasting research has evolved in recent years, particularly in higher education, and to identify remaining gaps in the research on podcasting. In other words, this chapter intends to link current and

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future research on podcasting, attempting to unify the diverse perspectives that exist on the subject.

This chapter is divided into several sections. The first chapter introduces podcasting, how it works, its components, and how its definition has evolved in recent years. The second section lists and describes the aspects of podcasting that have been investigated and the results that have been obtained. As can be observed, the research focuses on very different aspects from distinct perspectives, sometimes arriving at opposite perspectives, despite having the same objective. The chapter concludes with a list of podcasting's main contributions to student learning. Based on this literature review and input from other areas of scientific research, such as communications or organizational behavior, a model is proposed for the creation of new podcasts that allows for a better fit among goals established by teachers, needs of students, and podcasts. Finally, the last section provides several conclusions that may be useful for those researchers and/or teachers who wish to investigate the use of podcasting in education further.

14.2 What Is Podcasting?

Meng (2005, p. 1) defines podcasting as "the process of capturing an audio event, song, speech, or mix of sounds and then posting that digital sound object to a Web site or blog in a data structure called an RSS 2.0 envelope (or feed). Using specialized news readers, users can subscribe to a Web page containing RSS 2.0 tagged audio files on designated Web pages and automatically download these files directly into an audio management program on their personal computer. When a user synchronizes their portable audio device with their personal computer, the podcasts are automatically transferred to that device to be listened to at the time and location most convenient for the user." However, nowadays, there are new kinds of podcasts: traditional podcasts, enhanced podcasts, and video podcasts, or vodcasting. The enhanced podcast is similar to traditional podcasts; however, this kind of podcast contains multimedia information, such as slides, pictures, images, photographs, short videos, and chapters that help users to increase their perception about the topic. Vodcasting is one of the latest innovations in the podcasting world where it exchanges the audio of traditional podcasts for video. For this reason, it is more usual to play this kind of podcasts on a laptop or on a PDA, with bigger displays than MP3 players.

The increase in the number of portable music players and podcasting has been very significant during the last few years due to five main factors (Campbell 2005): Internet activity is pervasive; the growth of broadband has been very fast; there is a widespread availability of the multimedia personal computer; the distinction between streaming and downloading of media content has begun to blur; there is a rapid adoption of portable MP3 playback devices. Podcasting offers some interesting advantages, compared to other technological tools (Donnelly and Berge 2006). The most important one is the capability for it to be used anytime

anywhere. In a society where time is the most essential resource, this characteristic has allowed podcasting to reach an exceptional position. The creation of small and portable MP3 and video players has allowed users to decide where and when they want to listen to podcasts, according to their needs. Moreover, podcasting provides another interesting advantage: Users can do other tasks (e.g., cooking, taking notes, driving, running, strolling, travel to work), while they are listening to them.

The results of this increase of podcasting are observed in many universities where podcasting has been implemented at institutional level (Lee et al. 2008). From 2002, Georgia College and State University have been introducing podcasting in some courses to include audio material. In 2004, Duke University distributed MP3 players to its 1,650 first-year students, preloaded with orientation information. Moreover, the servers of Duke University offer administrative and academic materials in digital format via iTunesU. Later, in 2005, Drexel distributed MP3 players with photo capabilities to its students in their first academic year. Other universities that have implemented podcasting at an institutional level are University of California, Berkeley, Princeton University, and Stanford University.

Nowadays, existing literature has identified three academic uses of podcasting (Donnelly and Berge 2006), which are to disseminate course content, to capture live classroom material, and to enhance studying. Moreover, MP3 players also offer other academic uses, such as recording field notes and supporting file transfer and storage. However, the initial research conducted on the use of podcasting had mainly focused on three educational areas: nursing education (e.g., Skira 2006), medical education (e.g., Savel et al. 2007), and geography education (e.g., Lim 2006); nowadays, we find much recent research on podcasting in the majority of educational sectors, such as engineering and management education (e.g., Berger 2007; Kao 2008; Nataatmadja and Dyson 2008; Palmer and Hall 2008). However, there have been very few published examples of podcasting in higher education sector to empower students and even fewer based around learner-generated podcasts. Much of this research is limited to the process of creation of podcasting and to some general results, without considering whether the use of podcasting fits the rest of materials on the course or the principles for good practice in higher education. Some aspects studied by this small number of publications are the motivation of students and their attitudes for using podcasting (Kao 2008; Nataatmadja and Dyson 2008; Shim et al. 2007), the improvement in the efficiency of lectures after listening to podcasts (Copley 2007), the difference between podcasts and traditional teaching materials in the learning processes (Copley 2007), and the production of podcasts by students to generate knowledge (Lee et al. 2008). However, the main usefulness of podcasting in higher education is still its ability to disseminate course content, as illustrated in iTunesU and Higher Education Podcast Repository (http://ed-cast.org/), which are the most important repositories of podcasts in education. The use of podcasting with other goals has not been completely developed, and there are still few empirical studies focusing on their impact upon the learning process of students (Heilesen 2010; Lee et al. 2009; Abdous et al. 2012). According to Jowitt (2008), the main features of podcasting are as follows:

1. Portability, flexibility, and convenience
2. Listening anywhere at any time
3. Multitasking while moving about
4. Easy Internet access when needed
5. Listening repeatedly
6. Controlling speed of playback
7. Automatic RSS subscription
8. Free and individual choice of what to listen to
9. Special advantages for auditory learners
10. Enhances services to distance and online students.

14.3 Benefits and Drawbacks of Podcasting

A review of the scientific literature published on the effectiveness and efficiency of podcasts within the educational community shows disparate results. As Heilesen (2010) notes, the number of longitudinal studies that analyze the learning effects of podcasting is scarce. Most studies have a time horizon equal to or less than a semester, making it difficult to assess the results obtained in the learning processes. Moreover, most studies are conducted at an undergraduate level (particularly in their initial phases), and the results should therefore be framed within this context; for this reason, caution is necessary when extrapolating these results to a professional or business level. Lastly, note that podcasting research is found in a large number of disciplines, such as languages, computer science, business, engineering, nursing, psychology, library sciences, and law. Heilesen (2010) lists the three most common ways that authors have evaluated the effects of podcasting on the learning processes of students:

Questionnaires, work groups, and individual interviews
Evaluating access to materials or assessing the outcome of students in the course
Controlled experiments in predesigned learning situations

Table 14.1 summarizes the main effects of the use of podcasting from empirical studies published. Heilesen (2010) groups the results of his literature review into two categories: studies that suggest that the use of podcasts has no effect on the learning process (or the results are inconclusive) and studies that propose that podcasting has positive effects.

14.3.1 Negative Results on Podcasting

We observed researchers that were skeptical about the utility of podcasting based on their results. For example, the quantitative and qualitative analyses of Cann

Table 14.1 Results of the main empirical studies published in scientific journals on the use of podcasting in higher education

Authors (year)	Benefits and drawbacks of podcasting
Campbell (2005)	Podcasting involves a massive decline in students' on-campus class attendance
Read (2005)	The main use of podcasting by students is to review the most important parts of on-campus sessions
Smith et al. (2005)	The benefit of podcasts is only significant when students are involved in their creation
Brittain et al. (2006)	Podcasts are a better tool for course content review, not for first-time study, than are textbooks
Abt and Barry (2007)	The use of podcasting provides little quantitative benefit over more traditional materials; however, podcasting can be useful in the development of generic skills if students are involved in its development
Brown and Green (2007)	Students mainly listen to podcasts through their computers or laptops
Cann (2007)	Podcasting is not popular enough among students; therefore, its benefit is not significant
Deal (2007)	Podcasts based on the dissemination of on-campus classes do not have significant utility for students
Fernandez (2007)	Podcasting involves a massive decrease in on-campus attendance by students
	Students always download podcasts immediately before examinations instead of doing so periodically throughout the course
Kurtz et al. (2007)	The use of podcasting can improve students' results on final projects
Malan (2007)	Students are enthusiastic regarding the use of podcasting; however, the use of podcasts by enrolled students provides little benefit in the learning process but becomes significant for those who cannot attend class or are not enrolled
Stolen (2007)	Podcasting offers the option to learn when students have the time and ability to do so
Evans (2008)	Students are more receptive to podcasts than to more traditional materials, such as textbooks
Carle et al. (2009)	The use of podcasting for storing and distributing class discussions improves the feedback that they receive
Fernandez et al. (2009)	The combination of different kinds of teaching materials (auditory, visual, and kinesthetic materials) allows students to improve and enhance their learning process
	The use of podcasts increases the sense of proximity between teachers and students, increasing students' motivation
Lazarri (2009)	The benefit of podcast use is only significant when students are involved in its creation
	Podcasts based on the dissemination of on-campus sessions have residual value
	The results of podcasting are different when applied to full-time and part-time students

(continued)

Table 14.1 (continued)

Authors (year)	Benefits and drawbacks of podcasting
Lee et al. (2009)	Students mainly listen to podcasts using their computers or laptops. As portable devices become more popular (e.g., players, mobile phones, tablets) for accessing course content, students will begin to utilize them for listening to educational podcasts
McKinney et al. (2009)	Podcasting only provides benefits if the students take notes and listen to the podcasts multiple times
Bongey et al. (2006)	Podcast use does not result in a significant decrease in class attendance
Heilesen (2010)	Podcasting improves the academic environment
Larkin (2010)	Podcast use does not result in a significant decrease in class attendance
Kemp et al. (2010)	As a review tool, podcasts decrease students' anxiety before an examination; however, their final examination scores do not improve
Traphagan et al. (2010)	Podcasting adversely affects students' attention levels in class
Kay (2012)	The results of the use of video podcasting are notably different and are not directly comparable
Kazlauskas and Robinson (2012)	Students prefer in-class sessions to podcasts

(2007) showed that podcasting is not sufficiently widespread among the majority of students; for this reason, it has not become popular among them, and they may reject it. The results of Deal (2007) also showed that podcasts based merely on the spread of attendance sessions do not demonstrate a significant utility in the learning process. These results coincide with conclusions made by Lazzari (2009), who observed that the distribution of material through podcasts to part-time students does not affect their learning and that the use of podcasting as a learning support tool is therefore pedagogically neutral. McKinney et al. (2009) found that the use of podcasting only helped student learning if they took notes and listened to the podcasts multiple times. Moreover, these researchers observed that it was necessary for the students to behave as if they were in a face-to-face class. In other words, podcasting was only efficient if the students utilized it in a context equivalent to face-to-face sessions. Campbell (2005) and Fernandez (2007) suggested that the increase in Web classes via podcasting could provoke a massive decline in attendance in face-to-face classes by students. Likewise, these researchers observed that students only downloaded occasionally the material during the course (particularly in the days leading up to evaluative acts) although lecturers uploaded the classes weekly. According to Traphagan et al. (2010), the use of podcasts also negatively affected the attention levels of students in class for reasons similar to those encountered in the delivery of transparencies used in class. According to their results, students decreased their level of attention due to their perceived certainty that they would be able to experience the benefits of attending class through podcasts.

In agreement with Roschelle (2003), every new generation of educational technology offers the opportunity to improve how teachers teach. However, Lonn and Teasley (2009) observed that most teachers who use podcasting have not changed their manner of teaching, as they merely upload their face-to-face classes to the corresponding repository, which has led many students to treat podcasts as transparencies (simple teaching materials for the review of content offered in class) instead of treating them as a new tool offering opportunities to build new knowledge. Palmer and Devitt (2007) indicated that podcasting is associated with passive learning (centered only on listening to content) against recent trends based on active teaching methodologies where the student is the central and active actor in his/her own learning process. McGarr (2009) designated this phenomenon as "the worst aspects of the transmission model of learning."

14.3.2 Optimistic Results on Podcasting

Similar to how we found a long list of authors skeptical of podcasting, we also found scholars at the opposite extreme who consider their experiences with podcasting successful. Duke University pioneered the use of podcasting when it provided free iPods to all students in 2004 to ensure that they could easily access all podcasts that were being developed at both an institutional and a course level. According to Read (2005), 75 % of the students interviewed declared that they had, at minimum, used subject podcasts at least once to play and review the most important parts of the on-campus sessions during their free time. An increase in the creation and dissemination of podcasts has subsequently been observed in various universities, including Stanford, MIT, Yale, and UC Berkeley. This increase has been accompanied and justified by the results obtained by a large quantity of scientific research on the subject. For example, Kurtz, Fenwick, and Ellsworth (2007) observed higher scores in their students' final projects after the use of podcasting. Lazzari (2009) found that full-time students' involvement in the development of podcast lessons effectively improved their learning experiences. Similar results were obtained by Smith et al. (2005). The results of Evans (2008) suggest that students prefer podcasts before consulting such traditional materials as textbooks or classroom sessions. Likewise, these students also suggested that podcasts were the most appropriate tools for reviewing content throughout the course, being favored over other more traditional materials and even their own notes. Brittain et al. (2006) present the same results, concluding that podcasts are a better tool for reviewing (not for initial studying) course content than are textbooks. However, more significant results were obtained by Barret et al. (2006), who used podcasts in cardiac auscultation training. In health training, Stolen (2007) argued that podcasting offers students the option and ability to develop when they have time and not when dictated by an academic calendar.

From a different perspective, Lee and Chan (2007) and Fernandez et al. (2009) show additional benefits of using podcasting. According to Lee and Chan (2007), podcasting can significantly reduce feelings of loneliness when studying, increasing

the sense of belonging to a group or community of students. Fernandez et al. (2009) suggest that the use of podcasts increases the sense of proximity between teachers and students, which accordingly increases students' motivation. Carle et al. (2009) obtained similar results for motivation and participation of students after introducing podcasts into a course. According to Lazzari (2009), podcasts created, edited, and delivered by students can be a form of developing teamwork, promoting collaboration, creating and structuring (through roles) group work, and developing a social network within a course.

14.3.3 Other Notable Results Concerning Podcasting

As is true in most areas of education, no aspect is completely black and white, and podcasting is no exception. Various studies on podcasting show that its use simultaneously demonstrates benefits and drawbacks. Abt and Barry (2007) observed that podcasts provide better benefits than other traditional teaching tools (e.g., textbooks) but that the difference between podcasts and traditional teaching tools was very small. Research conducted by Malan (2007) obtained interesting results: The use of podcasts was received by students in a highly satisfactory manner. Students also assessed positively the utility of podcasting in their learning process. However, Malan (2007) observed that the final benefit of using podcasts in a course was notably low, arriving at the conclusion that podcasting was mainly beneficial to those students who could not attend on-campus sessions or could not enroll. In contrast to the results of Traphagan et al. (2010), Bongey et al. (2006) and Larkin (2010) found that the use of podcasts did not involve a significant decrease in class attendance. According to Kazlauskas and Robinson (2012), the majority of students preferred on-campus sessions, for which reason the use of podcasting simply occurred when on-campus sessions could not be attended.

Brown and Green (2007) reported that the majority of students listened to podcasts using their computers or laptops, rather than music players (e.g., iPods). Lee, Miller, and Newnham (2009) replicated this research and obtained the same results. According to these researchers, this finding is observed because students do not perceive educational podcasts in the same way as music or audio to which they normally listen. Additionally, because all other course materials were available through a computer or laptop, students associated the learning methods of educational podcasts with computers and laptops. Lee et al. (2009) also suggested that as technology progresses and students can access all their materials through portable devices (e.g., players, phones, and tablets), the use of podcasts will migrate from computers to these devices. Kemp et al. (2010) observed that as a review tool, podcasts can decrease student anxiety before an examination; however, final grades do not significantly improve.

Piñeiro-Otero (2012) and Borges (2009) recently presented a compilation of the possible advantages of using educational podcasts for students. (1) Cognitive advantages: The use of podcasts is capable of enhancing student competency in

communication and personal relationships, collaborative learning and interpretation, analysis, and selection and distribution of content. (2) Student involvement: Performing activities with podcasts can promote independent learning. (3) Student self-management: Students must plan their work given the asynchronous nature of the podcast (in downtime and leisure). (4) Access to teacher directions: Teachers can offer the necessary guidelines such that students can listen to clarifications or explanations of classroom material at any time and place. (5) Continuity of study: Podcasts can improve students' ability to manage and utilize podcast content on a regular basis. (6) Comprehension: Given the possibilities for repetition, podcasts facilitate the comprehension of certain content while reinforcing learning of this content. (7) Anxiety reduction: Podcasts can decrease student anxiety regarding the content of a certain subject or at the time of evaluation, as the student is able to review these contents at any time.

Throughout the literature review, audio podcasts have not been significantly differentiated from video podcasts. Kay (2012) conducted a review of only video podcasts and obtained interesting results, grouped into four categories: reasons for utilizing video podcasts, attitudes toward video podcasts, behaviors of the students, and learning results. As Kay (2012) states, reasons for using video podcasting are diverse: review of course content before examinations, class preparation, clarifying explanations, note-taking, improvement in on-campus classes, choosing place and time to study according to the needs of the students, and even virtual attendance for classes that students have not been able to attend. However, reasons for not using video podcasts have also been identified: technical problems (e.g., file size, download time, unavailability of mobile devices, lack of knowledge of podcasts), lack of interaction, lack of knowledge of their existence, and excess of teaching material, which causes students to state that they were too busy to view them. From the perspective of attitudes, video podcasts have been described as enjoyable, motivating, interesting, and stimulating; at the same time, they are graded as useful, helpful, effective, very positive about creating podcasts, and easy to use. However, a number of students commented that they preferred increases in on-campus classes over increases in the number of podcasts. It is noteworthy that no study reported negative emotional attitudes in the use of video podcasts. Highly diverse results have been obtained on the behavior of students toward the use of video podcasts from studies showing a decrease in the number of students that attended class to studies demonstrating the exact opposite. The results same apply to their use. Various studies observed that the number of downloads, viewing of weekly podcasts, and students who utilized them was high, while another large number of other studies showed that students did not regularly watch the podcasts and simply used them right before final examinations. Finally, regarding learning results, many studies show that the use of podcasting positively affects study habits, leading to more independence, self-reflection, efficient test preparation, and better review. Moreover, students who viewed video podcasting obtained higher scores in tests than did students who studied by traditional approaches, and the students who studied by podcasting improved their teamwork, technology skills,

and teaching skills. However, numerous other studies show no significant impact of podcasting on learning, test scores, and target behaviors.

After analyzing the results obtained in prior investigations, we observed that podcasting is a concept, methodology, or tool sufficiently broad and flexible that the results of two or more studies cannot be compared until a framework for comparison has been established. For example, we cannot compare podcasts based on the simple recording of classes to podcasts used specifically to explain a concept. Likewise, podcasts based on the recording of classes where the majority of students regularly attend are not comparable to the recording of classes that students have difficulty in attending. Furthermore, several aspects have been identified in the development of podcasts that may not provide any benefit to students. Therefore, the development of a methodology is proposed for the creation, editing, and distribution of podcasts with two objectives: (1) to remove all elements of podcasting that, as detected in the literature, can be harmful to the student learning process and (2) to establish a reference framework that will later allow for the analysis and comparison of experiences performed with podcasts.

14.4 Considerations Before Creating a Podcast

Before introducing a methodology for the creation, editing, and distribution of a podcast in higher education, it is necessary to discuss and analyze certain aspects, which are detailed below.

14.4.1 Types of Podcasts

Voegele and Card (2006) identified three types of podcasting: administrative podcasts used to distribute, for example, general information, rules, and guidelines; special events' podcasts that broadcast lessons of guest lecturers, conferences, awards, and honors; and class podcasts, defined by their involvement in any learning process within a course. According to McGarr (2009), class podcasts can be subdivided into three categories: substitution podcasts, characterized by simply recording classes in the course or substituting them (e.g., Gannod et al. 2008; McKinney and Page 2009; Smith and Fidge 2008); supplementary podcasts, which offer summaries of classes or materials in addition to what is provided and discussed in class (e.g., Mathiasen and Schrum 2008; Nathan and Chan 2007; Edirisingha et al. 2007b; Bell et al. 2007; Maag 2006) elaborated by the same teachers or by other agents external to the course; and creative podcasts, created and edited by students (e.g., Earp et al. 2006; Frydenberg 2006; Lazzari 2009; Lee et al. 2008). This taxonomy is notably similar to that proposed by Hew (2009) who suggested the existence of lecture podcasts, supplementary podcasts, and student projects. Harris and Park (2008) spoke of the adoption of podcasting based on four

Table 14.2 Description of the taxonomy dimensions proposed by Carvalho et al. (2008)

Dimensions	Description
Type	Informative (concepts, analysis, synthesis, description of tools or equipments, reading of excerpts/poems, etc.)
	Feedback/comments (to students' assignments and group work)
	Guidelines (to fieldwork and to practical work; recommendations about studying, group dynamics, reflective learning, etc.)
	Authentic materials, such as interviews, news, and radio programming, etc.
Medium	Audio (the most common)
	Video (also called audiocast, enhanced podcast, vodcast, and screencast), which combines images and audio
Length	Short (1–5 min)
	Moderate (6–15 min)
	Long (>15 min)
	Note Podcasts should not take more than 30 min if conveying detail and facts. Long podcasts generally cause a loss of attention and a subsequent decrease in comprehension
Author	Lecturer
	Student
	Other (experts, local community, and representatives)
Style	Style is related to the degree of formality adopted
	Formal
	Informal
	Note A podcast should have a beginning, middle, and an end, three important parts in keeping students' attention. It is important to engage students and is better to keep content short and simple, and clear and concise Hendron (2008)
Purpose	Inform
	Analyze
	Develop
	Motivate
	Mediate for reflective learning
	Etc.

variables: teaching, service, marketing, and technology. Meanwhile, Kay (2012) suggested the existence of four types of podcasts: class-based podcasts, which involve recording entire classes (e.g., Heilesen 2010); enhanced podcasts, created based on PowerPoint with audio explanations included (e.g., Holbrook and Dupont 2010); supplementary podcasts, which aim to increase student learning through administrative support, actual demonstrations, class summaries, textbook chapters, or any other material that allows students to expand knowledge of the course topics (e.g., McGarr 2009); and worked examples' podcasts, which provide explanations of specific course problems (e.g., Crippen and Earl 2004). A more elaborate classification of podcasts is proposed by Carvalho et al. (2008), who suggested a taxonomy in which dimensions of type, media, length, author, style, and purpose are added. Table 14.2 shows a description of each dimension.

Zhang et al. (2006) suggested that when designing teaching materials with audio, it is necessary to decide whether it may be segmented, that is, if the material can be divided into smaller parts, each with its own significance, such that the user has an easier time searching for and displaying the necessary sections. In this sense, Fernandez et al. (2011) suggested that one of the main drawbacks of using audio and/or video material is that students have difficulty locating the sections that they want to review. At the same time, users cannot do a quick read of content as they can with a text. In this case, processing speed depends on the creator of the multimedia material.

14.4.2 Podcasting Applications in Higher Education

With podcasting, classes, interviews, and reports from workshops can be conducted and utilized for student individual learning, group learning, or any other need teachers may have (Lazzari 2009) without significant effort or technical skill. However, Brittain et al. (2006), Evans (2008), McKinney et al. (2009), Lonn and Teasley (2009), and Moss et al. (2010) showed that students' main use of podcasts is to review concepts and themes discussed in classes that they attended, rather than to assimilate new concepts or substituting concepts with sessions that they could not attend; however, many other applications for podcasting exist in higher education. Heilesen (2010) summarized the main uses of podcasting reported in scientific journals:

Replacing on-campus classes with podcasts and taking advantage of on-campus classes for more active activities, such as discussions, laboratories, or group work (e.g., Gannod et al. 2008).

Producing podcasts that describe only facts, theories, and methods to have more time in on-campus classes for in-depth discussions (e.g., Smith and Fidge 2008).

Visualizing real situations (e.g., Mathiasen and Schrum 2008)

Introducing concepts through discussion between two or more experts on the subject (e.g., Nathan and Chan 2007).

Interviews and discussions to solve problems (e.g., Edirisingha et al. 2007a).

An audiovisual course newsletter (e.g., Bell et al. 2007).

Delivery of student projects through podcasting (e.g., Lazzari 2009)

Creation of podcasts by students that summarize theory for their classmates (e.g., Frydenberg 2006).

14.4.3 General Aspects

Podcasting can be categorized as an m-learning strategy for teaching and learning; therefore, several concerns must be considered when using podcasts in higher education according to Flannigan and Calandra (2005):

Quality: While content is important in podcast development, it is also necessary to devote effort to technical quality, such as sound and image quality or content organization. It is necessary to remember that podcasts can be reproduced on many different devices with different characteristics.
Authenticity: Authenticity comes into play when thinking about who is making the podcast and why.
Freedom of Speech: Podcasting has many uses, ranging from simple explanations of a concept or descriptions of a situation to opinions of individuals or organizations. For the latter, the question of individual freedom of speech is especially relevant.
Technical Support: The use of podcasting implies the need for technology for its creation, storage (server), download (bandwidth), syndication, and maintenance. Moreover, a certain level of training is necessary for podcast creators and users. If a certain type of podcast is desired, podcast experts' help in editing will be needed.
Copyright: Often overlooked by many podcast creators is the need to request permission for the use of material, similar to music and images.
Censorship: Like many other course materials, podcasting is not regulated, and content may not be suitable for students.
Privacy: As creators and users, teachers and students should establish the privacy level of the material developed during the course, regardless of the creator.

14.5 Methodology for the Design, Editing, and Distribution of Podcasts in Higher Education

The creation of a podcast is divided into three parts: design of the podcast, which includes strategic aspects; editing, which consists of technical and technological paragraphs; and distribution of material, which is accompanied by other possible teaching materials. Figure 14.1 shows a simple representation of the phases and steps that should be followed when creating a podcast in higher education.

14.5.1 Podcast Design

As with most projects, design is essential and key to its success. A review of publications on podcasts shows that in the majority of instances, absolutely no comments are made on the design of the podcast, or it is discussed superficially. This fact leads many investigators to question the reason for such disparate results in the use of podcasting. Podcasting is ineffective in and by itself, as is the case with most teaching materials. To be effective, podcasting must be combined with

other materials within a teaching methodology and a specific context. The podcast's design aims to frame the podcast within a course to synergize with other elements of the student learning process and to prevent it from becoming a harmful element in learning.

In addition to creating a coherent podcast design, specifying its content in writing is recommended. In the same course, we can use different types of podcasts, but detailing the design will avoid confusion between them. Moreover, this approach will be a benchmark for improvement throughout the course or for future updates. The design of a podcast can be divided into three parts: (1) the general context of the course, (2) the essence of the podcast, and (3) the characteristics of the podcast. Each of the elements that should form part of the podcast design is described below and is accompanied by a detailed description of how to achieve it and a justification of its importance.

14.5.1.1 Course General Context

Teachers must not forget that a teaching podcast in higher education is an element that should improve student learning processes within a subject. Therefore, we must clearly and concisely establish the context where the podcast will be developed and used. For this reason, two aspects of the course are specified: course objectives and type of students.

Course Objectives

The objectives must be developed to state the type of behavior that students should have to establish that the objective was met. Bloom (1956) established the taxonomy for distinguishing three main domains: (1) cognitive (intellectual knowledge and skills), (2) psychomotor (physical skills), and (3) affective (feelings and attitudes). These factors were further subdivided to give rise to another series of objectives of increasing complexity. In higher education, we will focus on the cognitive aspect, which is divided as follows:

Knowledge: Recall data or information.
Comprehension: Understand the meaning, translation, interpolation, and interpretation of instructions and problems. State a problem in one's own words.
Application: Use a concept in a new situation or unprompted use of an abstraction. Applies what was learned in the classroom into novel situations in the workplace.
Analysis: Separates material or concepts into component parts so that its organizational structure may be understood. Distinguishes between facts and inferences.

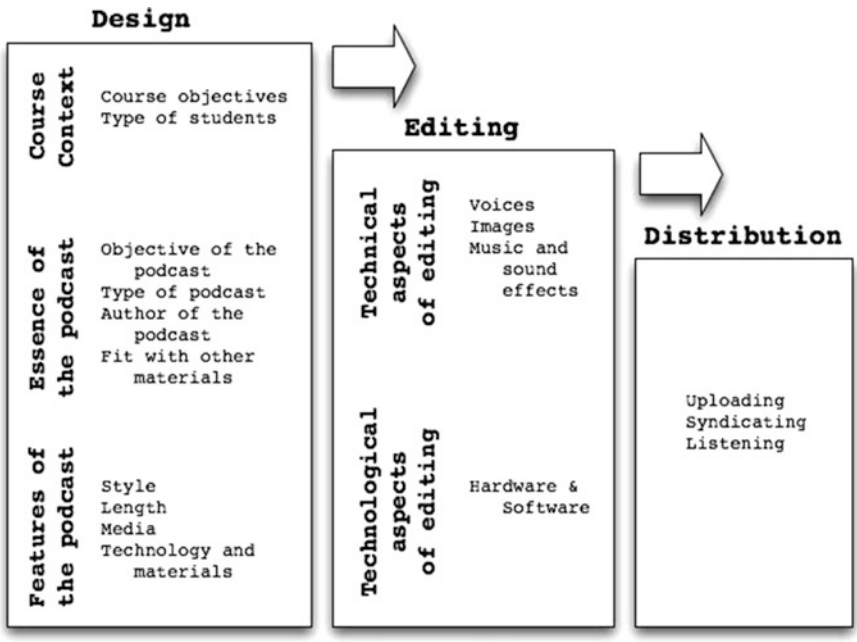

Fig. 14.1 General outline for creating a podcast

Synthesis: Builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure.
Evaluation: Make judgments about the value of ideas or materials.

Type of Students

As Lazzari's work (2009) demonstrated, the type of student affects the efficiency of podcasting. Therefore, we must identify the type of podcast that best suits the needs of the students. Students can be divided based on two criteria in the existing literature: face-to-face students, semi-distance students, blended students (e.g., Lazzari 2009), and undergraduate students and graduate students (e.g., Fernandez et al. 2009). This classification is justified in the next section.

14.5.1.2 Essence of the Podcast

After establishing the framework in which the podcast will be developed and utilized, the next step is podcast design.

Objective of the Podcast

Copley (2007) and Herrington and Kervin (2007) indicated that the use of any technology is more efficient when the objective is clear and rational to students and consequently to teachers. Therefore, it is important and essential to specify the objective of podcasting. The literature has shown that on few occasions, responsible teachers who introduce podcasting in their courses specify or explain its purpose (Lonn and Teasley 2009). Many possible objectives exist when introducing podcasting in higher education (e.g., Carvalho et al. 2008), which can be divided into four large groups segmented by two variables: podcasts that aim to substitute or duplicate an activity or material that already existed (e.g., recording of a class) versus podcasts that aim to supplement some material or previous dynamic (e.g., viewing an interview with an expert on the subject) and podcasts whose objective is centered on a highly particular aspect of the course (e.g., step-by-step description of a procedure) versus podcasts with more transverse content (e.g., reflection on the utility of the course in the workplace). The type of podcast should be consistent with the type of student enrolled in the course. Various studies suggest that the recording of entire classes is only significantly beneficial for those students who cannot attend class, such as semi-distance or blended students (e.g., Kazlauskas and Robinson 2012).

Type of Podcast

Based on the taxonomy developed by Carvalho et al. (2008), podcasts can be classified into four types.

Informative: concepts, analysis, synthesis, description of tools or equipments, reading of excerpts/poems, etc.
Feedback/Comments: to students' assignments and group work.
Guidelines: to fieldwork and to practical work, recommendations about studying, group dynamics, reflective learning, etc.
Authentic materials, such as interviews, news, radio programming, etc.

Author of the Podcast

Undoubtedly, the choice of podcast author(s) will be one of the most important decisions in designing a podcast. Likewise, this choice will be determined by the type of student and by the objective of the podcast, which was previously specified. We find three types of podcasts: podcasts created by teachers, podcasts created by students, and podcasts created by third parties outside the course. Podcasts created by teachers offer great opportunities because they allow for the creation of a type of material capable of explaining aspects that were difficult to explain until recently, such as methodologies or heuristics; these podcasts are able

to respond to objectives located at the base of Bloom's pyramid (1956). However, according to the existing literature, the most significant results in the student learning process occur when the student is placed at the center of the learning process and is involved in the creation of the podcast. This type of podcast (i.e., created by students) attains the objectives located at the top of Bloom's pyramid (1956). Podcasts created by third parties outside the course are often useful mainly as supplementary (nonessential) course material and as a way to connect to society.

Fit with Other Teaching Materials

Copley (2007) and Herrington and Kervin (2007) indicated that the use of any technology is more efficient when integrated into course curricula. The use of new technological tools for learning must involve the partial or complete redesign of the subject's functioning (Roschelle 2003), as the learning process not only consists of the sum of materials and activities but also serves as a process of interaction of all of these elements. If new material is simply added to a subject without considering the synergies that can occur with other materials and activities, a contrary saturation effect can occur. Under these circumstances, a sense of disheartenment and discouragement appear toward the subject due to an excess of material that the student cannot structure in a clear and simple manner. However, Lonn and Teasley (2009) note that the majority of teachers who use podcasting have not changed their teaching style, as they only upload on-campus classes to the corresponding repository.

14.5.1.3 Features of the Podcast

The next phase in the design of a podcast is its features: style, length, media and technology, and materials.

Style

Style is related to the degree of formality adopted. Edirisingha et al. (2007a) mentioned that to make podcasts more interesting, they may incorporate informal learning content such as people's experiences, and opinions. "A friendly tone invites students to learn and helps to build intimacy with the speaker" (Edirisingha et al. 2007a, p. 165).

Length

Carvalho et al. (2008) suggested three types of videos: short (1–5 min), moderate (6–15 min), and long (>15 min). According to their results, podcasts should not take more than 30 min if conveying details and facts. Long podcasts generally result in a loss of attention and a subsequent decrease in comprehension. Moreover, the results of Fernandez et al. (2011) suggested that moderate and especially long podcasts present other difficulties or drawbacks from the student's perspective compared to more traditional teaching materials. Students can perform a quick reading of a text and can even improve their reading skills for performing this task faster and better. However, the rate of reproduction of podcasts is determined by its creator, meaning that the student is unable to accelerate or decelerate the listening process and, consequently, learning of the material. Related to the above points, searching for a comment or quote in a text is also normally performed quickly and simply (for future searches, it can be underlined), whereas identifying a comment or quote in an audio or video podcast is more complicated, requiring listening to the entire podcast again. This fact can cause a low assessment of podcasting by students if they are not properly fitted with other course materials.

Media

There are two types of podcast: audio podcasts (the most common so far) and video podcasts (also called audiocasts, enhanced podcasts, vodcasts, and screencasts), which combine images (still or moving) with audio. Some examples of video podcasts are those created from transparencies, those based on recordings of computer screens (e.g., to explain the functioning of software), or those that simply record a real situation (e.g., a class or interview). Terenzini (1999) suggested that teachers should respect and consider students' diverse talents and ways of learning. Conner et al. (1996) stated that there are four types of students: (1) visual learners, (2) auditory learners, (3) kinesthetic learners, and (4) tactile learners. Whether it is more interesting to create an audio or video podcast depends on the objective of the podcast, the devices the students have for visualizing it, and the type of students.

Technology and Materials

Lastly, teachers must consider the technology, materials, and effort required for the creation of podcasts. If the podcasts are created by students, a tutorial should be considered, considering (1) where to acquire the necessary software for editing podcasts for each existing operating system (or at least for the three most common systems: MS Windows, Mac OS X, and Linux), (2) how to use this software, and (3) recommendations for editing (see the next section for more detail). Likewise, one ought to be aware of the kind of technical support that exists for editing and

distributing podcasts. Another aspect to consider here is the need to ask for permission to use other people's material, such as music and images, or to decide whether all material utilized should be open access. Along this line, the type of license for podcasts should be specified (e.g., copyright, creative commons). Finally, it is recommended that the podcast references all material used for its creation, such as books, articles from scientific journals, and Web pages.

14.5.2 Editing a Podcast

According to Lazarri (2009), aspects that should be considered when developing a podcast are (1) quality of the podcast (production environment: recording and editing), (2) quality of the product (content and communication style), and (3) quality of the distribution environment (paratext and management). To organize this chapter, it is proposed that podcast editing discusses the first two points (technological aspects of editing and technical aspects of editing), while podcast distribution involves the third point.

14.5.2.1 Technical Aspects of Editing

There are three key technical elements in the production of a podcast: voices, images (in the case of a video podcast), and music or other sound effects.

Voices

Because voice is the main communication asset in podcasting, various aspects should be considered when applying it. According to Lampton (2011), the speaker should use his/her natural voice, speaking instead of reading, demonstrating vigor, enthusiasm, and engagement with the theme. The importance of explaining concepts and ideas through phrases instead of long paragraphs should also be highlighted. O'Kelly (2011) suggested that the speaker speaks at a tempo that listeners can understand. Comprehension speed differs, depending on whether the podcast only includes audio or feature images. Comprehension speed is also not the same if the speaker is visible in the podcast. If the speaker is talking about complex concepts, it is important to give the listener a moment to grasp the material or provide examples to prevent silence. Exaggerating movements of the mouth and lips is also recommended to ensure clear articulation of points. To achieve correct diction and communication speed, O'Kelly (2011) suggested listening to voice recordings, as someone's voice can only be changed if the person knows how he or she actually sounds. Upon hearing it, the speaker can decide whether it is necessary to slow down, accelerate, speak more clearly, take a deeper breath, or change the tone of the voice. Lastly, O'Kelly (2011) recommended drinking plenty

of water and tea with honey. Staying properly hydrated is essential to achieving the greatest potential with voice.

Images

"A picture is worth a thousand words." This popular phrase often justifies the use of images in podcast design; however, it is necessary to consider several aspects before including them. Firstly, Li (1999) recommended that all elements be visible. Because video podcasts can be played on devices of different screen sizes (from iPods of 240 x 240 pixels to personal computers with resolutions of 2880 x 1800 pixels), the podcast screen size should be decided based on what type of screen (or range resolution) the listener should stream the podcast, and the images should be designed accordingly. Both Li (1999) and Bourne (2007) expressed that too many ideas should not be put in the same image because the listener should concentrate on the audio explanation more than reading and understanding the image. A common mistake made by inexperienced presenters is attempting to say too much. Likewise, everything in the image should be explained. Li (1999) suggested not including too much math in the images, as it is difficult to follow in presentations of medium or long durations. Lastly, Bourne (2007) encouraged that visual effects be used moderately and only when necessary to improve the efficiency of communication.

Music and Other Sound Effects

The use of music and other sound effects (Bourne 2007) can be a resource when creating podcasts. However, music does not always offer significant improvements in student learning; therefore, a thorough review of reasons for introducing these elements in podcasting should be first conducted. Excessive use of music or sound effects can make the podcast difficult to follow for the listener (Fernandez et al. 2009).

14.5.2.2 Technological Aspects of Editing

Given the technological advances, particularly in informatics, that society has undergone in recent years, most people have all of the necessary material for creating an audio and video podcast using a simple computer, regardless of the operating system. The existence of a large amount of open-access software for podcast editing and online tools for podcast distribution allows for the creation and distribution of podcasts in a simple manner with quite professional results. However, a certain level of support from technology experts remains necessary to achieve certain communication standards.

14.5.3 Distribution of a Podcast

The last step is the distribution of the podcast, which consists of three parts: (1) where to upload the podcasts, (2) where to syndicate the podcasts, and (3) how listeners download the podcasts. The first step is to decide where on the Web the podcast will be uploaded. There are several options: If only students from the course should have access to the podcasts, they can be uploaded to the course intranet. Otherwise, an external server must be established. Currently, a large number of free servers offer this type of service. The second step consists of deciding where the podcasts should be syndicated. Undoubtedly, the most well-known and popular place is iTunes (or iTunes University), which offers an extensive manual explaining how to create a channel and syndicate podcasts. However, other syndication repositories also exist, such as the Higher Education Podcast Repository. Lastly, listeners can access podcasts in many different ways, such as through direct links that appear in the course intranet, through a blog linked to the podcast (a common practice in the publication of podcasts), or through feed readers, such as iTunes, SongBird, Google Reader, and Juice. This last decision will largely depend on the students' knowledge of podcasting.

14.6 Discussion and Future Lines of Research

A review of the literature shows that the study of the efficacy and effectiveness of podcast use is still in its infancy. The results of many scientific studies on podcasting are inconsistent. As occurs in the majority of novel constructs in the field of social science research, early development is unstructured. This lack of organization complicates the possibility of creating a common knowledge base that allows for the discovery of all elements, as well as the progressive understanding of its efficacy and efficiency. In other words, we find ourselves in a situation of anarchical expansion of podcasting knowledge. Following several years of this type of expansion, we believe it is time to change the current situation and begin to investigate podcasting in a more structured form. This chapter attempts to link the current period characterized by this uncontrolled expansion with a new era where research is performed in such a manner that allows for the comparison of results and the creation of a solid knowledge base. With this aim, a review of the literature has been developed to justify the current research situation on podcasting and as a base model for the creation of podcasts in higher education. This model may also be adapted to other educational levels.

The objective of the developed model is twofold. First, this model standardizes the process of podcast creation for all teachers who hope to introduce it into their courses. In this manner, podcast creators will have all elements necessary for success. Moreover, the explicit definition of most elements that compose the model in scientific articles would allow for the comparison and aggregation of

results along the same lines. Although it seems excessive to include the majority of these elements in one article, it is the only way to acquire and subsequently to create a consistent knowledge base on the use of podcasting. In conclusion, the essential elements for analyzing results of podcast use are: course objectives, type of students, podcast objective, type of podcast, podcast authors, fit with other teaching materials, style utilized, length of podcast, media, technology and materials, voices used, images incorporated, and music.

As can be concluded from the above statements, considerable research and investigation into podcasting remains. Future research on the use of podcasting can be divided into three lines of investigation. The first relates to the results of podcast use. Various authors note that podcasting efficacy is not reflected in the final results of the course, despite positive feedback received by the students. Therefore, the results must be analyzed from four different perspectives: efficacy on course skills, effectiveness on course skills, generic skills (e.g., ability to speak in public and present results), and affective aspects (e.g., feelings and attitudes).

The following two lines of research are strongly related to the model proposed above. On the one hand, it is necessary to investigate how the various podcast elements affect results of podcast use (in any of the four aspects listed above). Topics such as type of podcast, author, duration, style, or media should be analyzed under the same control variables that can be extracted from the model itself. On the other hand, it is necessary to continue researching the context wherein podcasting is utilized. Some studies (e.g., Lazzari 2009) have suggested that the efficacy of podcasting depends largely on the type of student. Likewise, Fernandez et al. (2009) also observed the importance of podcasts' fit with other course materials and activities. It is possible that teachers' teaching methodology becomes a moderating variable of the efficacy and/or efficiency of podcast use. The quantity of podcast elements, the large number of contextual aspects of a course, and their interaction make the study of podcasting complicated and laborious. Nevertheless, the majority of researchers, even the most skeptical, recognize the need to continue researching this topic.

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Chapter 15
Blended Learning in English for Tourism: A Case Study

Yan Li

Abstract In an era of globalization and with the advancement of information technology, blended language learning plays an increasingly crucial role in higher education. Special attention should be paid to English for specific purposes (ESP) in this trend, not only is it an essential part of blended language learning, but also for the extensive use of technology in academic and professional communication. This study aims at establishing a blended teaching and learning model, named "Tour around the World," combining online and face-to-face instruction for English for Tourism course. A case study design using qualitative methods was taken in this study as the best means to collect in-depth data about design and implementations of blended language learning models. A total of 143 college seniors majoring in tourism management participated in the study. The findings of the study show that this model contributes to effective learning and student satisfaction as long as sufficient supports are provided.

Keywords Blended learning · Case study · Online activities · English for tourism · Face-to-face instruction · Learner autonomy

15.1 Introduction

Due to the rapid growth of the world economy and its increasing globalization, international communication is gaining ever more importance in professional domains. According to *China's Tourism Performance: Review & Forecast (2013∼2014)*, China has become the largest consuming country for outbound tourism and the third largest target country for inbound tourism (China Tourism Academy 2014). Thus, cultivating tourism professionals with a good command of

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English has become an essential goal for tourism education in China, and English for Tourism is just the course needed to serve this goal.

At the same time, information technology has gradually become a necessary part in foreign language teaching in Chinese higher education with the development of computer-assisted language learning (CALL) applications and networked environments. The Chinese government is calling for a new "computer-and-classroom-based teaching model," which should "be built on modern information technology, particularly network technology, so that English language teaching (ELT) and learning will be, to a certain extent, free from the constraints of time or place and geared towards students' individualized and autonomous learning." (Ministry of Education of the People's Republic of China 2007)

The applications of information technology are especially appropriate for English for specific purposes (ESP), because it focuses on learner needs, materials creation or adaptation, and a methodology suitable for target activities and disciplines. Through use of the Internet, ESP teachers and learners gain access to discipline-specific materials and situations. Technology not only provides learners with various learning tools and a gateway to the discourse community, but also provides opportunities for collaboration, the creation of virtual environments, and the fostering of learner autonomy. Yet for lack of support from teachers, online learning is not as effective as expected. Meanwhile, traditional classroom teaching, though having the advantage of easy communication between teachers and students, is faced with the problem of insufficient teaching content and opportunities for individualized learning. Therefore, blended learning has become the focus of researchers seeking an effective method of ESP education at college level.

Although teaching and learning theories and approaches that combine language learning with educational technology have been extensively studied in recent years, most studies either quantitatively compare the outcomes of blended and conventional learning environments or qualitatively describe certain aspects of the blended learning environment. While reviewing the literature, the author found a lack of theoretical and practical advice on designing blended learning environments, as well as descriptions of blends in ESP context. There is also a gap in the body of qualitative research that would help to explain what happens in the field of ESP.

To address this deficit, the author carried out this study, describing the blend from the course and context of ESP. It is hoped that other practitioners would adapt the blend into their teaching and learning practice, or benefit from the guiding principles and practical considerations in this study to design their own blended learning environments.

15.2 Literature Review

15.2.1 Definition of Blended Learning

Blended learning in higher education has been defined as

> A combination of technology and classroom instruction in a flexible approach to learning that recognises the benefits of delivering some training and assessment online but also uses other modes to make up a complet‘e training programme which can improve learning outcomes and/or save costs (Banados 2006: 534).

However, in ELT, blended learning is the term used to refer to any combination of face-to-face teaching with online and offline activities or materials enabled by computer technology. For instance, Neumeier defines blended learning as “a combination of face-to-face and computer assisted learning in a single teaching and learning environment” (Neumeier 2005: 164). And Stracke provides a similar definition in her study: “blended language learning—a particular learning and teaching environment, that combines face-to-face and computer assisted language learning” (Stracke 2007: 57).

15.2.2 Neumeier’s Framework for the Design of Blended Learning

The framework for designing and examining blended learning environment used in this study is suggested by Neumeier (2005) and is composed of six parameters: mode, model of integration, distribution of learning content and objectives, language teaching methods, involvement of learning subjects (students, tutors, and teachers), and location.

(a) Mode: According to Neumeier, the two major modes in shaping blended environments are face-to-face interaction and CALL interaction. Determining one lead mode is necessary in creating a very focused and structured learning environment. The amount of time spent in each mode and which components of the modes should be implemented are two other descriptors for this parameter.

(b) Model of integration: The sequencing of modes and their level of integration into the learning process shapes the character of the blended learning environments. The modes can be arranged in alternating succession with one another, or overlap/parallel each other. For example, the model can be an alternation of face-to-face mode and a CALL submode (such as email) or one CALL submode can be available throughout the course parallel to all other submodes. The degree of transactional distance is to be considered in designing the sequence. The primary goal is to minimize the level of transactional distance by ensuring that the learners do not feel isolated or

uncertain. Level of integration is related to the flexibility of the blended learning environment; that is, some modes can be of obligatory or optional use.

(c) Distribution of learning content and objectives and assignment of purpose: Learning content and objectives can be incorporated into the blended learning environments in a parallel or isolated way. Parallel incorporation allows both modes to be used for teaching and learning certain language skills. In isolated incorporation, the skill is taught and practiced in one of the two modes. The assignment of a specific purpose to an individual task can be achieved through most modes.

(d) Language teaching methods: According to Neumeier, teaching methods employed in the blended learning environment are influenced by self-access online material, the online tutor, and the face-to-face teacher. Methodology in CALL mode is limited in nature compared with the face-to-face mode which leaves more room for changes. Many blended learning environments try to counterbalance this restriction by employing communicative and individualized methods.

(e) Involvement of learning subjects (students, teachers, and computers): In blended learning environments, face-to-face interaction and computer-mediated interaction blend into each other. Interaction can take place around, through, and with the computer. Various cognitive and socioeffective processes are triggered exerting different influences on language learning. The learning subjects are faced with a much greater scope of roles as well, which require greater levels of autonomy. For example, students' role might change from a relatively passive one to that of an active participant; teachers may change from classroom teachers to online tutors. The issue of learner autonomy and motivation is central to the success of a learning environment. Neumeier suggests making use of Blin's "cultural–historical activity theory" (Blin 2004) as a framework in analyzing learner autonomy in the blended learning environment.

(f) Location: According to Neumeier, "Locations where learning takes place successfully are social and individual artefacts that are an integral part of a learning culture." (Neumeier 2005: 175) In a blended learning environment, learning may take place in traditional classroom or in some other place with the help of computers. Neumeier also calls for more research into the influence of different learning locations on the effectiveness of learning.

15.2.3 Previous Research on Blended Learning in General English Teaching and ESP

Research into CALL has shown that technology-enhanced or online language learning environments can benefit language learning and teaching in a number of ways. Murray (1999) showed positive impact of technology-enhanced simulation

environments on learner autonomy; Ushida (2005) found students' motivation and attitudes toward language learning positive and stable during an online language course; Blake et al. (2008) examined a hybrid language learning course of Spanish and found students' oral proficiency improved; Murday et al. (2008) showed a trend of increasing satisfaction in students and instructors with the online courses compared with offline (traditional) ones.

Technology, especially networking techniques, has provided invaluable tools for ESP. According to Warschauer (2002), the Internet can help students "network" into the academic discourse by providing students with computer-mediated communication within the discourse community. The Internet also provides ESP learners with unlimited access to authentic texts of various degrees of specialization, and Garrett (2009) emphasizes the design of appropriate tasks to work with the resources. The applications of Web 2.0 open up new opportunities for ESP learners to write, collaborate, and publish. Rueda et al. (2007) suggested focusing on electronic ESP literacy skills to help learners make good use of the Internet, through activities such as exploration, reflection, analysis, and interaction. Kuteeva (2011) found that wikis can help enhance students' awareness of audience, language form, genre, and text structure in EAP writing.

A large number of researchers conducted quantitative comparative studies of the outcomes of blended learning and traditional face-to-face learning. To name some of them, Chenoweth et al. (2006) investigated the effectiveness of online language courses and identified similar language performance in students of online courses with those of conventional ones; according to Harker and Koutsantoni (2005: 197), "the blended learning mode was much more effective in student retention" than in the distance learning mode in their English for academic purposes program, while students' achievement levels and satisfaction rates were similar in both modes; Scida and Saury (2006) also found no significant difference between students' performance in traditional modes and technology-enhanced modes; the US Department of Education (2010) carried out a meta-analysis research of 176 studies on distance and face-to-face learning, and they found that students in online learning conditions performed slightly better than those in face-to-face conditions. In an experimental study by Chen et al. (2004), they investigated the learning effectiveness, in terms of the form, function, and impact of interaction, of a Web-based EAP course. They compared the outcome of different tasks performed by different groups and found significant differences in language interaction for task completion.

On the other hand, qualitative studies which give more detailed descriptions of the blended learning environments are quite rare. Bañados (2006) described the elements of a blended learning model, issues about its implementation, and results obtained in a piloting study. Yet this study did not specify how those elements are integrated, or the percentage of time spent on each of them. Grgurović (2011) examined a blend of intensive English programs, combining face-to-face and CALL modes, and found all language skills could be successfully integrated into both modes. The blending model in this study was based on a framework proposed by Neumeier (2005).

15.3 Methodology

15.3.1 Research Design

Based on the results of previous research, the major purposes of this study were (1) to establish an effective blended instruction model, using the Internet as a complementary learning environment for an English for Tourism course, (2) to explore the effects of the blended learning model, and (3) to investigate the process ESP learners pass through as they learned to integrate new technologies into the ESP curriculum.

Two research questions that guided the inquiry in this study are as follows.

Question 1: What is the ESP blended learning model?

According to Neumeier (2005: 163), "course designers need a framework of parameters that help them decide on the individual, context-related implementation of BL." Thus, this research question can be specified into inquiring about the mode, model of integration, distribution of learning content and objectives, language teaching methods, involvement of learning subjects, and location in this ESP blended learning model.

Question 2: What are the effects of the blended model?

In particular, what are the learners' perspectives on the use of this blended learning model? What are the challenges and difficulties they are faced with?

A case study design using qualitative methods was used in this study as the best means to collect in-depth data about design and implementation of blended language learning models. According to Patton (1990), qualitative methods enable researchers to "study selected issues in depth and detail" (p. 13), and "the point of using qualitative methods is to understand naturally occurring phenomena in their naturally occurring states" (p. 41). The case under investigation here is a blended learning environment for an ESP course at an institution of higher education.

15.3.2 Participants

The study was carried out at Bohai University, a medium-sized public university in northeast China. It deals with *English for Tourism*, a compulsory course for third-year students majoring in Tourism management. The participants were 143 (111 female and 32 male) students enrolled in this course. Their age ranged from 20 to 23. They had completed 2 years of general English and basic theories in tourism management before taking this course. The students were divided into 3 classes. Among them, students in Class 1 (number of students 56) and Class 2 (number of students 55) entered this university from regular high schools, while students in Class 3 (32) were from vocational high schools.

Survey I, carried out at the beginning of the study in late August, asked students about their computer ability and how they accessed the Internet. The students' self-

assessed computer ability was expressed in a numerical way, ranging from 1 to 5, with 5 as the highest. Among the 143 participants, 18 students thought their computer skills were at Level 1, 42 students were at Level 2, 70 students were at Level 3, 15 students were at Level 4, while none thought their computer skills reached Level 5. As for how they accessed the Internet, 110 students used their own laptops or mobile phone in their dorms and 33 students used computers in the school library or borrowed computers from their peers.

15.3.3 Data Collection and Analysis

The data collection process started in late August 2012 and lasted for more than 4 months which covered the whole summer semester of university. Sources of data include student interviews, belief questionnaires, posts on the course platform, the teacher/researcher observations, field notes, journals, and other class work documents relevant to the study. Student surveys or interviews were carried out at the beginning and after the three stages of the study. The teacher and researcher kept field notes and journals throughout the study. Students were required to submit products of their group or individual tasks to the course platform and comment on others' posts.

Data collected from the preceding sources were analyzed using qualitative methods. Data analysis occurred during and after the data collection phase and was an ongoing process. Consistency of the findings generated by different and identical data collection methods was checked by the researcher and also by one of her colleagues.

This triangulation of data collection and analysis contributed to the reliability of the findings of the study.

15.4 Results and Discussion

15.4.1 Blended Learning Model

This study designed and investigated the blended learning model according to the framework suggested by Neumeier (2005), in which the parameters are mode, model of integration, distribution of learning content and objectives and assignment of purpose, language teaching methods, involvement of learning objects, and location.

15.4.1.1 Mode

In this study, the face-to-face mode consisted of meetings in the classroom for 5 h a week, and the CALL mode consisted of students' online activities outside the class. Since the learners were guided through the learning process in the face-to-face mode, and the sequencing and organization of the content or negotiation of content was also done in this mode, the face-to-face mode was the leading mode in the "Tour around the World" blended learning model. The time students spent in the CALL mode was highly individualistic as the model offered a high degree of learner autonomy. Students reported spending less time accomplishing the online inquiry tasks because of their competence in computer skills, professional knowledge, as well as the target language. Others reported taking extra time reading online out of interest and belief in the benefit it would bring to their language learning.

In the CALL phase, the "Tour around the World" model made use of Web-based authentic materials to promote students' ability in searching for information, thinking critically, communicating, and making decisions in the target working environments. The model chose a public online service "Edmodo" as the platform for the exchange of ideas and materials, as well as the presentation of task performance outside the class. In the face-to-face phase of the course, the model offered opportunities for teacher–students and students–students communication in whole-class and group discussions.

15.4.1.2 Model of Integration

Model of integration includes sequencing of individual modes and level of integration according to Neumeier (2005). In this blended learning model, sequencing of modes was completed in parallel. The course platform was available constantly, serving as a support for communication. Face-to-face phases and the submode of online inquiry activities were arranged in complex succession. In designing the line of sequencing, this model tried to "minimize the level of transactional distance" by trying to relieve students' feelings of isolation or uncertainty in the learning process. Face-to-face mode, as the lead mode, was used for delivering the course content (which includes professional terms and structural knowledge), and negotiation of activity arrangements, while Web inquiry phases were inserted into corresponding stages of the lead mode.

Level of integration is related to the level of flexibility of the instructional arrangement. In this study, most activities in face-to-face and CALL modes are obligatory. Yet students had more choice in Web inquiry activities as they could arrange their own destination and schedule for their virtual trip and find the time to complete the tasks at their own convenience.

15.4.1.3 Distribution of Learning Content and Objectives

In the face-to-face mode, students worked from the textbook and completed the vocabulary, reading, discussion, grammar, and translation activities concerning various topics in tourism. In the CALL mode, self-access materials for vocabulary, listening, grammar, reading, and writing practices were provided on the course platform. Firstly, these materials were all closely related to the content of the course. Later, the teacher uploaded materials for students' preparation of the Band 6 Exam (an official examination for non-English majors) at their request. More importantly, on the Internet, students gained access to various Web sites providing authentic information about resorts, transportation, and accommodation all over the world, which the students would encounter in their future work. The online inquiry activities were not only concerned with information seeking, but also communicating and decision-making activities.

The way learning content and objectives were distributed could be regarded as both parallel and isolated. Because, on the one hand, most of the course content and subjects were practiced on both modes; on the other hand, both the modes played a special role in the blended learning model. A group discussion function (synchronous and asynchronous) on the course platform was made technologically available, but students seldom used it. The reason was, according to a student in Class 1, that students went online at different times, and they felt asynchronous discussion unnatural. When the Web inquiry task involved their group work, they would rather find a place and meet in person. So the face-to-face mode was more for group discussion work and provided for opportunities of oral expression, while the CALL mode was more for students' individual work requiring learner autonomy.

15.4.1.4 Language Teaching Methods

The language teaching methods in the "Tour around the World" blended learning model was primarily communicative. A typical unit in the course started with the teacher introducing several professional terms in tourism, followed by a whole-class discussion of the text for that unit. The discussion was mainly concerned with certain reading skills such as reading for specific information or gist. Then, an open question on a related topic would be given for student group discussion. Students worked in their groups and gave presentations based on the opinions of their group members to the whole class. Exercises for the unit would be in grammar, vocabulary, reading, and translation practice in class and Web inquiry assignments for students to complete on the Internet. Students submitted their work on the course platform, allowing the teacher as well as other students to give comments.

15.4.1.5 Involvement of Learning Subjects

Involvement of learning subjects is closely related to the language teaching methods used in the blended learning model. As a result of the communicative teaching methodology in the face-to-face mode of the model, interactional patterns were mainly teacher to the whole class, teacher to a student, student to a student, and a student to a group of students or the whole class. The interactional patterns in the Web inquiry activities were mainly student through computer to other professionals of tourism, gaining information they provided online. On the course platform, the interactional patterns were student to teacher and student to student by presenting their journey arrangements and giving comments.

The teacher's role in classroom teaching was different from the traditional role as a source of knowledge. It was a combination of information presenter, in-depth thinking promoter, and language acquisition facilitator. In the CALL mode, the teacher's role as information presenter faded away and became more of a guide, providing help when students met technical problems or were lost surfing online. The students took an active role in classroom discussion and became more autonomously involved in online learning activities. For the Web inquiry tasks, the teacher gave a general description of the task, and students could decide the content of the task, and time and place to complete it. Furthermore, they would encounter various challenges and difficulties during the process, most of which they had to deal with by themselves.

15.4.1.6 Location

Learning took place in the classroom, the student dormitory, and electronic reading room in the school library. Most students chose to complete the online tasks in their dorm as they had their own laptops and found it convenient learning there. Others chose the electronic reading room for the quietness and technical assistance provided there.

15.4.2 Impacts of the Model

15.4.2.1 Student Surveys

The learners' perspectives on the use of this blended learning model were investigated through 2 student surveys carried out during the process of "Tour around the World" (late September for Survey II and mid-December for Survey III). In the surveys, students were asked about their attitudes toward the blended learning model and invited to give suggestions on how to improve the model. Given the author's identity as both researcher and teacher, the surveys were kept

anonymous to avoid false information being provided. The surveys were presented in students' mother tongue, Chinese, to avoid misunderstandings.

Survey II was conducted at an early stage of the study, when students were still comparing the communicative way of face-to-face teaching and experiencing their first several trials of using the course platform as storage of learning materials and means of submitting assignments. Their attitudes toward the communicative way of teaching, especially the group discussion activity in class, were exclusively positive. They mentioned some advantages of the teaching method. For example, "it can promote students interest in participation, especially for the less abled ones," "it enables every student to express their own opinion," and "it makes the class atmosphere more active." They also mentioned their former teachers trying to use the group discussion method, but being less successful. As for the CALL mode, they reported not having used such platforms before.

Regarding their attitudes toward the CALL mode, the course platform in particular, students' opinions varied considerably. Among the 101 students taking part in Survey II, 45 liked it very much, 34 thought it was good but had problems, 20 disliked it, and 2 had no idea. The positive comments included the platform was a good place "to find information relevant to the course," "to express our ideas," "to share learning resources with peers," "to get familiar with the English environment," and "to submit assignments." The problems of the platform, according to the survey, lay in technological difficulties, language difficulties, not having a personal computer, or poor Web service.

After reflecting on the students' suggestions in Survey II and class observation, the teacher made some changes in both face-to-face and online mode of the blended learning model.

Survey III was carried out after students had completed three series of tasks on the CALL mode, which meant they had become more familiar with the technology used and learned more about language in the field. 106 students participated in the survey which remained anonymous. Most students (102) expressed their satisfaction with the communicative face-to-face instruction; the other 4 reported that they could not keep pace with the teacher and their peers because of low language competence. Comments on the CALL mode focused on Web inquiry activities this time. 51 students were very satisfied with the activities. They reported that in the activities, they "improved their computer skills," "learned to arrange travel routes," "to book tickets and hotels," "learned to find out information concerning geography and weather of travel destinations and other relevant information," "improved their English proficiency," and "learned to be an autonomous learner." One student showed his/her increased interest in English by saying that "I like the English environment on the platform so much that I've changed my mobile phone language to English." Thirty of them showed their general approval of the Web inquiry activities, but they pointed out the problems of task difficulty, Web service, and time spent. 25 students showed their dissatisfaction with the CALL mode. Their complaints focused on poor Web service or their poor language proficiency.

15.4.2.2 Student Interview

At the end of the semester, 6 students were randomly chosen to be interviewed. They are named Li (female), Zhu (female), Tang (female), Xing (female), Mo (male), and Zu (male) in the analysis. The interviews were asked about their experience in the blended learning environment, what challenges they faced, and what they had achieved.

Li, aged 20, was a quiet girl. She thought her computer level was 3 if the highest level was 5 (according to data from survey I). Li told the researcher that it was her first experience to complete online tasks, and she felt her vocabulary and grammar knowledge insufficient. She said that the search engine, Google, suggested by the teacher was really helpful, especially for seeking information in English. And she found that it was not as difficult as expected understanding English Web sites. She was glad to learn a new way of learning and had a sense of achievement. Furthermore, she felt the benefits of sharing resources with others.

Zhu was 22 years old. She assessed her computer skills as being Level 1, the lowest level. Zhu said that she did not own a personal computer. So she would go to the electronic reading room in the school library for the online tasks. In completing the tasks, she typed English on a computer for the first time. She discovered that Edmodo was a good interactive platform on which English is used. She also learned that the Internet is a good tool for learning English. The learning experience in the blended learning environment helped improve her computer skills. She felt it necessary to catch up to others in the use of technology.

Tang, a 23-year-old girl, owned a laptop. She thought the Web service was poor in her dorm. Sometimes, it was not easy for her to log on to the course platform, especially in "rush hours" when many people were using the Internet. She learned that the "early bird gets the worm," because several times she had to get up really early to log in. Another difficulty for her was the all-English Web sites used when completing the tasks. She was frightened at the first sight, feeling like an illiterate. She had not experienced using English for such practical purposes as making travel plan. Then, she gradually calmed down and carefully read the pages, checked new words while necessary. She found that it was not difficult as long as she was patient enough. When finally her plan was made, she felt like leaving for the trip with her bag. She learned in these activities to find information about a scenic spots in foreign countries and to book tickets and hotels online, which she thought would benefit her future life. Her greatest achievement was that she gained a deeper understanding of English learning and travel affairs. It even changed her way of life to some degree. It was marvelous experience for her.

Xing, aged 21, was fond of using computers. She liked to get online in her dormitory with her laptop or mobile phone. She complained that the Web service of the university was not stable. Sometimes, when she was submitting her assignment, the network disconnected. So the document she had not saved disappeared. She later learned to save a word document before submitting. She told the researcher that it made her head ache at first, using the all-English platform. Yet she gradually found the pleasure in using these English function buttons for

submitting, leaving messages, and viewing posts. She thought they would be helpful in her future study and work.

Mo, a 20-year-old boy, thought his computer level was 1.5. He usually went to the school library for access to the Internet. The boy found his problem laid in both language proficiency and computer skills. And it was his first time using a Web site as a platform for learning and communication. Yet he still thought that the interactive platform was convenient, and it was good to see others posts. In the Web inquiry tasks of preparing for an outbound trip, he learned to read English Webpages without using translation software, and compare different choices before making a decision. He thought the Internet was a very good resource for tourism information.

Zu was a boy aged 22. He would use his friend's computer in the dormitory. He thought the platform had powerful functions, and it was a good tool for organizing students. The platform enabled students' discussion online and promoted awareness of other's opinions. The online inquiry activities were good for both improving his English and his study in other professional courses. He felt more confident in dealing with information in English.

15.5 Conclusion and Implications

This study described a blended learning model in English for Tourism course based on Neumeier's (2005) framework for course design and explored ESP learners' attitudes toward integrating network technologies into their learning and the challenges they met with.

It was found that, in the ESP blended learning model, integration of the face-to-face and CALL modes was successful, as well as the distribution of learning contents. The model had made close connection between the two modes, with the teacher playing a monitoring role. The ESP course was designed to include face-to-face and online practice of grammar, vocabulary, reading and writing skills, face-to-face discussion, and online inquiry activities. The use of Edmodo allowed for most language skills to be incorporated and practiced in both modes. The Web inquiry tasks in which the students made their travel plan around the world provided them opportunities to get familiar with their future working environment. This addressed the limitations of insufficient learning content in the traditional face-to-face teaching. Student interview suggested that even students not fond of computer use found the CALL mode helpful for them to learn the language and practice professional skills.

The challenges learners met with were mainly from language proficiency and technical problems, or some students just lacked the confidence in their language and computer competences. The teacher may provide detailed instructions on how to carry out the activities as well as encouragement. What the blended learning model required from the institution was sufficient network service.

In conclusion, the ESP blended learning model presented in this study contributes to effective learning and student satisfaction as long as sufficient supports are provided.

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Part VII
Assessment for Learning and Teaching

Chapter 16
Essay Question Formative Assessments in Large Section Courses: Two Studies Illustrating Easy and Effective Use

Andrea A. Curcio, Gregory T. Jones and Tanya M. Washington

Abstract Do formative assessments, via practice exercises accompanied by generalized feedback, make a difference in student final essay and short-answer examination performance? If so, does the practice help some students more than others? We sought to answer these questions in two studies performed with law students. We also sought to devise a duplicable model for examining those same questions across disciplines. Finally, we hoped to develop an easily workable method to provide practice and feedback to large section courses without unduly burdening faculty. This chapter discusses our findings that practice exercises and generalized feedback formative assessments can be done in large section courses with minimal additional professorial work and that the effects of that practice can be easily studied. The chapter also discusses our findings that although practice exercises accompanied by annotated model answers and grading rubrics had a positive effect on student final-examination performance on essay questions and short-essay/short-answer test questions, the effects of the practice and feedback did not benefit all students equally—the students with the highest-grade predictors received the greatest benefit from the formative assessments. This chapter explains the work and its implications for student learning as well as for future research.

16.1 Introduction

Formative assessments measure learning for the purpose of giving feedback rather than for the purpose of assigning a grade. Formative assessments are an especially effective type of feedback because they signal not only learning lapses but also

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grader expectations. Formative assessments, especially for large classes, can be time-consuming. This chapter will review a model for formative assessments that requires minimal (or no) grading and a way to track who benefits from the feedback. While the two studies described are from law classes requiring essay answers on examinations, the principles used in these studies are classic ones, easily applied to other subject matter areas. In this chapter, the overview of these studies provide context for a discussion about using formative assessments in large section courses; easily duplicable models for studying the impact of those assessments; the need to examine which students may benefit from the assessments and why; and some ideas for potentially helping those students that did not seem to benefit from the formative assessments described herein.

16.2 The Value of Formative Assessments

Formative assessments are graded or ungraded exercises, quizzes, or tests provided during the semester that give students feedback about their comprehension or performance (Sadler 1998). Formative assessments allow students opportunities to assess their learning and identify areas in which they need to improve (Sadler 1998; Shute 2008). However, the effectiveness of formative assessments depends upon a number of different factors including the type of feedback, how the feedback is administered, and how it is understood and acted upon (Shute 2008; Wiliam 2010). Although formative assessments may also be summative (count toward a final grade), some studies suggest feedback from formative assessments may be more effective if ungraded because students tend to focus on grades, not suggestions for improvement (Shute 2008). Formative feedback is likely most effective in improving examination performance when the practice exercises or tests closely resemble the summative assessment format and difficulty level (Oliver and Williams 2005).

16.3 Self-Regulated Learning and Formative Assessment

Formative assessment feedback is most useful for students if they are able to use it to figure out what they do not know (Biggs 1998), if it motivates them to fix the gaps in their performance (Biggs 1998; Shute 2008) and if they understand how to use the feedback to conform to the instructor's expectations (Sadler 1989; Nicol and Macfarlane-Dick 2006). Thus, formative assessments' value, especially in higher education, relies largely upon students' self-regulated learning—the students' abilities to understand and control their learning (Nicol and Macfarlane-Dick 2006).

Two important, intertwined components of self-regulated learning are metacognition and motivation (Stolp and Zabrucky 2009). Metacognition is the term used to describe a person's awareness and control over his or her learning (Niedwicki 2006). Metacognition can be divided into metacognitive knowledge and metacognitive regulation (Schraw and Moshman 1995). Metacognitive knowledge refers to what a person knows about how he/she learns and a person's knowledge of effective learning strategies for a given task. Metacognitive regulation refers to how a person plans, monitors, and evaluates the learning strategies and resources chosen in a given course or context (Stolp and Zabrucky 2009; Nietfeld et al. 2005).

Students with highly developed metacognitive skills use various strategies to increase comprehension, seem better able to predict what will be expected on tests, and target their study efforts to monitor and improve learning and test performance (Baker 1989; Nietfeld et al. 2005; Niedwiecki 2006). High-achieving students are able to more accurately calibrate what they do and do not know (Stolp and Zabrucky 2009) and use a wide variety of strategies to fix gaps in their learning (Ruban and Reis 2006). Lower-achieving students tend to overestimate their abilities (Kruger and Dunning 1999). They also often lack the ability to recognize their poor performance, and even when they recognize their poor performance, many do not understand how to improve (Veenman 2011; Stolp and Zabrucky 2009). Students' metacognitive skills and abilities come into play with formative assessments because metacognitive skills relate to students' abilities to understand and use the information provided by formative feedback effectively.

Another aspect of self-regulated learning that comes into play with formative assessments is motivation. Whereas regulation of cognition deals with effective use of learning strategies, regulation of motivation deals with willingness to put sustained effort into developing the knowledge and skills necessary to succeed at a given task (Stolp and Zabrucky 2009). One important component of motivation is a person's self-efficacy beliefs—beliefs about whether one's behavior can result in a desired outcome (Stolp and Zabrucky 2009; Bandura 1997). Self-efficacy influences the learning strategies students choose and how students apply those strategies (Kitasansis et al. 2008). It also plays a significant role in students' motivation to use the information provided by formative assessments. The more that formative feedback provides students with information they believe they can use to help them succeed, the greater their motivation to use the feedback to improve their performance (Nicol and MacFarlane-Dick 2006). Formative assessments may increase students' confidence that they understand what is expected and that they can achieve those expectations with increased academic effort. This, in turn, can trigger students' self-efficacy beliefs and motivate students to use the materials to identify knowledge gaps and employ various strategies to remedy those gaps.

16.4 Using Formative Assessments with Minimal Faculty Burden

With today's higher-education faculty members teaching large numbers of students and multiple classes, even the best assessment practices are unlikely to be used if they require significant instructor time or resources. Thus, for example, it is unrealistic to expect instructors in large section courses to give students practice essay questions with individualized feedback. The studies discussed below describe formative assessments involving essay and short-answer questions that took minimal additional instructor time. The studies described are explored in more depth elsewhere (Curcio et al. 2008; Sargent and Curcio 2012).

16.4.1 Study One: Annotated Model Answers and One Graded Essay

In the first study (Curcio et al. 2008), the 80 students enrolled in a required first-year law school course were required to write five three-page take-home papers that sought to develop analytical skills and substantive knowledge. To motivate students to put effort into each paper, students knew one of the first four papers would be graded but did not know which one. All papers received some "completion credit" for turning in a good-faith effort.

After students turned in each paper, they were given an annotated model answer to help them understand the writing and analytical process. The model answers pointed out common problems students encountered in legal essay answer writing and illustrated how to address those problems. For example, after a given paragraph, a model answer might note: "this is an example of how to break a legal rule into its component parts" or "this paragraph illustrates how to apply the facts to an element of a legal rule" or "this demonstrates how either side might be able to use the same fact to persuade the reader". In addition to the annotated model answers, about 10 minutes of class time was devoted to self- or peer edits of the submissions and questions. The third paper also had a grading score sheet which indicated how the professor allocated points.

For the paper that was individually graded, students were provided with professor comments on their submission. Students who performed poorly were encouraged to meet with the professor although few did so. The fifth paper was a chance for students to incorporate the general and individual feedback from the first four papers. After submitting this final paper, students received an annotated model answer in order to compare their work to the professor's expectations.

To determine whether the formative exercise feedback described above had an effect on student examination performance, the professor who gave the interventions collaborated with a colleague teaching a different section of the same course who did not provide the writing interventions. The professors decided, in advance,

Table 16.1 Raw essay question scores for all students in both the intervention and non-intervention class

	IC class graded by ICP	NIC class graded by ICP	IC class graded by NICP	NICP class graded by NICP
Avg score essay 1	19.92	17.27	19.19	17.09
Avg score essay 2	14.86	11.98	15.32	12.29

IC Intervention class, *NIC* Non-intervention class, *ICP* Intervention class professor, *NICP* Non-intervention class professor (total possible raw score points for Essay One—30, for Essay Two—33)
Data taken from Curcio et al. 2008, at 291

to give two identical essay questions on their final examinations. They coordinated their teaching and coverage of the essay examination question topics to attempt to equalize course instruction across both sections. The professors then blind-graded (student names removed) each of the essay questions from both sections, using an agreed-upon grading rubric and working to ensure they were applying the rubric in a similar manner. The professors had a strong degree of concordance in their examination scoring. The raw scores for both final-examination essay questions were compared between the class that received the practice writing exercises and the class that did not receive the writing intervention.

The results of independent sample t-tests showed that, on average, there was a difference in performance on both essay questions, with those students who received the practice writing exercise performing better on both questions (Table 16.1).

To see whether the differences in essay question grades were due to differing student abilities, rather than formative assessment experience, students in each class were compared by two grade predictors: law school admission test scores (LSAT) and undergraduate grade point averages (UGPA). Analysis indicated no significant difference between the students in the two classes on either LSAT score or UGPA. Further analysis indicated that while the intervention class, on average, received higher raw scores on each essay question, the performance increase was not an across-the-board increase. Rather, a statistically significant benefit from the intervention inured to students with above-the-median LSAT scores or above-the-median UGPAs with no statistically significant benefit seen for students with below-the-median LSAT scores or below-the-median UGPAs (Curcio et al. 2008). The raw score point differentials, subdivided by median LSAT scores, are set forth in Tables 16.2 and 16.3.

Generally, studies examining the effect of formative assessments look at the value to the class as a whole, rather than looking at the effect upon subgroups within the class and generally do not consider the desired beneficiaries—i.e., low-performing students (Dunn and Mulvenon 2009). Looking for this interaction, however, is worthwhile not just because it is thorough research but also because knowing which subsets were less able to use the formative assessment can help

Table 16.2 Average essay scores for students with above-the-median LSAT scores

	IC class graded by ICP	NIC class graded by ICP	IC class graded by NICP	NICP class graded by NICP
Avg score essay 1	21.33	16.90	20.88	16.68
Avg score essay 2	15.66	11.75	16.08	12.37

IC Intervention class, *NIC* Non-intervention class, *ICP* Intervention class professor, *NICP* Non-intervention class professor (total possible raw score points for Essay One—30, for Essay Two—33)
Data taken from Curcio et al. (2008) p. 294

Table 16.3 Average essay scores for students with below-the-median LSAT scores

	IC class graded by ICP	NIC class graded by ICP	IC class graded by NICP	NICP class graded by NICP
Avg score essay 1	18.29	17.89	17.22	17.78
Avg score essay 2	13.90	12.36	14.45	12.42

IC Intervention class, *NIC* Non-intervention class, *ICP* Intervention class professor, *NICP* Non-intervention class professor (total possible raw score points for Essay One—30, for Essay Two—33)
Data taken from Curcio et al. (2008) p. 295

redesign the assessment or add other feedback formats to improve its utility. For example, the results of this study prompted an exploration of why the formative assessments had a disparate effect on students with above- and below-the-median-grade predictors. One hypothesis was that differences might be due to students' differing metacognitive abilities—i.e., that the lower-achieving students did not have the skills to use the formative assessments to identify their errors and employ strategies to correct those errors. It was suggested that formative assessments combined with materials to help students improve their self-assessment abilities might result in formative assessments providing a benefit for a larger segment of the class. The second study examined this question.

16.4.2 Study Two: Annotated Model Answers, Grading Rubric, Self-Reflective Exercises, and One Graded Assignment

In the second study (Sargent and Curcio 2012), 67 students in a second-year required law course were given five (three in-class and two take-home) ungraded 150- to 250-word short-answer "quizzes" similar to the final-examination format. Upon completion of the quiz, students received annotated answers that explained why a particular answer was correct and the reasoning process used to arrive at the

answer. Quizzes two through five included a grading score sheet and self-reflective exercises. Because self-reflective skills are not intuitive (Sadler 1989) the self-reflective exercises were an attempt to help students think about their learning—to step back and consider their learning strengths and deficits and how to address the shortfalls.

Completion of the self-reflective exercises was voluntary; however, students received extra credit if they completed and turned in the initial self-reflection exercise. Review of the initial self-reflective exercise confirmed what studies indicate: many students, and especially poorly performing students, lack the skills necessary to accurately assess their responses and thus fail to identify the fact that they are performing poorly (Ehrlinger et al. 2008; Boud and Falchikov 1989). What was interesting was that this was true even in light of having the correct answer and analysis in front of them. Even with an annotated model answer that laid out the correct rule and analysis and explained why that rule and analysis was correct, some students did not identify their substantive errors.

To help students who did not seem to understand how to compare their answers to the model answers and grading score sheets, the professor changed the self-reflective exercises to ask more specific questions. The initial self-reflective exercise asked questions such as: "Overall, did I identify all issues (relevance, 403 probative value and risk of prejudice; offer of proof—how you make it and what you must show)? If I missed some issues, what can I do to improve my issue spotting?" (Sargent and Curcio 2012, at 403). The subsequent self-reflective exercises asked more directed questions such as: "This question required you to use 404(b) (prior bad acts) as the basis of your analysis. Did you identify that rule? What words in this problem clue you in to the fact that you have to look at 404(b)? Identify, by underlining, where in your answer you stated that the problem involved rule 404(b)" (Sargent and Curcio 2012, at 403–04). These changes were designed to strengthen students' abilities to self-observe and self-judge the accuracy of their answers.

After completing four of the five practice exercises with the feedback described above, students were given a graded midterm in the same short-answer format as the practice quizzes. The midterm counted for 17 % of the students' final grade and contained individualized comments and suggestions for improvement. The self-reflective exercise accompanying the midterm asked very specific questions and gave specific suggested study tips to prompt students to identify their weaknesses and improve upon them (Appendix). After the midterm, students were given one more formative assessment exercise in the format described above.

Students in the intervention class were tested using a similar examination to that used in a class taught by the same professor a year earlier. The earlier class did not have the formative assessment interventions but otherwise was taught using the same materials and format. Eleven final-examination short-answer questions were the same between the two years and were used to measure the effect of the formative assessments. The eleven common questions were graded using the same rubric for both years. To establish grading reliability, the administrative staff randomly selected fifteen examinations from each year for blind-grading (student

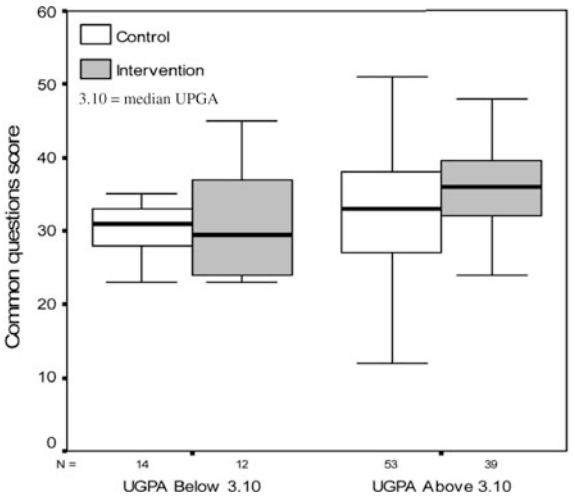

Fig. 16.1 Scores on common questions shown by UGPA and treatment group, taken from Sargent and Curcio 2012, at 392

and term not revealed). Those examinations were re-graded by the professor without any knowledge of the original grade. In the blind-grading, 89.4 % of the questions received the same raw score point total as the original grade, thus establishing acceptable grading reliability.

As in the previous study, final-examination scores in the two classes were compared controlling for LSAT scores, UGPAs and first-year law school GPA (LGPA). There was no statistically significant difference between the two classes in terms of these grade predictors. Like in the previous study, this study also showed that, on average, there was a demonstrable improvement in examination performance for students in the class that utilized the formative assessments (overall effect size of 3.024 out of fifty raw score points). In this course, as in the earlier one, the analysis went deeper and looked at whether certain subsets of students were more likely to benefit from the feedback. Again that analysis found that the benefit from the formative assessment experience was concentrated in the students with above-the-median LSAT scores and above-the-median UGPAs. The assessment was statistically significant in explaining the raw score variance in the common examination question scores for the top 70 % of the students in the intervention class (effect size of 4.595 out of fifty raw score points). The boxplots illustrating the interaction of student grade predictors and outcome from the original work is shown below. The bold black line is the median score with the areas in the box above the line including the scores in the second quartile and the "T" above that as the scores in the first quartile. The box area below the bold line is the third quartile of scores and the upside down "T" is the fourth quartile of scores (Fig. 16.1).

This intervention varied from the earlier work in that it used a series of short-essay/short-answer question formative assessments, rather than longer essay questions, in an attempt to scaffold student learning (Biggs 1990–1991). The

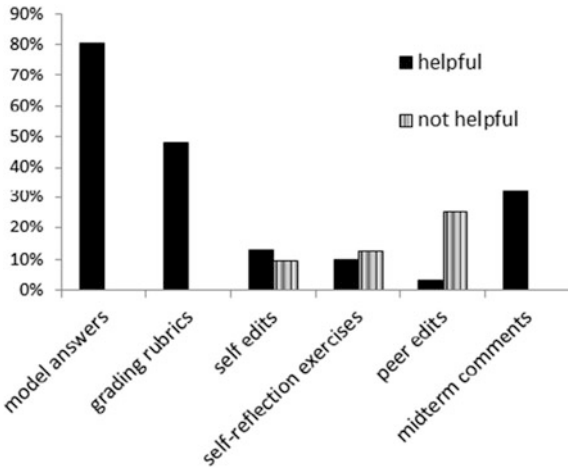

Fig. 16.2 Ratings of feedback and self-reflection activities, taken from Sargent and Curcio 2012, at 393

second study also distributed grading score sheets for all but one of the exercises. The score sheets set out the point allocations for various parts of an answer. The goal of the grading score sheets was to help students understand how the model answer would be scored, thus more clearly delineating the professor's expectations. Finally, the second study incorporated self-reflective exercises to help students self-observe, self-judge, and ultimately self-regulate. It is not clear which, if any, of these modifications were responsible for the larger effect the formative assessments had in the second study.

16.5 Students' Reactions to the Formative Assessments

In both studies, students were asked for feedback about the perceived value of the formative assessments. In both studies, students felt that the annotated model answers were very helpful. Their views about the grading scoring sheets were more mixed, as were their views about the helpfulness of the professor's comments on the one graded exercise. In the first study, students found the peer and self-edits somewhat useful, although students in the second study found these largely unhelpful. Finally, students in the second study did not find the self-reflective exercises that helpful. Student feedback from the second study is set forth in Fig. 16.2.

Students' reactions to the feedback were consistent with what others have found (Hendry et al. 2011). Students in the study by Hendry et al. (2011) found exemplars with concrete illustrations of the expected format, structure, and language style helpful because the exemplars clarified instructor expectations and provided a model against which students could check their work. Grading rubrics and scoring sheets get more mixed reviews because some students find they do not provide

sufficient information to be helpful, while others find it useful to understand the instructor's expectations and scoring system (Hendry et al. 2011).

It is interesting to note that in both the first and second studies although some students found the professor's comments on the graded assignment helpful, those comments were not judged to be as helpful as the annotated model answers. The reasons for this were not explored. However, this finding raises an interesting question: Would the students have demonstrated the same level of improvement if the professor had not graded even one of the assessments? That question could be explored in future studies.

Students in the first study found the peer edits generally helpful, while only a few students in the second study felt the peer comments helpful and many found them unhelpful. This may have been due to the nature of the practice questions—the first study involved longer essay questions, while the second study involved more of a short-essay/short-answer format. It could also be that students were assessing the value of peer edits based upon feedback they received from fellow students rather than on the value of grading peers' written exercises. Or, the response may have been due to some different reason altogether. Given the student feedback about the value of peer assessments, instructors may want to poll their own students to determine whether, and why, the students believe the peer assessments are helpful and decide, based upon that feedback, whether to continue peer edits throughout the semester. Alternatively, professors may consider whether taking class time for peer evaluation provides value added in light of the other forms of feedback provided.

It is also interesting to note that a very small percentage of students felt that the second study's self-reflective exercises were helpful and many felt they were unhelpful. Possible reasons for this, and potential ways to make the self-reflective exercises more helpful, should be explored.

16.5.1 Why Did Some Students Derive More Benefit from Formative Assessments?

While the formative assessments described above had a discernible positive effect on 50 % of students in the first study and 70 % of students in the second study, in both studies, the effect was concentrated in students with above-the-median UGPAs and LSAT scores. The unanswered question is why the formative assessments did not help students with below-the-median-grade predictors. One explanation is that some students may lack the metacognitive skills necessary to use the feedback to calibrate their comprehension and remedy learning shortfalls. Feedback can only be used to narrow the achievement gap if students understand the standards, use the information provided to compare their performance with the standards, recognize their shortfalls, and understand how to remedy those shortfalls (Sadler 1998).

College students with stronger self-reported metacognitive skills have generally earned higher course grades (Young and Fry 2008). Although there are no formal studies relating metacognitive skills to LSAT scores, students who perform well on the LSAT anecdotally report using metacognitive skills to improve their test scores. They practice the tests, identify weaknesses, and try different approaches to remedy their weaknesses (http://www.top-law-schools.com/how-i-scored-a-180-article3.html). Additionally, the LSAT requires comprehension of complex texts and the ability to draw inferences from reading them (Wilson and Powers 1994). Strong metacognitive skills are an important component of critical reading and inferential skills (Burton et al. 2009; Lundeberg 1987). The combination of the critical reading skills assessed and the reports from successful students about how they improved their scores makes it reasonable to postulate that there is a correlation between LSAT scores and test-takers' metacognitive skills and abilities.

Given that strong metacognitive skills correlate to higher UGPA and may also correlate to LSAT scores, it may be that students with above-the-median UGPAs and LSAT scores had stronger metacognitive skills that helped them use feedback to identify performance expectations, figure out where and how they have failed to meet those expectations, and then employ various strategies until they successfully narrow performance gaps. Students with weaker metacognitive skills may not have been able to use the information provided to help identify knowledge and performance gaps or may not have understood how to remedy those gaps. Alternatively, students with poor metacognitive skills may have been unable to calibrate their performance accurately and may have over-estimated their grasp of the material. They may have thought they understood the material and expectations and, with this false sense of confidence, underprepared for the examination.

Understanding monitoring skills, adult learners use while engaging in higher-order learning tasks, such as essay writing, is an under-studied area (Venkatesh and Shaikh 2011), especially as it relates to "how to better attune learners' perceptions of the assessment criteria for a task to match those of the instructor" (Venkatesh and Shaikh 2011, at p. 2). Thus, the question of whether students' differing metacognitive abilities impacted their abilities to use formative assessment feedback provided for essay question answers is an area that should be further explored.

The initial study suggested lower-achieving students needed additional instruction in how to develop their metacognitive skills so that they could effectively interpret and use feedback to improve their performance (Curcio et al. 2008). Research indicates that metacognitive skills can be taught to students to improve their learning (Nietfeld and Schraw 2002; Thiede et al. 2003; Nietfeld et al. 2006; Lovett 2008). The second study attempted to help students develop their metacognitive skills by providing them with self-reflective exercises designed to improve their abilities to self-identify and rectify their missteps. The exercises asked students to compare their answers with the annotated model answers and grading score sheets and identify where they went wrong and how they could remedy their errors. It is unclear whether those exercises improved student performance or if they contributed to the larger overall effect size found in the second

study. Because this issue was not explored, it is impossible to determine what effect, if any, the self-reflective exercises had on developing students' metacognitive skills and abilities to use the information provided in the formative assessments.

Another reason for the differential impact of the formative assessment exercises on students with above-the-median-grade predictors may be that the exercises were of the wrong type or quantity to reach the entire class. It may be that lower-achieving students needed an even more structured class design with higher numbers and different types of exercises to reinforce their learning. For example, Freeman et al. found that introductory biology course-failure rates declined with the addition of various active learning exercises and techniques, with the highest decline in failure rates occurring in the classes that contained the most highly structured learning environments and the most numerous active learning exercises, including in-class group exercises, clickers, practice examinations, reading quizzes, and class note summaries (Freeman et al. 2011). Thus, it may be that lower-achieving students need a larger number and wider variety of exercises than students with stronger-grade predictors.

Another potential explanation for the lack of across-the-board benefit from the formative feedback is that some students were unmotivated to use the feedback, including the self-reflective exercises, because they did not believe the formative feedback exercises would help improve their grades. For formative assessments to make a difference in learning, students must also have motivation to use the information provided (Stolp and Zabrucky 2009). Self-efficacy beliefs are a key to motivation (Stolp and Zabrucky 2009). If students believe they can accomplish specific tasks, they generally are more willing to remain motivated and try different strategies to reach a particular learning goal (Bandura 1986; Schunk 1990). The more formative feedback provides students information they believe they can use to help them succeed, the greater their motivation to use that information and employ learning strategies that help them use that information (Bandura 1986; Schunk 1990). Students with higher UPGAs or LSAT scores may have been more motivated to use the formative assessments because they have had past experiences with using practice exercises and tests to help improve their learning and, ultimately, their performance. It may be that the formative assessments increased these students' confidence that they understood what was expected and that they could achieve those expectations with increased academic effort, thus triggering their self-efficacy beliefs and motivating them to use the materials to identify knowledge gaps and employ various strategies to remedy those gaps. The impact of formative assessments on student motivation and self-efficacy beliefs was not studied. However, it is something future researchers may choose to consider when studying the impact of their formative assessment exercises on student performance given that there are a number of instruments that have been developed to measure self-regulatory strategies and motivation in light of course performance (Zimmerman 2008; Coutinho 2008).

16.6 Ease of Implementing Formative Assessments

One of the contributions of the above studies, in addition to supporting the literature on formative assessments, is that they show how instructors can provide students with formative assessments without greatly increasing their workload. In both these studies, the bulk of the formative feedback was done by providing model annotated answers and grading score sheets. Developing the exercises, model answers, score sheets, and self-reflective exercises initially takes a few hours. However, once the work is done, the materials do not need updating and can be reused in future classes.

One key element in receiving effective feedback is to ensure that students understand why an answer or particular analysis was correct or incorrect (Bangert-Drowns et al. 1991). It also helps to provide students multiple opportunities to close the gap between their current and desired performance (Nicol and Macfarlane-Dick Nicol and Macfarlane-Dick 2006). As the studies described here demonstrate, this kind of feedback is possible without individually grading student answers. In each study, the professor only graded one exercise. Even with a one-size-fits-all format for the bulk of the feedback, the formative assessments provided students with a significant benefit in both studies.

16.7 Suggestions for Developing Generalized Formative Assessments for Essay/Short-Answer Questions

16.7.1 Annotated Model Answers

In both studies, students were provided with annotated model answers. In the first study, these were the main component of the formative feedback. To develop these answers, the instructor drafted a model answer and, both during and after drafting, wrote notes to herself about why she was including or excluding particular facts and analyses. She then used these notes to develop answers that illustrated her thought processes, her expectations, and the proper analyses and format. These were incorporated into the model answer. Thus, for example, after a given sentence, the answer might say, "this is an example of using the facts given in the problem to support your argument". Or, it might note, that "this is an example of making reasonable inferences from the facts provided". Or, it might state, "Note the use of the phrase 'on the other hand' as a way to signal to both yourself, and the reader, the need to consider multiple perspectives". This same method, in which the instructor makes explicit what otherwise may remain implicit, is an important component of developing annotated model answers. One way to do this is for the instructor to pose questions to him/herself when drafting the answer—i.e., why did I choose to focus on these key points; why am I inserting this analysis at this point in the essay; why do I choose to use these facts to support my analysis;

why did I choose to organize my arguments in a particular way; and what words in the essay question prompt made me consider this argument or issue? By raising and answering these kinds of questions in a model answer, the instructor can not only explain what is expected, but can demonstrate how to meet those expectations (Sadler 1987).

16.7.2 Grading Scoring Sheets

In these studies, some students found the professor's sample grade scoring sheets helpful, while others found them either not helpful or less helpful than the annotated model answers. It is not clear why the students found the annotated answers more useful than the grading sheets. One potential explanation is that the annotated answers had one- or two-sentence explanations that clearly identified why a particular portion of the answer was appropriate (e.g., "this is an example of using the facts given in the question to support a reasonable inference"), while the grading scoring sheets contained less explanatory information—they just identified the correct answer without explaining why it was correct. As Sadler noted long ago, the most helpful feedback is that which explains what is expected and demonstrates how to achieve those expectations (Sadler 1987). Additionally, to the extent that the scoring sheets were accompanied by annotated model answers that explained why a particular analysis was correct, the scoring sheets may have been superfluous to students' understandings of how to answer the question, leading students to find them less helpful. If instructors utilize scoring sheets as part of their formative assessments, it would be useful to ask students for feedback during the semester to try and pinpoint what students find helpful and unhelpful about those scoring sheets.

16.7.3 Self-Reflective Exercises

In the second study, the professor attempted to improve students' metacognitive skills through a semester-long series of self-reflective exercises. The effect of the self-reflective exercises was not studied. However, only a small percentage of the students surveyed found the exercises useful to their learning. It may be that students who have strong metacognitive abilities viewed these exercises as superfluous because they already engaged in this kind of self-analysis. Perhaps weak students discounted the value of self-reflection and/or did not know how to use the self-reflective exercises to improve their learning because the exercises were not sufficiently directive. Although the exercises became more directive as the semester progressed (see Appendix), it could be that none of the exercises were directive enough to help students understand where they went wrong or how to fix their problems. Or, it could be that if students found the initial exercises unhelpful,

they may have been less motivated to put time and energy into subsequent self-reflective exercises. To the extent professors use self-reflective exercises, the exercises may need to be very directive and explicit in terms of providing students with checklists for learning goals as well as study strategies to help them achieve those goals (Schraw 1998). Or, it may be that different types of exercises need to be developed.

Nietfeld et al. (2006) found that weekly monitoring exercises resulted in improved student monitoring accuracy and improved student performance. Their exercises required students to indicate their overall understanding of the content of the day's class, identify the concepts they found difficult to understand, and identify what they would do to improve their understanding of the concepts they listed. Unlike the exercises used in the studies discussed above, the exercises Nietfeld et al. used required students to specifically identify, on a regular basis, what they did not understand from class. Thus, self-monitoring exercises may need to be scaffolded so that they begin with identifying gaps in knowledge before they ask students to identify how to remedy problem areas.

Alternatively, self-reflective exercises may need to be integrated into all aspects of a course. For example, Professor Marsha Lovett at Carnegie Mellon suggests that instructors can help students learn to self-monitor and thereby improve performance if the instructor requires students to engage in self-reflective techniques at the end of each class, when doing homework, and when reviewing examinations. Professor Lovett maintains that this integrated approach improves student learning (Lovett 2008). It may be that this fully integrated, self-reflective model would better enable students to use the information provided in formative assessments because they would be practicing self-reflective techniques regularly, not just in relationship to formative assessments.

How to best develop and implement self-reflective learning techniques, and how those techniques interact with students' abilities to use information provided in formative assessments, is an area ripe for further research. To the extent instructors use these types of exercises to facilitate students' abilities to understand and utilize formative assessment feedback, it would be interesting to explore which types of exercises students find helpful or unhelpful and to examine the interactions between the use of various types of self-reflective exercises and the impact of formative assessments on student examination performance.

16.8 Motivating Students to Complete the Formative Assessment Exercises

One concern about ungraded work is whether students will complete the work and put in the effort necessary to get full benefit from exercises because students tend to ignore activities they perceive to be unrelated to their grade in the course (Freeman et al. 2007). There are a number of ways to address this issue, including

explaining to the students that the literature shows that students who put time and effort into the formative assessments generally get better course grades; giving points for good-faith exercise-completion efforts; taking class time to do the assessments so that students do not need to use outside of class time to complete the assignments; or having students turn in multiple assignments knowing that one of those will be graded but not telling students which assignment will receive the grade. Any of these techniques, or a combination of them, can help address the issue of student motivation to engage in the exercises.

16.9 Suggestions for Future Research

These studies suggest that formative assessments have a differential effect within a single class. The results indicate a need for those engaged in studying the effect of formative assessments to examine whether their formative assessments benefit students equally. The studies described above provide a model for faculty in a wide range of disciplines to evaluate the differential effect of formative assessments. In future research, it would be interesting to isolate the factors examined in these studies to see whether the same results would occur if only one intervention was used. Thus, for example, would students still benefit if the instructor only provided annotated model answers?

In the studies described herein, the authors posit that the differential impact of the formative assessments was due to the students' varying metacognitive skills. Future researchers may wish to test that hypothesis. There are numerous online and off-line methods of assessing metacognitive skills that may be used to pursue this research question (Veenman 2011).

Another area ripe for future research is whether instructors are able to design ways to improve students' abilities to identify their own errors and help them figure out how best to address the causes of those errors. Although some researchers have developed metacognitive exercises that appear to improve student calibration and performance (Nietfeld et al. 2006; Lovett 2008), much work remains to be done in this area, especially in classes where student performance is assessed via essay questions.

This chapter has described studies that provide easily duplicable models for classroom research. However, when performing studies such as those described in this chapter, it is important to be aware that the results may be influenced by the Hawthorne effect—i.e., that student performance improves when students know they are being studied (Merrett 2006). In the studies described above, unless the Hawthorne effect was limited to the students with higher-grade predictors, it is unlikely that it came into play. However, whenever one does research in a class, it is important to recognize that there may be a Hawthorne effect.

Additionally, in using the models described in this chapter, it would be useful to provide a uniform teaching experience and style by comparing students taught by the same professor. Although in the first study, it is unlikely that the different

teaching styles affected the results because of the lack of across-the-board effect, it is still better to eliminate this variable when possible. The authors recommend that future studies use the same professor teaching different course sections.

If studies are performed using a model similar to that employed in the second study, it is important to recognize that when comparing performance on examinations given in different years, there is a possibility that examination questions may be leaked from year to year. In the second study, it is unlikely that there was such a problem because the final examination was not returned to the control group students. Additionally, if examination questions were leaked, one would expect an across-the-board improvement rather than improvement only among students in the top two-thirds of LSAT scores or UGPAs. However, to the extent this study model is used by others, it will be important to attempt to limit dissemination of examination questions.

In both studies discussed in this chapter, it is, of course, possible that the results were affected by variables such as the time of day students was taught, the students' other professors or coursework, or other unknown student traits or emotions. As researchers working within the natural classroom setting, our main job is to teach the course, not to engage in "an unassailable scientific comparison to measure the effectiveness of a particular teaching intervention" (Curcio et al. 2008, at 312), and we must recognize and acknowledge that uncontrolled variables may account for part, or all, of our findings.

16.10 Conclusion

The two studies described in this chapter demonstrate that formative assessments can be administered in large section courses without greatly increasing instructor workload and that they make a discernible difference in student examination performance. Student responses to the feedback suggest that the most helpful feedback was an annotated exemplar that illustrated how to construct an answer and explained why particular aspects of an answer were good or bad.

The two studies highlight the need for researchers to explore whether formative assessments help all students within a class. Rather than simply looking at whether the class, on average, improves, researchers should explore whether the benefits of the formative assessments accrue disproportionately to some students, as happened in the above studies.

To the extent the benefits of formative assessments inure mainly to those with higher-grade predictors, the big question is: why? We postulate that the differential effect is due to students' varying metacognitive skills and abilities as well as their self-efficacy and motivation to employ the feedback. Those students who have higher-grade predictors may have stronger metacognitive skills, be better able to use the information, may have more confidence in their abilities to use the feedback, and thus may spend more time studying and incorporating the feedback

messages. However, we did not collect data to verify these theories. This hypothesis merits further exploration.

The question of how to reach all students via formative assessments also requires further study. It is unclear whether additional practice, more extensive self-reflective exercises, or different kinds of practice may benefit students with below-the-median-grade predictors. We hope that this chapter encourages faculty engaging in formative exercises to investigate whether there is an across-the-board benefit and, if not, to explore ways to design the formative exercises and feedback so that the benefit extends to all, or virtually all, students.

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Appendix (Sargent and Curcio 2012 at 404–05)

Sample Self-Reflective Questions Accompanying Graded Mid-Term

Using the grading rubric provided for each question, identify the points you got (identify on your answer exactly where each point comes from—e.g. if it says "explain how the probative value is low—identify where in your answer you explained how the probative value was low").

Overall, looking at your answer in light of the rubric, which of the following do you think you should be working on between now and the final (check all that are applicable):

_____making sure I understand the elements of the rule
_____making sure I understand the exceptions to the rule
_____practice issue spotting
_____practice articulating clearly and concisely how the rule applies to the facts
_____other—describe

Which of the following practice study tips do you think will help you learn and apply this material (check all that are applicable)

____doing an outline of the rules and exceptions
____using Emanuel's or Cali exercises
_____writing out answers to Emanuel's or Cali Exercises and exchanging those with a colleague
_____other—describe

Comparing your own scoring to the score you got from the professor, were the scores similar? If not, when did you give yourself points that the professor did not give you? Is there any patter you can see about when you scored yourself higher or lower?

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Chapter 17
Learner-Centered Assessment in US Colleges and Universities

Karen L. Webber

Abstract Over the past two decades, US postsecondary faculty members have moved away from "sage on the stage" to learner-centered instruction and assessment of learning. The assessment of student learning continues to be an important issue among educators and other constituents. This chapter discusses faculty member use of learner-centered assessment techniques in US colleges and universities, based on responses from the 1993 and 2004 *National Study of Postsecondary Faculty* (NSOPF).

The teaching–learning process in postsecondary education is a critical and complex process. Today's changing world includes new technologies, a diverse population of students with a wide range of skills and demands to help students acquire skills that will enable students to easily adapt to changing demands in the workforce. With these needs in mind, postsecondary faculty must remain aware of student needs as well as new pedagogical techniques to maximize their efforts in teaching and learning. Preceding chapters in this book have offered valuable information on innovations in instruction, learning and the construction of knowledge, and using technology in the classroom. In the USA and other countries, discussions about reform in education have included the use of learner-centered education. Learning activities that focus on the learner in a meaningful way prompt greater engagement and are likely to be successful (Norman and Spohrer 1996) because such learning is deep, long-lasting and transfers to contexts beyond the classroom (Walcyzk and Ramsey 2003). One important aspect of the larger discussion on educational reform is how to successfully evaluate learning.

Some of the discussion in this chapter is based on a previous publication: Webber, K.L. (2012). The use of learner-centered assessment in US colleges and universities. *Research in Higher Education*, *53*(2), 201–228.

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In this chapter, I will discuss the use of specific learner-centered assessment techniques by faculty members in US colleges and universities and offer some comments on implications for policy and practice.

17.1 The Status of Assessment of Learning

The assessment of student learning in postsecondary education continues to be an important issue among educators, leaders in accrediting agencies, and elected officials (e.g., Ewell 1988, 2002; Glenn 2011; Kinzie 2010). It is of particular importance to officials in the USA, but it has become an increasing focus in other countries of the world as well. Assessment has been a long-standing issue and an important dimension of quality instruction; however, its meaning and use have evolved significantly over the past two decades. A traditional view of assessment defines its primary role as evaluating a student's comprehension of factual knowledge. A more contemporary definition, which is growing in popularity, sees assessment as activities designed primarily to foster student learning. This more recent definition has its roots in a movement to make higher education more learner-centered, and related assessment practices are often labeled learner-centered assessment techniques.

It is clear from a growing body of literature that learner-centered assessment is now considered a highly valued practice in higher education pedagogy. In this chapter, I will discuss my examination of responses from the 1993 and 2004 *National Study of Postsecondary Faculty* (NSOPF) surveys as a way to better understand the use of learner-centered assessment techniques in today's postsecondary classrooms. This study examines factors that contribute to faculty use of assessment through hierarchical linear modeling. An advantage over single-level regression, multi-level analysis enables us to examine the effects of individual characteristics on learner-centered assessment practice, nested within the effects of institutional characteristics. This analytic technique provides a more precise examination of the contribution of individual and institutional characteristics to learner-centered assessment.

17.2 What is Learner-Centered Assessment

Over a decade ago, Barr and Tagg (1995) declared that a shift had occurred in higher education from an *instruction* paradigm to a *learning* paradigm. In the learning paradigm, faculty focus less on transferring factual knowledge to students and more on creating a learning environment that empowers students to construct knowledge for themselves. The learning paradigm positions the learner, rather than the instructor, at the center of undergraduate education, and, for this reason, many refer to this paradigm as learner-centered education.

Since Barr and Tagg's declaration, many leaders in higher education have endorsed learner-centered education and have extended the conversation about its utility in American colleges and universities. In 1998, for example, the American Association for Higher Education (AAHE), College Student Educators International (ACPA), and Student Affairs Administrators in Higher Education (NASPA) appointed the Joint Task Force on Student Learning. The Task Force produced a report that summoned those invested in higher education to adopt key principles that encourage learner-centered education. More recently, the Association of American Colleges and Universities (AAC&U) sponsored several reports on college learning that emphasized the important role that learner-centered pedagogy plays in achieving essential learning outcomes of liberal education (Crutcher et al. 2007; Kuh 2008).

Across this body of literature, advocates describe assessment as a central element in learner-centered education. Assessment in this approach, however, departs from its traditional role as an activity used primarily to evaluate a student's comprehension of factual knowledge. Rather, assessment became an activity that fosters student learning. Huba and Freed (2000) defined assessment in a learner-centered approach as "an activity, assigned by the professor that yields comprehensive information for analyzing, discussing, and judging a learner's performance on valued abilities and skills" (p. 12). They labeled this type of assessment, "learner-centered assessment," and outlined ways in which it reinforces the attributes of learner-centered education. According to Huba and Freed, learner-centered assessment promotes high expectations in the learning environment, respects diverse talents and learning styles, helps students synthesize their learning experiences, and promotes coherence in learning by providing data to direct curriculum development and revision processes. Examples of learner-centered assessment activities include multiple drafts of written work in which faculty provide constructive and progressive feedback, oral presentations by students, student evaluations of each other's work, group and team projects that produce a joint product related to specified learning outcomes, and service-learning assignments that require interactions with individuals in the community or business/industry. Through these activities, learner-centered assessment provides a mechanism for prompt feedback to students, fosters collaboration with peers and faculty, and results in increased student-faculty contact. These activities promote learner-centered education and can provide faculty members with evidence regarding how effectively students construct and develop their knowledge and skills.

17.3 Related Literature

Scholarship on learner-centered assessment has grown in recent years. Research on this topic has covered different postsecondary sectors (Boyer et al. 2007), general education and various disciplines (Goubeaud 2010; Paradis and Dexter 2007;

Palomba 2002; Yanowitz and Hahs-Vaughn 2007), professional and graduate programs (Gerdy 2002; Goubeaud and Yan 2004; Candela et al. 2006; Boaten et al. 2009), and international higher education (Fook and Sidhu 2010). Taken together, these studies reveal a growing interest in reforming assessment in higher education to be more learner-centered.

Goubeaud and Yan (2004) acknowledged the need for instructional reform and utilized data from the 1993 *National Survey of Postsecondary Faculty* to explore assessment practices among higher education faculty. Findings from their study suggested that teacher educators were more likely to employ learner-centered assessment methods (such as research papers and essay exams) than other faculty who relied on traditional assessment practices (such as multiple choice exams). To increase the use of assessment, Goubeaud and Yan suggested that educational leaders should follow through on their verbal endorsements, writing: "…a program that employs the assessment strategies it espouses will be more likely to produce teachers that are equipped to use such strategies" (p. 12).

In addition to a focus on teacher training, several scholars have advocated the need for adoption of learner-centered assessment within a specific discipline. For example, Paradis and Dexter (2007) illustrated the benefits of learner-centered education for students and faculty in geography, and Candela et al. (2006) discussed the similar benefits for nursing students and faculty. Gerdy (2002) argued for the implementation of learner-centered assessment in legal research instruction, and in doing so, provided examples of exemplary assessment activities that could be employed by law professors.

Although these studies contribute to our understanding of learner-centered assessment, they do not provide convincing evidence that reform has actually occurred. Yanowitz and Hahs-Vaughn (2007), for instance, drew data from the *National Study of Postsecondary Faculty* 1993 (NSOPF:93) and 1999 (NSOPF:99) to examine assessment activity among faculty members in science disciplines. They found that faculty in the sciences were less likely to use learner-centered assessment practices than non-science faculty and that the former did not increase their use of these practices in the time between the two national studies, despite science educators appealing for such an increase throughout the 1990s.

To gain further insight into the use of learner-centered assessment, some researchers have examined the relationship between the use of assessment techniques and instructor characteristics or pedagogical methods. Broadly, a number of studies have examined the relationship between instructor characteristics and instructional approaches. For example, Nelson Laird et al. (2011) found that female faculty use more active learning techniques than their male peers. Bennett (1982), Centra and Gaubatz (2000), and Statham et al. (1991) reported that female faculty are more student-oriented and less authoritative, have more class discussions, do less formal lecturing, and are more available outside class than male faculty. In general, these characteristics may allow students to feel more comfortable in class and may encourage participation. Specifically, focusing on use of teaching with technology, Meyer and Xu (2009) found no differences by gender, but found that instructor age, degree level, discipline, and teaching load influenced

faculty use of technology. In particular, these authors found that younger faculty, those with a doctorate, and those with higher teaching loads used e-mail and Web sites more often in their teaching.

Recent studies have also examined instructor effectiveness by time and tenure status. Although Umbach (2008) found that part-time faculty use active learning less than full-time faculty, Leslie and Gappa (2002) report that part-time faculty are a "stable component of the faculty workforce and have considerable teaching experience" (p. 61). Leslie and Gappa agree with other reports (Bolge 1995; Cohen and Brawer 1998; Grubb 1999) that found no significant differences in quality of instruction between full-time and part-time faculty. Although full-time faculty positions continue to be offered, some reports indicate that the larger proportion of recent employment offers are for part-time positions, and increasingly, in positions that do not offer tenure. Gappa et al. (2007) reported that in 2004, only 27 % of all new faculty appointments and 56 % of all full-time appointments were tenure-track positions.

According to Kezar and Sam (2010), findings are mixed on student success (or lack of success) based on faculty member time and tenure status. Several researchers found that students in lower division classes with part-time faculty (who were also non-tenure track) were less likely to return for the second year (Bettinger and Long 2005), less likely to transfer to baccalaureate institutions (Eagen and Jaeger 2009), and/or less likely to graduate (Ehrenberg and Zhang 2005). On the contrary, however, Waller and Davis (2009) found no significant differences in enrollment growth or student retention based on instructor tenure status. Authors such as Kezar and Sam recognize the complexities of contingent faculty, including the implications for faculty members themselves, students, and the overall organization of higher education.

Although studies have not directly linked faculty satisfaction to the use of learner-centered assessment, it is plausible that general work satisfaction could determine a faculty member's desire to incorporate new techniques in his or her instructional activities. Furthermore, if learner-centered assessment is used widely across a campus, it could serve as an activity that contributes to organization change (Foster 2010; Szabla 2007). There is a large body of literature on faculty perceptions of work life and satisfaction. Herein, I summarize studies on satisfaction that are relevant to the current focus on faculty use of assessment techniques.

Comparing individual characteristics, Rosser (2004) reported that tenured, female, and assistant professors were less satisfied than untenured, male, and assistant professors, respectively. More than a decade earlier, Russell (1991) also found differences: Male faculty were somewhat more satisfied with their job overall and significantly more satisfied with workload, due in part to higher teaching loads incurred by female faculty. Examining satisfaction over time, Rosser (2005) found that, in general, faculty in 1999 perceived more positive support for technical and professional issues and were more satisfied with advising loads and coursework, the quality of students, and work benefits than faculty in 1993. Hagedorn (2000) added to previous thinking on satisfaction and developed a

conceptual framework for faculty job satisfaction that acknowledged the influence of life events on faculty perceptions of work. Through her work, Hagedorn found that job satisfaction increases with life stages and can be affected by marriage, family, and perceptions about one's institution. Hagedorn cautioned that because satisfaction is multi-faceted, no list of factors or organizational policies can ensure positive outcomes in all circumstances; however, it is plausible to see how perceptions of perceived personal value and institutional support of instruction can affect faculty satisfaction.

Along with faculty member characteristics and perceptions of their environment, scholars have also examined the use of instructional techniques by institutional control and academic discipline. Xu and Meyer (2007) found that faculty in public institutions use the Web in their teaching more than peers in private institutions. A number of scholars purport that the teaching–learning process is different across disciplines (e.g., Becher and Trowler 2001; Hannan and Silver 2000; Healy and Jenkins 2003; Neumann 2001; Young 2010; Xu and Meyer 2007). Neumann and Becher (2002) believe that epistemological differences affect teaching and learning. The "hard" sciences tend to focus on experimentation, facts, and quantifiable data, whereas the "soft" sciences leave room for context-specific interpretations of a given phenomenon. Xu and Meyer posit that health and agriculture/home economics disciplines may rely less on e-mail and Internet Web sites in the classroom due to the clinical and hands-on nature of learning in these areas. Discreet and intertwined facets of knowledge may lend themselves to different forms of assessment. Some gains in knowledge may best be measured by a multiple choice examination that reinforces memorization of facts, while others may be evidenced through essay examinations that require students to demonstrate argumentation and theoretical synthesis. As with other factors discussed above, the faculty member's discipline may be related to the use of learner-centered assessment techniques and should be included in future studies.

17.4 Conceptual Framework Guiding This Study

One inevitable process that affects all organizations is change, and one area of regulation that affects organizational change is institutional accountability. Over the past decade, policymakers, accrediting bodies, and elected officials have continued to call for improved mechanisms that foster and measure student learning. Due to its value in the teaching–learning process and because it assists with accountability needs, the assessment of teaching and learning in postsecondary education has become inextricably incorporated in institutional policies and practices. Because internal and external agents are looking for practices related to, and evidence of, learning outcomes, faculty are strongly encouraged to assimilate instructional and assessment techniques that provide evidence of learning.

A number of factors can help or hinder organizational change. Along with leadership characteristics (McBride 2010) and degree of inertia by isomorphic forces that exist in an organization (Greenwood and Hinnings 1996), success in organizational change is affected by individual resistance to change (Lawrence 1954; Waddell and Sohal 1998). Although some faculty members are eager to incorporate new instructional and assessment techniques in their teaching, others are more hesitant. Schein (2008) wisely acknowledged that change is not best imposed; forcing change will likely result in turmoil and resistance. Sources for resistance to change include lack of skills needed for the change, different interests among employees, cynicism, organizational silence and/or leadership inaction, and low motivation due to previous failures. From an organizational perspective, resistance can occur through delay behaviors or processes that attempt to maintain the status quo (del Val and Fuentes 2003). Clark and Gottfresdon (2008) believe that many faculty members see little need for change; they are satisfied with the skills they have and are only interested in maintaining the current status quo. Faculty may be hesitant to take on new, difficult, or potentially risky activities (Nickerson et al. 1985), but that is not to say that they do not incorporate new strategies on a regular basis. LeSourd (1984) found that teacher attitudes about instructional strategies are shaped, in part, by the role of the teacher in the implementation and the results that are expected. It is reasonable to propose that individual attitudes such as receptivity to try new activities, social reinforcement from colleagues, and/or professional development training can help minimize resistance to instructional change.

Examining the use of learner-centered assessment techniques can provide insight into one aspect of organizational change that is occurring in postsecondary education today. The use of these techniques may depend on individual characteristics and institutional structures that promote and reward their use. The Bureau of Labor Statistics projects a 15 % increase in the number of postsecondary faculty from 2008 to 2018 (*Occupational Outlook Handbook* 2011) and will include both full- and part-time faculty. Recent discussions on the "graying" professoriate concern postsecondary faculty who are close to retirement, yet there is evidence that faculty are remaining employed longer than expected. Chronister (1996) reported that between 1988 and 1993, the percentage of full-time faculty age 55 and older increased from 17 to 25 % and the number of faculty members over the age of 70 more than tripled. Since some previous studies found that technology in teaching is used more often by younger faculty (for example, Meyer and Xu 2009) it is important to examine use of the assessment techniques by age and/or length of time in the profession because many learner-centered techniques incorporate use of technology such as presentation software, electronic document sharing, and e-mail.

Thus, mindful of individual and institutional characteristics that exist for postsecondary faculty and US institutions today, a careful look at the use of assessment techniques at two time points (1993 and 2004) can provide evidence of faculty actions related to instruction and may provide some evidence of organizational change that is maintained, decreased, or increased from one decade to the

next. If, for example, faculty members possess the interest and agility to incorporate new instructional techniques and perceive support from institution leaders through professional development training and/or adequate resources devoted to instruction, then it seems likely that faculty members will use these assessment techniques. If, however, faculty members do not receive information about new instructional techniques, do not engage in training or discussions with colleagues, nor see the value in incorporating these techniques into their instructional activities, it seems likely that they will not use them.

17.5 Statement of the Problem

It is clear from a growing body of research that learner-centered assessment is now considered a valued practice in US higher education pedagogy. Based on the growing volume of literature on the subject, it appears that the trend toward learner-centered assessment has gained momentum in recent years, permeating academic discourse in most traditional disciplines. Yet, it is still unclear how much this trend has actually influenced faculty assessment practices in postsecondary classrooms in the new millennium. While some faculty members seem to have embraced learner-centered assessment techniques, others appear more resistant. Examination of the NSOPF data allows us to examine the extent to which today's higher education faculty incorporate learner-centered assessment methods in their instructional strategies in 2004, as well as rates that were reported a decade earlier in 1993. Examining individual and institutional characteristics at these two points in time can provide important information on US postsecondary faculty today, the kinds of classroom assessment used, and insights into the level of broad-based support for learner-centered education. The following research questions guided this study:

1. How often do college and university faculty members employ learner-centered assessment techniques in their classes?
2. Do assessment practices differ by gender, faculty rank, tenure status, discipline, institutional control, and institutional level? and
3. Are there differences in the use of learner-centered assessment techniques between 1993 and 2004?

17.6 Methodology for the Study

17.6.1 Data

Because the focus of this study is on assessment practices in undergraduate education, the final dataset from the *National Study of Postsecondary Faculty* surveys administered in 1993 and 2004 (NSOPF:93 and NSOPF:04) included only those

universities and colleges defined in each dataset as associate degree granting or above. The 1993 categories were "doctorate-granting, comprehensive colleges, liberal arts, and associates; the 2004 categories were "doctorate granting," "master's granting," "bachelor's granting," and "associate's granting." Institutions defined as "other" were excluded. In addition, the final data included only instructors who had faculty status, identified teaching as a principal activity, spent at least 50 % of their time on instructional activities, and taught at least some undergraduate courses for credit. The 1993 dataset used in this study included responses from approximately 13,000 faculty members in nearly 600 colleges and universities; the 2004 dataset included responses from approximately 12,000 faculty members in approximately 500 colleges and universities. All analyses described below included the faculty weight provided in the NSOPF 1993 and 2004 datasets, as well as an additional weight calculated to correct for possible oversampling. This second weight was calculated by dividing the raw faculty weight by its mean, thus creating a relative faculty weight.

As discussed above, learner-centered assessment includes a variety of activities that seek to involve students more deeply in the learning process, integrate education and experience, include feedback from faculty and peers, and address discipline-specific issues and problems (Huba and Freed 2000). In the NSOPF:93 survey, respondents were asked to indicate how often they used nine assessment techniques (not used at all, used in some classes, used in all classes). Similarly, NSOPF:04 respondents were asked to indicate how often they used 10 predetermined assessment techniques. From the 2004 data, five assessment techniques were identified that were clearly consistent with Huba's and Freed's operational definition of learner-centered assessment to serve as the dependent variable. The five techniques were multiple drafts of written work, oral presentations, group projects, student evaluations of each other's work, and service learning/co-op interactions with business. Of these five, three were included in the 1993 survey: multiple drafts of students' work, oral presentations, and student evaluations of each other's work. No other items in the 1993 data were consistent with Huba and Freed's definition of learner-centered assessment.

To examine the research questions, descriptive statistics were completed for selected variables. Descriptive statistics reveal how regularly faculty members employed learner-centered assessment techniques in their classes and whether assessment practices differed by individual and institutional characteristics. Tables below show the proportion of faculty using learning-centered assessment in some or all classes by important demographic characteristics, discipline, institution type, and level. Analyses presented are separate analyses for the two points in time rather than a statistically controlled comparison of 1993 and 2004 rates.

17.7 Results

As shown in Tables 17.1, 17.2, 17.3, and 17.4, both 1993 and 2004 male and full-time faculty member respondents are in the majority, comprising about 60 % of the sample (unless otherwise specified, use of the term "faculty member" includes all rank levels). A little over half of all respondents were in the rank of assistant to full professor and were tenured or on tenure track. Just under three quarters of the respondents were in public institutions, and about a third were employed in two-year colleges.

Some differences were seen quickly when examining the demographics in 1993 and 2004. Overall, the faculty in the 2004 survey were older than those in the 1993

Table 17.1 Demographic statistics for the 1993 and 2004 samples

Variable Label	1993		2004	
	N	%	*N*	%
Gender				
Male	8,790	61.8	7,130	58.4
Female	5,440	38.2	5,080	41.6
Position type				
Full time	8,740	61.4	8,110	66.4
Part time	5,490	38.6	4,100	33.6
Rank				
Full professor	3,280	23.1	2,770	22.7
Associate professor	2,490	17.5	2,130	17.4
Assistant professor	2,580	18.2	2,330	19.1
Instructor	4,890	34.4	3,960	32.4
Lecturer	980	6.9	1,020	8.3
Tenure status				
Tenured	5,250	36.9	4,440	36.2
On tenure track but not tenured	2,140	15.0	2,070	17.0
Not on tenure track	3,240	22.8	4,710	38.5
No tenure system at institution	820	5.8	1,020	8.3
No tenure for my faculty status	2,780	19.5	NA	
Institutional control				
Public	10,170	71.5	8,990	73.6
Private	4,060	28.5	3,220	26.4
Carnegie classification				
Doctorate-granting institution	4,000	28.1	3,890	31.9
Master's granting	4,140	29.1	3,170	25.9
Baccalaureate granting	1,200	8.4	1,180	9.7
Associate's granting	4,880	34.3	3,970	32.5

Note Numbers are weighted and rounded

Table 17.2 Faculty member use of learner-centered assessment techniques

Variable Label	1993		2004	
	N	%	*N*	%
Multiple drafts of written work				
Used in all classes	1,560	11.0	2,320	19.0
Used in some classes	2,230	15.7	1,970	16.2
Not used	7,730	54.4	5,990	49.0
No response to question	2,700	19.0	1,930	15.8
Oral presentations by students				
Used in all classes	2,930	20.6	3,580	29.3
Used in some classes	4,420	31.1	2,800	23.0
Not used	4,180	29.4	3,900	31.9
No response	2,700	19.0	1,930	15.8
Student evaluations of each other's work				
Used in all classes	1,620	11.3	2,040	16.7
Used in some classes	2,730	19.2	1,890	15.5
Not used	7,180	50.4	6,340	51.9
No response	2,700	19.0	1,930	15.8
Group and team projects producing a joint product				
Used in all classes	N/A	N/A	3,080	25.2
Used in some classes	N/A	N/A	2,560	21.0
Not used	N/A	N/A	4,630	38.0
No response	N/A	N/A	1,930	15.8
Service-learning/co-op experiences or assignments requiring interactions with the community or business/industry?				
Used in all classes	N/A	N/A	1,160	9.5
Used in some classes	N/A	N/A	1,650	13.5
Not used	N/A	N/A	7,460	61.1
No response	N/A	N/A	1,930	15.8

Note All Ns are weighted and rounded

survey; the mean age for respondents in 1993 was 47.5 year (SD = 10.230), and the mean age for respondents in 2004 was 50.17 years (SD = 10.777). As shown in Table 17.1, the number of female faculty with instructional duties increased by about 8 % in 2004 and the number of part-time faculty decreased by almost 13 % compared to 1993. (A secondary analysis of time status by institution type confirmed a decrease in percentage of part-time faculty in 2004 for all four levels, associate-granting through doctorate-granting institutions. However, it is noted that respondents in the "other rank" category were removed from all analyses and a very high majority of these individuals were part time. This may have had affected analyses that examined rank and time status.) In 2004, there were somewhat more lecturers and fewer instructors than in 1993, but otherwise the

Table 17.3 Proportion of faculty using learning-centered assessment in some or all classes by demographic characteristics and discipline

Variable	1993			2004				
	Multiple drafts	Oral presentations	Student evaluations each other's work	Multiple drafts	Oral presentations	Student evaluations each other's work	Group projects	Service-learning assignments
	%	%	%	%	%	%	%	%
Gender								
Male	28.2	58.8	31.2	36.9	55.9	30.1	50.1	22.0
Female	40.3	71.5	47.3	48.8	71.0	48.7	61.9	35.1
Position type								
Full time	35.3	65.6	37.7	45.1	65.0	39.4	58.3	29.4
Part time	28.7	60.6	37.7	34.6	56.0	36.0	47.7	23.3
Rank								
Full professor	33.1	62.5	33.2	43.8	63.7	33.4	51.4	23.3
Associate professor	34.4	65.1	37.5	45.4	63.1	38.1	58.1	28.5
Assistant professor	37.3	68.8	42.0	46.7	67.1	41.9	59.5	29.2
Instructor	29.3	60.8	37.4	36.0	58.2	38.9	53.3	29.6
Lecturer	34.9	65.0	42.8	40.2	62.3	41.2	53.7	23.4
Tenure status								
Tenured	33.4	63.3	34.6	44.8	62.6	35.3	54.7	25.7
On tenure track but not tenured	38.4	68.2	42.4	47.9	68.7	44.4	63.0	32.0
Not on tenure track	31.4	64.2	40.0	37.3	57.6	38.5	50.1	25.2
No tenure system at institution	30.1	61.2	37.5	36.0	58.0	39.4	56.3	34.7

Note All percentages are based on weighted scores; due to rounding, totals may not equal 100

Table 17.4 Proportion of faculty using learner-centered assessment in some or all classes by institution level

Variable	1993			2004				
	Multiple drafts	Oral presentations	Student evaluations each other's work	Multiple drafts	Oral presentations	Student evaluations each other's work	Group projects	Service-learning assignments
	%	%	%	%	%	%	%	%
Doctorate granting	34.8	67.9	40.9	49.8	60.1	33.7	50.0	31.5
Comprehensive/ Master's	35.6	68.5	41.6	47.1	67.8	41.8	59.6	29.2
Liberal arts	33.8	69.2	43.7	53.2	72.4	42.7	61.8	28.6
Two-year	35.7	64.1	37.1	35.7	56.2	37.9	53.1	30.3

Note All percentages are based on weighted scores; due to rounding, totals may not equal 100

distribution of faculty by rank, tenure status, institution type, and control were relatively similar.

Table 17.2 shows the percentage of faculty using the learner-centered assessment techniques. In general, across both time points, about a quarter to more than half of the faculty said they used these assessment techniques in at least some of their classes. Of the three measures used in both 1993 and 2004, oral presentations by students were used the most frequently. About half of the faculty said they used oral presentations in at least some classes. Examining use in 2004 and 1993, some interesting differences are noted. In general, the number of faculty who said they used all three techniques in all classes was higher in 2004 than in 1993. For example, nearly twice as many 2004 faculty said they used multiple drafts of written work in all classes compared to responses from 1993 (11–19 %) and about a third more said they used students evaluations of each other's work (11.3–16.7 %) and oral presentations in all classes (20.6–29.3 %).

Although comparable items for 1993 are not available, Table 17.2 shows the percentage of 2004 faculty who used group/team projects and service-learning, community, or co-op experiences. Responses show that just under half of the faculty used group/team projects and about 25 % of the faculty used service learning/community/co-op. Of the five learner-centered techniques examined in this study, service learning was used the least.

Table 17.3 presents the proportion of faculty using learner-centered assessments by select demographic and institutional characteristics. Generally, across the assessment techniques at both time points, female and full-time faculty reported using these techniques significantly more than male and part-time faculty, respectively. Compared to faculty in other ranks, full professors reported using all five techniques less; generally, associate and assistant professors and lecturers indicated using the techniques most frequently. Tenured faculty reported lower levels of use than tenure-track faculty and those not in a tenure-track position. Examining use by Carnegie group revealed that faculty members in bachelor's/liberal arts and master's/comprehensive institutions employed these assessment techniques more frequently than peers in doctorate- and associate-granting institutions.

Table 17.3 also allows us to examine differences between 1993 to 2004 for three of the learner-centered assessment techniques. Although not a strict statistical comparison is shown, faculty in the 2004 study reported use of multiple drafts more frequently than respondents in 1993 (at all ranks and in all tenure groups), but the use of oral presentations and student evaluations of each other's work was at about the same rate across the two time points. Both male and female faculty reported higher use of multiple drafts in 2004 compared to 1993; however, female faculty reported higher use of all three assessment techniques than male peers. The use of learner-centered assessment by non-tenure-eligible faculty varied at the two time points and when compared to tenure-eligible faculty. Generally, non-tenure-eligible faculty used these assessment techniques less than tenured or tenure-track faculty, with one exception. Faculty respondents in 2004 who worked in institutions without a tenure system said they used service-learning assignments more

often than any other faculty group. The use of the assessment techniques by institution type remained fairly similar at both time points.

Table 17.4 examines the use of these techniques by institutional level. Overall, the use of these learner-centered assessment techniques did not vary substantially across institution type. In general, faculty members in doctorate-granting institutions reported at least some use of each technique at about the same rate as peers in other four-year and two-year institutions. Similar to figures in Table 17.3, faculty use of specific techniques shown in Table 17.4 varies by technique. For example, in 2004, about 60–70 % of faculty members use student oral presentations, while only about a third have included service-learning assignments in their courses.

Table 17.5 examines the use of learner-centered assessment techniques by teaching discipline. The first three columns highlight use of the techniques, based on responses from the 1993 survey. Generally, about 30–40 % of 1993 faculty used multiple drafts and students' evaluations of each other's work and about 60–70 % used oral presentations. The use of the techniques in 1993 is remarkably consistent across disciplines. The last five columns of Table 17.5 show the use of the techniques in 2004. Faculty member use of the five techniques ranges from approximately 20 % to over 80 %. For example, 2004 faculty members in math and statistics and engineering and architecture report the lowest use of the assessment techniques, while faculty members in education and English report the highest use. It is also of interest to examine the variation in use of student evaluations of each other's work by discipline; where over 70 % of faculty members in English languages and literatures report the use of student evaluations, only about 15 % of mathematics and statistics and physical sciences faculty use this technique. This may indicate faculty member preference for certain instructional pedagogy or perhaps concern that students have not yet mastered the content of that course and are not yet able to evaluate their peers' work.

17.8 Discussion

Noting the increased calls for innovation in student learning and assessment of learning, this study examines current use of learner-centered assessment techniques in US colleges and universities. Overall, results from this study indicate that many of today's postsecondary faculty members are using some of the assessment techniques considered to be best practice in terms of learner-centered instruction. In addition, results examined herein show that general rate of learner-centered assessment in 2004 is similar and, in some cases, higher than rates reported in 1993. The increased rates may be an indication of success in organizational change as it relates to the use of assessment for institutional accountability. Although results reported herein are not controlled comparisons of responses in 1993–2004, the use of weighted data and the fact that both datasets represent a very large proportion of faculty in two- and four-year institutions enables us to examine the two populations with relative comparability.

Table 17.5 Proportion of faculty using learner-centered assessment in some or all classes by teaching discipline

Variable	1993			2004				
	Multiple drafts	Oral presentations	Student evaluations each other's work	Multiple drafts	Oral presentations	Student evaluations each other's work	Group projects	Service-learning assignments
	%	%	%	%	%	%	%	%
Agriculture, Natural resources, home economics	37.3	63.3	33.8	33.6	60.9	31.7	65.3	34.3
Business, management, marketing, economic	35.4	67.5	41.3	36.0	65.9	40.6	66.8	31.6
Biological science and biomedical science	35.7	69.2	38.7	33.9	50.5	26.3	50.2	11.4
Communication, journalism	40.5	68.5	45.8	55.1	83.6	64.9	72.8	42.9
Computer sciences	41.9	66.1	36.9	28.0	56.6	32.8	61.8	24.1
Education	35.2	70.4	41.2	56.2	81.2	54.2	72.8	53.0
Engineering and architecture	36.1	65.1	35.6	27.3	57.3	30.3	65.7	23.8
English languages and literature	38.1	66.8	41.8	86.6	72.5	71.6	57.5	16.6
Fine arts, visual, and performing	33.9	69.1	43.0	29.8	68.3	53.0	49.4	26.9
Foreign language and literature	32.1	64.5	42.8	61.7	83.7	35.0	50.7	18.9
Health professions	32.5	62.5	34.1	29.0	68.2	26.3	58.7	53.4
Legal professions	29.4	68.1	38.9	41.1	52.4	15.3	41.2	21.5

(continued)

Table 17.5 (continued)

Variable	1993			2004				
	Multiple drafts	Oral presentations	Student evaluations each other's work	Multiple drafts	Oral presentations	Student evaluations each other's work	Group projects	Service-learning assignments
	%	%	%	%	%	%	%	%
Mathematics and statistics	33.8	65.9	41.2	17.1	27.1	15.9	37.1	7.8
Philosophy	41.2	68.7	39.8	42.7	57.0	24.7	38.4	16.6
Physical sciences	38.7	63.8	39.9	29.0	40.4	18.1	46.7	7.9
Psychology	37.7	70.3	44.2	46.7	60.5	28.9	55.2	27.5
Other social sciences	34.7	67.4	41.4	46.0	58.1	24.2	42.3	24.2

Note All percentages are based on weighted scores; due to rounding, totals may not equal 100

To create similar categories for 1993 and 2004, some teaching disciplines were combined; across the two time points, some of the categories listed may include slightly different mix of disciplines. Faculty members in "other" categories not included

In both the last decade of the twentieth century as well as in the first decade of the new millennium, more than 50 % of all faculty members in both NSOPF surveys reported using oral presentations in at least some of their classes and about twice as many 2004 faculty used multiple drafts in all classes compared to rates in 1993. In general, faculty in the arts and humanities disciplines reported higher use of the assessment techniques compared to mathematics, engineering, and physical sciences. This finding is consistent with differences in the use of deep learning approaches and significant differences found by discipline (Nelson Laird and Garver 2010). In addition, changes in student enrollments over the decade, the addition or elimination of certain undergraduate majors, and increased discussion of learner-centered instruction and assessment may affect the frequency of use from 1993 to 2004.

Two additional techniques that fit the definition of learner-centered assessment were included in the 2004 survey. These additions for the use of group/team projects and service learning may likely reflect new considerations in how faculty can best facilitate student learning today. About half of the respondents said they used group or team projects in at least some classes and about 25 % said they used service-learning/co-op projects. Although about one-quarter of the faculty said they used of service learning in at least some classes, it is the least used of the five assessment techniques. This lower use may be due to the specific courses being offered during the time the survey was completed, faculty member lack of familiarity with how to incorporate the techniques, and/or institutional resources (or lack of) for service activities. The negative relationship between satisfaction with workload and use of the assessment techniques (confirmed in separate correlation analyses), and that the relationship is even more strongly negative in 2004, is concerning. Faculty may experience and/or perceive expectations for spending more time on instruction, which may leave less time for research, service, or other activities.

The use of assessment techniques over the 11 years from 1993 to 2004 came at a time when US postsecondary education has experienced changes in faculty demographics and economic declines that might have affected the amount of time apportioned to various work tasks, expectations for teaching versus research, institutional decisions on resource allocation, and, perhaps, an indication of some level of institutional isomorphism. Compared to 1993 demographic characteristics, more of the 2004 respondents were female, employed in tenure-ineligible lines, and serving as lecturers. Similar to Umbach's (2008) results, current findings show that full-time faculty members use these assessment techniques more frequently than their part-time peers.

It is quite possible that changes in the use of learner-centered assessment may be affected by faculty demographics and/or institutional resources. For example, lecturers, part-time faculty, or those with higher teaching loads may not feel as committed to putting forth extra efforts for instruction and/or receive fewer opportunities for faculty development that emphasize these innovations. Lower state appropriations in the new millennium may have forced institutions to cover a higher percentage of costs for instruction through other means and may have

resulted in reduced resources allocated for tenure-track faculty and instruction (such as computers and/or classroom renovations for small group discussions). As competition for students and star faculty continues, institution officials seek to incorporate policies and practices that attract prospects. For some institutions, the strategy has been to market itself uniquely, while for others, it is to engage in activities accomplished by aspirants. When this happens, it can lead to an institution that looks more like many others than a unique institution, perhaps affirming DiMaggio and Powell's (1983) assertion of institutional isomorphism.

Although it would go counter to a claim for institutional similarity across all institutional levels, it is not fully surprising that faculty at bachelor's and master's granting institutions reported higher use of these techniques than doctoral universities. Typically, the mission of bachelor's and master's level institutions in the USA is more focused on teaching, and therefore, one would expect to find greater emphasis and reward for progressive teaching and assessment practices. However, the finding of lower satisfaction with workload may make sense based on their higher teaching loads than peers in doctoral institutions. Faculty in associate-granting institutions may be less likely to adopt learner-centered assessment practices and more likely to emphasize students' comprehension of factual knowledge because of the focus on vocational training. Interestingly, however, faculty in two-year colleges showed the highest use of service-learning techniques, which makes sense in light of the strong mission of two-year institutions to meet the needs of their surrounding community. While some scholars such as Ewell (2002) argue for the benefits of learner-centered assessment at all levels of post-secondary education, results showed lower use of the assessment techniques in doctorate-granting universities than all other institution types. Perhaps there is greater resistance to change for faculty in doctoral institutions, and perhaps it is due to greater faculty focus on tasks other than teaching (i.e., research), not knowing how or not feeling comfortable with new assessment techniques in large classes, or not seeing institutional reward for incorporating innovations in teaching.

As shown in the tables above, differences in the use of learner-centered assessment were found in the proportion of use by gender, rank, discipline, time status, and institution level. Differences by discipline generally showed that instructors who teach humanities and education courses use these assessment techniques more than faculty in other fields. This difference by discipline, however, could be affected by changes in majors as well as changes in the composition of faculty (to more female, lecturers, and those on non-tenure track). Additional analyses for the use of assessment techniques by demographic characteristics at the institution level are warranted, as well as additional data that can match assessment techniques to actual learning.

Differences by individual characteristics previously noted may indicate some, but relatively small, level of individual resistance to change. The average age of respondents in 2004 was almost 3 years older than that from 1993, which may indicate some "graying" of the professoriate in general. Faculty who were employed in postsecondary education in both 1993 and 2004 may have become

more willing to incorporate these techniques over time, or perhaps moved into positions in which they spent less than 50 % of their time in instruction. On the contrary, however, the fact that full professors use the techniques less (at both time points) may indicate some resistance to change, especially after one has reached the security of tenure. It is curious that faculty who use the techniques reported lower satisfaction with workload. Perhaps this indicates that the assessment techniques were perceived to take more time or effort than traditional assessments such as multiple choice examinations and, as a result, cause a negative effect on satisfaction with workload. The finding that faculty in the physical science and engineering disciplines use these techniques less than peers in the humanities and soft sciences may indicate important differences in the curriculum; however, the fact that there is consistently lower use by faculty in the science and engineering disciplines in 1993 and 2004 may also indicate some resistance to change. Such hesitancy from a large group of faculty could thwart an institution's ability to change and would mitigate the incorporation of new innovations such as learner-centered assessment into its accountability procedures.

Larger institutions and/or those with a higher student to faculty ratio may have more resources (both facilities and operating dollars) for faculty development, facilities, and equipment that may aid the use of these techniques. However, some smaller colleges that specifically seek a high student focus may have activities and instructional innovations embedded in the institution's culture and that facilitate learner-centered assessment. Although differences in institutional apportionments to instruction would be counter to the concept of isomorphism, I hypothesized that institutions that allocate more funds to instruction would have faculty who use these techniques more frequently. Additional funds, I thought, would prompt the inclusion of faculty workshops and other training that would contribute to an enlivened culture of innovative instruction and assessment for learning. I do not know that faculty training did not occur; perhaps it did, but is not part of the available data. Additional study of the role of resources apportioned to instruction is also merited. Perhaps the use of the instructional expense ratio is not detailed enough. For example, the portion of instructional funds committed separately for activities such as salaries, classroom renovation, and expenses for assessment may provide greater insight.

Although the use of learner-centered assessment can be an effective gauge to measure authentic learning, the use of these techniques alone does not ensure high levels of student learning. Data in the NSOPF surveys do not include measures of learning, so it is not possible to know from these data the true relationship between the use of assessment techniques and actual learning outcomes. Data that directly link instructional pedagogy, assessment techniques, and discrete learning outcomes are needed, but I know of no multi-institution or national data source that is available for study. It is also possible that faculty may have reported higher use of the assessment techniques than were actually implemented. Similar data from students on their experience with these techniques would help to corroborate, but are not available in these data.

Faculty who responded to these surveys may have engaged in these assessment techniques before or after the two-year period, and thus, the rates reported herein represent efforts only for that two-year period. It is also acknowledged that all data are captured from two self-report surveys. Respondents could have inflated their responses, but in general, self-report data are purported to be reasonably accurate (Tourangeau et al. 2000).

17.9 Implications and Recommendations

It is clear from this body of research that learner-centered assessment is considered a valued practice in higher education today. Findings from this study confirm the use of learner-centered assessment techniques in higher education in the new millennium and reveal that many faculty members have embraced learner-centered assessment techniques as an effective way to measure and promote student learning. Because faculty reports in 2004 showed similar or higher use for many of the assessment techniques in relation to faculty in 1993, resistance to change appears minimal. Where there is less resistance, innovations in assessment can more easily occur, and such innovations can be a sign of organizational change. It seems likely that the larger assessment movement in higher education has taken hold in the classroom, and the use of these assessment techniques can be one piece of an institution's effectiveness plan. Thus, findings herein may indicate that organization change has occurred in the use of learner-centered assessment in the classroom and as a measure of institutional accountability.

While there is evidence of learning assessment occurring in all levels of post-secondary education, the extent to which faculty use these techniques varies by institution, faculty type, and assessment technique. For example, faculty members appear less likely to use peer evaluation and service-learning/co-op opportunities than other techniques. This may be due to less familiarity with these techniques and/or more resources needed to implement them. However, a growing body of literature propels service learning as a highly effective pedagogical technique. Smith (2008), for example, distinguished it as, "one of the most pervasive education innovations of the past generation" (p. 5). Vogelgesang and Astin (2000) described it as a, "potentially powerful form of pedagogy," highlighting the value of students connecting content learned in the classroom to "real-world" problems (p. 25). These quotes capture the belief that infusing service learning into traditional curricula can improve student learning outcomes. To ensure continued and increased use of these techniques, senior administrators might showcase existing good practice as well as consider the allocation of resources for workshops or other training seminars to help faculty become familiar with service-learning and other related techniques. In addition, skilled professionals in offices of teaching and learning should be called upon to lead or facilitate workshops. These professionals are often quite knowledgeable of proven and best practice activities related to teaching and learning.

In addition to contributing to the success of faculty, these findings have implications for student success. If these techniques promote more effective learning, and if students become aware of differences based on the use of these techniques, students may wish to enroll in courses that include these assessment activities. The increase in the use of multiple drafts may indicate that students learn in successive approximation. Multiple drafts may allow students to focus on one or two points at a time, gradually incorporating pieces of knowledge or more advanced writing skills. By using these techniques more often, female faculty may develop a more interactive, friendly environment in the classroom. Because a positive environment and good faculty-student rapport encourages student engagement (Angelo and Cross 1993; Kuh 1996; McKeachie et al. 1971), institutional leaders may wish to encourage the use of these assessment techniques, perhaps through faculty workshops or other additional expenditures apportioned to instruction. Since, however, female faculty members are using these techniques more than male peers, institutional leaders may wish to emphasize the benefits of these techniques to male faculty and monitor enrollments by faculty gender to ensure even enrollments for male and female faculty.

The fact that full-time faculty are using these techniques more than part-time peers may indicate greater dedication to instruction for full-timers. Another explanation is that full-time faculty have more time to prepare for instruction generally and assessment activities in particular. Full-time faculty may also have more opportunities to participate in professional development opportunities, such as training workshops and discussions with other faculty on innovations in teaching and learning. As a result, full-time faculty may also be more motivated to integrate progressive practices in their classes. As institution officials employ more part-time faculty during economic downturns, caution must be taken and to ensure that the quality of instruction and assessment of learning does not decrease. Clear messages on the importance of effective assessment as well as faculty training to provide needed information and guidance on how to ensure effective pedagogy and learner-centered assessment may be required.

Interestingly, results demonstrated that tenured faculty members used some of these assessment techniques less than the non-tenured faculty. Consistent with that reported by Kezar and Sam (2010), this finding may be due to the fact that non-tenured faculty are earlier in their career, recently our graduate school and/or spend more time on instruction (while full professors may be more engaged in research), and/or could also indicate that more non-tenured faculty members are working in institutions that have a stronger focus on instruction. These institutions may provide training in learner-centered assessment or otherwise encourage the use of these assessment techniques. If institutional leaders desire higher use of these activities, faculty training should be offered, as well as clear messages on the value of learner-centered assessment.

Differences in frequency of use by discipline may be the result of different topical content and/or cultural differences by department. For example, faculty who teach courses with more hands-on applications of content may find it easier to integrate learner-centered techniques in their courses. It is noteworthy that, in

general, even though the use increased from 1993 to 2004, faculty members in many of the hard disciplines report using these techniques less than peers in the soft disciplines. While medical school and some biology curricula have used problem-based learning for at least two decades (Duch et al. 2001; Wood 2004), some other science disciplines may not be using this or other pedagogies that include learner-centered assessment. Institution officials may wish to showcase the innovations of select faculty who can serve as peer mentors and role models to other faculty. To help propel the message, institutions' officials may wish to provide small summer stipends for faculty members who incorporate new assessment techniques in their courses or designate a learner-centered instructor of the year. Along with summer stipends, there are a number of relatively inexpensive institutional activities or rewards that can be offered to encourage faculty to increase their use of learning assessment which may in turn contribute to continued institutional success.

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Chapter 18
Application of Formative Assessment in a Chinese EFL Course

Chunping Zheng and Chuhan Li

Abstract In this paper, the authors developed a tentative model for assessing learners' public speaking competence by incorporating formative assessment practices with conventional summative assessment tools in a Chinese EFL public speaking course. An exploratory experiment was carried out over 16 weeks. Fifty-six learners participated in the experiment with randomized assignment into one of two groups: an experimental group ($N = 28$) with the application of the tentative assessment model and a control group ($N = 28$) with the conventional assessment model. Results indicated that the learners in the experimental group demonstrated significantly better performance in public speaking, particularly in terms of their delivery skills. The analysis of learning journals and post-experimental survey also showed learners' positive perception of the tentative assessment model.

Keywords Formative assessment · Summative assessment · English public speaking · College English teaching

18.1 Introduction

Educational assessment aims at evaluating and further improving the effects of teaching and learning. It is generally apparent in the form of summative assessment, in which students look for ways to obtain the best grades rather than to improve their learning (Buldu and Buldu 2010). The situation is quite similar in the conventional Chinese English as a Foreign Language (EFL) teaching and learning setting, where learners' grades are highly emphasized. As a result, learners still lack an adequate

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ability to communicate in English and most students are perceived to have graduated with 'Yaba English (which refers to the phenomena that EFL learners in China fail to communicate in English)' (Liu and Dai 2003, p. 8).

With the recognition of the positive influence of formative assessment on student learning in recent decades (Black and Wiliam 1998a; Kennedy et al. 2008; Pellegrino et al. 2001), formative assessment is increasingly being implemented through policy initiatives in Chinese educational contexts (Chen et al. 2013). As stated in the official document, namely the *College English Curriculum Requirements*, the Chinese government started to promote 'a comprehensive, objective, scientific and accurate assessment system' in the college English teaching setting (CMoE 2007). Being different from the conventional assessment system, this system emphasizes the incorporation of formative assessment tools with conventional summative assessment practices.

As an important elective course in the English curriculum for EFL students in China, the English public speaking course has played an important role in Chinese college English teaching over the past few decades. Yin (2005) claimed that the 'emergent trend of integrating public speaking into the English curriculum may signify the beginning of a new era in the English instruction of Chinese higher education'. The course was designed to improve learners' integrated skills in composing and delivering English public speeches. What constitutes the effective assessment of learners in the English public speaking course and how the assessment promotes the process of teaching and learning has become a critical issue for both researchers and practitioners.

The present study introduces a tentative assessment model in the English public speaking course at a comprehensive university in China. It attempts to utilize the positive effects of assessment on students' learning and improve learners' public speaking competence by incorporating effective formative assessment practices with conventional summative assessment tools.

18.2 Theoretical Background

The term 'formative and summative assessment' was suggested by Michael Scriven in 1967 to explain their distinct roles in evaluating curriculum (see Sardareh and Saad 2012). Scriven (1991) stated formative assessment is typically conducted during the development or improvement of a programme, product or person and so on, and it is conducted often more than once, on the contrary, summative evaluation usually takes place after the teaching–learning process. Sadler (1998) further explained that formative assessment refers to the assessment that is specially intended to generate feedback on performance to improve and accelerate learning. Black and Wiliam (1998b) argued the positive effects of formative assessment on improving students' achievement.

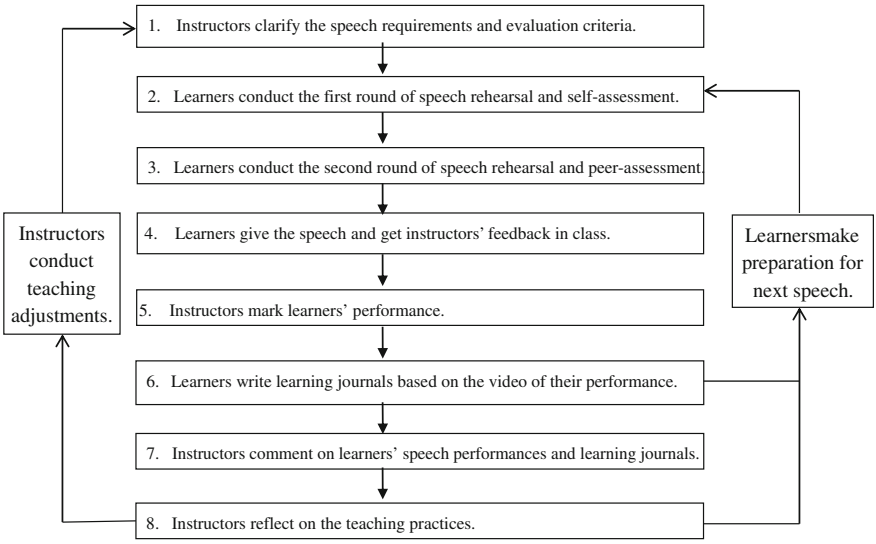

Fig. 18.1 A tentative assessment model for an English public speaking course

Since the twenty-first century, there has been much literature recording theoretical and empirical studies on formative assessment in the college English teaching at Chinese universities (Tang and Zhang 2007). More recent research in the area has mainly focused on English reading and writing courses, while there is still little written concerning the application of formative assessment in oral English classes at Chinese universities. Wang and Zhang (2008) applied the formative assessment model to courses for English major undergraduate in China. Wen (2011) formulated a formative assessment model for a postgraduate course. This article proposes a tentative model of formative assessment for an English public speaking course targeted at EFL students in China and further explores its effectiveness. As shown in Fig. 18.1, with the application of this assessment model, both the learners and instructors are required to participate in a series of formative and summative practices. At the very beginning, the teacher clarifies the learning intention and criteria for evaluating the public speech. Then, learners play an active role in monitoring their learning progress with constant communication and collaboration with their teacher and peer students. The principle for designing this assessment model is consistent with that of Sardareh and Saad (2012), who also emphasized that learners should not only learn about learning intentions but also about the scaffolding they will receive in order to achieve learning intentions.

Fig. 18.2 A snapshot of learner's in-class public speaking performance

18.3 Method

18.3.1 Course Introduction

The current study took place in an English public speaking course for EFL learners at a comprehensive university in China. The course was targeted at improving the English public speaking skills of EFL learners. It was conducted in a video-camera-equipped classroom which was powered by Smart PR-2005, an automatic videotaping device developed by Shanghai Able Electronic Co, Ltd. During the course, learners were required to make three public speeches in class and their performance was recorded by the videotaping device. A snapshot is provided showing the learners' in-class performance in Fig. 18.2. The course lasted for 16 weeks with a 2-h class period per week.

18.3.2 Participants

The participants of this study consisted of 56 Chinese adult EFL learners (27 male and 29 female students). All of them were voluntary participants in the course, who had no experience of attending an English public speaking course before.

18.3.3 Procedure

Before the start of the teaching experiment, the learners were randomly assigned into one of two groups: an experimental group ($N = 28$) with a newly designed formative assessment model and a control group ($N = 28$) with a summative assessment model. Then, learners in both groups received two hours of instruction about the course and the assessment model.

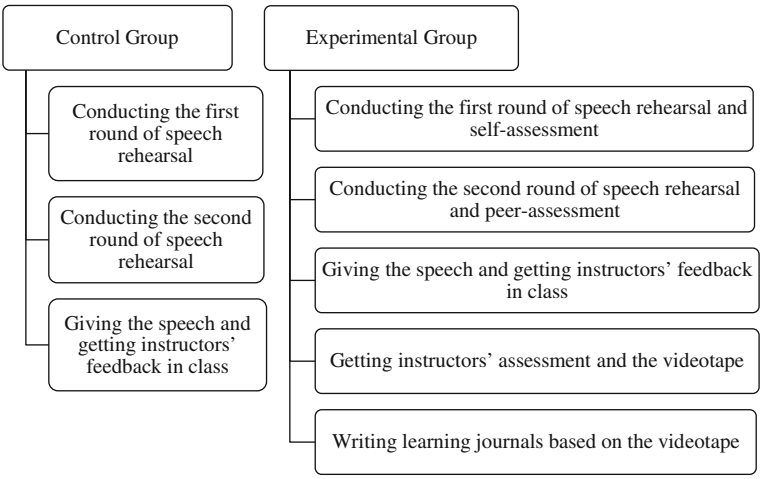

Fig. 18.3 Two different assessment models for the control and experimental groups

As indicated in Fig. 18.3, learners in the control group went through two rounds of rehearsal before delivering the public speech in class. Learners in this experimental group were asked to complete a self-assessment and peer assessment after the rehearsal. In addition, the teachers' assessment results and the videotapes of their public speech performance would also be given back to them for self-reflection. At the end of the public speech, learners in the experimental group were asked to write learning journals as well.

18.3.4 Instruments

18.3.4.1 Pre-experiment Test

A preliminary test was administered before the teaching experiment. The focus of the pretest was to determine learners' comprehensive ability to use English language, including listening, speaking, reading and writing. Since all of the learners had participated in the college English test (CET, Band-4) in September 2009, their scores in that test reported learners' ability in listening, writing and integrated skills and were then used as part of their pretest scores. In addition, an oral English test was conducted before the experiment to evaluate learners' speaking ability.

18.3.4.2 Assessment of Learners' English Public Speaking Ability

This study adopted the evaluation form designed by Lucas and Suya (2011) for assessing learners' ability to give an English public speech. As indicated in

Appendix A, the evaluation form mainly focuses on the following four parts: introduction, body and conclusion of the public speech, as well as learners' delivery skills of public speaking. The first three parts indicate learners' comprehensive ability to use English in public speaking, while the last part shows learners' ability to communicate. Both the learners and instructors used the evaluation form to conduct self-assessment, peer assessment and teacher assessment.

18.3.4.3 Post-experiment Survey

A 46-item post-experimental survey (see **Appendix B**) was conducted 1 week after the teaching experiment with the experimental group. It mainly investigated learners' perception of the tentative assessment model. The learners were asked to rate their level of agreement with a specific statement (from 1—strongly disagree to 5—strongly agree).

18.4 Results and Discussion

18.4.1 Pre-experiment Test

As shown in Table 18.1, there is no significant difference between the two groups in terms of learners' comprehensive ability to use English language ($p > 0.05$). Therefore, we can conclude that before the experiment, learners in both groups have similar English language proficiency in terms of their speaking, listening, writing and integrated skills.

18.4.2 Learners' English Public Speaking Ability

Table 18.2 reports the scores of learners' English public speaking ability. The scores were given by two teacher educators based on the evaluation form in Appendix A (the Cohen's Kappa of inter-teacher reliability is 0.843). From Table 18.2, we can see the learners' scores in both groups are gradually increasing. By conducting two-way repeated measures ANOVA, it was found that there were statistically·significant differences between the three speeches ($F(2, 108) = 12.882$, $p < 0.05$). Therefore, we conclude that by the end of the semester, learners in both groups have made a gradual progress in their English public speaking ability.

Then, we conducted the two-way repeated measures ANOVA of the assessment model and the results indicated that two different assessment models had significantly different effects on learners' scores ($F(1, 54) = 6.691$, $p < 0.05$). The independent t test results indicated that there is no difference between learners' scores of the Speech 1 ($t = 0.281$, $p > 0.05$), but there are significant differences

Table 18.1 Descriptive results of learners' scores in the pre-treatment test

Factors	Groups	N	Mean	S.D.	t	p
Speaking	Group 1	28	80.11	4.79	−0.078	0.610
	Group 2	28	80.29	5.57		
Listening	Group 1	28	201.11	23.54	−0.879	0.383
	Group 2	28	206.46	22.04		
Writing	Group 1	28	104.54	9.45	0.146	0.884
	Group 2	28	104.18	8.79		
Integrated skills	Group 1	28	58.57	7.61	−0.400	0.691
	Group 2	28	59.26	5.60		

Group 1 = experimental group
Group 2 = control group

Table 18.2 Descriptive results of scores for learners' performance of English public speaking

Speeches	Experimental group ($N = 28$)		Control group (N= 28)	
	Mean	S.D.	Mean	S.D.
Speech 1	69.32	9.42	68.75	5.24
Speech 2	73.25	4.51	68.71	5.10
Speech 3	76.50	8.01	72.14	4.75

between learners' scores of the Speech 2 ($t = 3.526$, $p < 0.05$) and Speech 3 ($t = 2.476$, $p < 0.05$). With the progression of the teaching experiment, learners in the experimental group have gained higher scores than the control group. Based on the descriptive data in Table 18.2, we can see that the tentative assessment model has a greater effect on improving learners' English public speaking ability.

18.4.3 Learners' Comprehensive English Language Ability

Table 18.3 presents the scores of learners' comprehensive English language ability. By conducting two-way repeated measures ANOVA, we found there were statistically significant differences between the scores ($F(2,108) = 8.658$, $p < 0.05$). Based on the descriptive data, we concluded that learners had made progress in their comprehensive ability to use English. However, the two-way repeated measures ANOVA of the assessment model indicated that two different assessment models had little effect on learners' different scores in comprehensive ability ($F(1, 54) = 1.694$, $p > 0.05$). Though the learners in both groups were improving their comprehensive ability to use English, there was no strong evidence to show that the difference in improvement in comprehensive language ability was caused by the different assessment models.

Table 18.3 Descriptive results of scores for learners' comprehensive ability to use English language

Speeches	Experimental group ($N = 28$)		Control group ($N = 28$)	
	Mean	S.D.	Mean	S.D.
Speech 1	40.89	5.91	43.04	3.21
Speech 2	43.18	3.13	40.32	3.27
Speech 3	45.43	5.12	43.07	3.11

Table 18.4 Descriptive results of scores for learners' delivery skills of English public speaking

Speeches	Experimental group ($N = 28$)		Control group ($N = 28$)	
	Mean	S.D.	Mean	S.D.
Speech 1	28.43	3.80	25.71	3.63
Speech 2	30.07	1.63	28.39	2.51
Speech 3	31.07	3.13	29.07	2.16

18.4.4 Learners' English Public Speech Delivery Skills

Table 18.4 shows the descriptive results of scores for learners' English public speaking delivery skills. The results of two-way repeated measures ANOVA of the learners' delivery skills in these three speeches indicated that learners had significant differences in terms of their scores ($F(2, 108) = 18.902$, $p < 0.05$).

The ANOVA also shows the assessment model had differentiating effects on learners' scores in delivery skills ($F(1, 54) = 16.819$, $p < 0.05$). Based on the descriptive data in Table 18.4, learners' English public speech delivery skills in both groups increased gradually; however, those in the experimental group showed significantly better results than those in the control group.

18.4.5 Post-experiment Survey

The post-experiment survey investigated participants' attitudes towards the different formative tools used by the tentative assessment model in the experimental group. As indicated in Table 18.5, most of the mean scores for those practices were above four points except the score for the effectiveness in improving comprehensive language ability, which was about 3.98 points. From the data, we

Table 18.5 Participants' attitudes towards the effectiveness of the attentive assessment model in experimental group

Category	Items	Mean	S.D.
Peer assessment	Overall attitude (1, 2, 3)	4.49	0.52
	Effectiveness in improving comprehensive language ability (4, 5)	3.98	0.99
	Effectiveness in improving the structure and cohesion of the speech (6, 7, 8, 9)	4.35	0.58
	Effectiveness in improving the delivery of speech (10)	4.61	0.78
Teacher assessment	Overall attitude (11, 12, 13)	4.45	0.66
	Effectiveness in improving comprehensive language ability (14, 15)	4.41	0.72
	Effectiveness in improving the structure and cohesion of the speech (16, 17, 18, 19)	4.45	0.54
	Effectiveness in improving the delivery of speech (20)	4.46	0.74
Self-assessment	Overall attitude towards self-report (21, 22, 23)	4.38	0.61
	Effectiveness of videotaping (24, 25, 26, 27, 28, 29, 31)	4.40	0.43
	Effectiveness of learning journals (32, 33, 34, 35, 36)	4.28	0.78
Overall	Overall effectiveness of formative assessment practices (37, 38, 39, 40, 41, 42, 43, 44, 45, 46)	4.44	0.41

Numbers in parentheses indicate the survey questions that make up each category $N = 28$

concluded that students held a positive attitude towards the formative practices and also acknowledged the effectiveness of the tentative assessment model for the English public speaking course.

18.4.6 Summary of the Learning Journals

Learners in the experimental groups were required to write about and reflect on their experience as it related to the tentative assessment model used in the English public speaking course. By reviewing the learning journals, researchers witnessed learners' consistent reflection on their own public speaking ability.

The following student quotes are typical and vividly recorded their learning experiences:

> It's my first public speech at my university. I was a little nervous, but I expressed my main idea to the audience successfully and achieved my speech plan. I thought the experience of giving this speech was good for me because it helped me learn a lot of different ways to make a speech.
> I did a poor job today and I kept looking at my note cards although I had memorized all the paragraphs. My confidence decreased every time I looked at the cards. I didn't even remember to make any hand gestures.

I did not have enough eye contact with the audience, and my speech was not interesting enough. What's more, the topic was not interesting and I had to try my best to improve my speech next time.

The videotapes of learners' in-class public speech gave students a good chance to reflect on their own performance and find their own weaknesses. As two students remarked:

I did appreciate the chance to make my voice heard in class, and I think reviewing the video is quite helpful.
I have learnt how to control my facial expressions and maintain eye contact.

The two rounds of speech rehearsal and the final round of public speaking in class also had benefits for the learners in overcoming stage fright and encouraging them to speak. As several students noted:

I have overcome stage fright and become more confident in front of my classmates.
I became more eloquent in speaking English than before.
I've learned how to look good on the stage.

In general, students mentioned the benefits of the application of the tentative assessment model which enabled them to have more opportunities to reflect and further improve their public speaking ability.

My instructor and peer helped me a lot in improving my pronunciation and intonation.
I think this course is very interesting and it combines education with recreation.

18.5 Conclusion

In this study, 56 learners were assigned into one of two groups: an experimental group applying a tentative assessment model and a control group applying a summative assessment model. Learners' scores of their three formal speeches and their learning journals were collected and further analysed. The results obtained have shown that the tentative assessment model played a more effective role in improving learners' performance of English public speaking as opposed to the conventional summative assessment model. The tentative assessment model made full use of formative assessment activities, such as self-assessment, peer assessment and teacher assessment to improve learners' English public speaking ability. By completing a series of formative assessment activities, learners had more opportunities to communicate and further collaborate with their peers and the teacher. They also received more detailed advice from the peers and the teacher, which further enhanced their competence in making public speeches.

Though the current study focused on an English public speaking course for EFL students in China, it provided an effective assessment model for other courses in the college English curriculum as well. The small sample size of the study should be noted, and further efforts made to explore how both formative and summative assessments can be incorporated into other EFL courses to promote the learning and teaching.

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Appendix A

Evaluation form for learners' ability to give an English public speech

Parts	Criteria	Grade[a]
Introduction	Gained attention and interest	E G A F P
	Introduced topic clearly	E G A F P
	Related topic to audience	E G A F P
Body	Main points clear	E G A F P
	Organization well planned	E G A F P
	Language accurate	E G A F P
		E G A F P
	Language clear	E G A F P
	Language appropriate	E G A F P
	Connectives effective	E G A F P
Conclusion	Prepared audience for ending	E G A F P
	Reinforced central idea	E G A F P
	Vivid ending	E G A F P
Delivery	Began speech without rushing	E G A F P
		E G A F P
	Maintain strong eye contact	E G A F P
	Avoided distracting mannerisms	E G A F P
		E G A F P
	Articulated words clearly	E G A F P
	Used pauses effectively	E G A F P
	Used vocal variety to add impact	E G A F P
		E G A F P
	Communicated enthusiasm for topic	
	Departed from lectern without rushing	
General Comments		

[a] *E* excellent (=5), *G* good (=4), *A* average (=3), *F* fair (=2), *P* poor (=1)

Source: adapted from Lucas and Suya (2011). The Art of Public Speaking (teacher's book), Tenth Edition. Beijing: Foreign Language Teaching and Research Press. With the permission of using the form by Lucas, S. E. and FLTRP.

Appendix B

A.0.1 Post-experiment Survey for the English Public Speaking Course

Please rate the following items based on the degree of your approval.

5: Strongly Agree
4: Agree
3: Neutral
2: Disagree
1: Strongly Disagree

I. **Peer Assessment**

1. I feel comfortable with peer assessment.

   A. 5 B. 4 C. 3 D. 2 E. 1

2. I don't think peer assessment is time-consuming.

   A. 5 B. 4 C. 3 D. 2 E. 1

3. I think peer assessment is objective.

   A. 5 B. 4 C. 3 D. 2 E. 1

4. Peer assessment is useful in improving my grammar.

   A. 5 B. 4 C. 3 D. 2 E. 1

5. Peer assessment is useful in improving my vocabulary.

   A. 5 B. 4 C. 3 D. 2 E. 1

6. Peer assessment is useful in improving the organization of my speech.

   A. 5 B. 4 C. 3 D. 2 E. 1

7. Peer assessment is useful in improving the development of my speech.

   A. 5 B. 4 C. 3 D. 2 E. 1

8. The peer assessment is useful in improving the unity of my speech.

   A. 5 B. 4 C. 3 D. 2 E. 1

9. Peer assessment is useful in improving the cohesion of my speech.

A. 5 B. 4 C. 3 D. 2 E. 1

10. Peer assessment is useful in improving the delivery of my speech.

A. 5 B. 4 C. 3 D. 2 E. 1

II. **Instructor Assessment**

11. I feel comfortable with instructor assessment.

A. 5 B. 4 C. 3 D. 2 E. 1

12. I don't think instructor assessments is time-consuming.

A. 5 B. 4 C. 3 D. 2 E. 1

13. I think instructor assessment is objective.

A. 5 B. 4 C. 3 D. 2 E. 1

14. Instructor assessment is useful in improving my grammar.

A. 5 B. 4 C. 3 D. 2 E. 1

15. Instructor assessment is useful in improving my vocabulary.

A. 5 B. 4 C. 3 D. 2 E. 1

16. Instructor assessment is useful in improving the organization of my speech.

A. 5 B. 4 C. 3 D. 2 E. 1

17. Instructor assessment is useful in improving the development of my speech.

A. 5 B. 4 C. 3 D. 2 E. 1

18. Instructor assessment is useful in improving the unity of my speech.

A. 5 B. 4 C. 3 D. 2 E. 1

19. Instructor assessment is useful in improving the cohesion of my speech.

A. 5 B. 4 C. 3 D. 2 E. 1

20. Instructor assessment is useful in improving the delivery of my speech.

A. 5 B. 4 C. 3 D. 2 E. 1

III. **Speech Presentation and Video Reviewing**

21. I feel comfortable about being videotaped.

A. 5 B. 4 C. 3 D. 2 E. 1

22. I don't think reviewing the video files of my class presentation is time-consuming.

A. 5 B. 4 C. 3 D. 2 E. 1

23. I can view my performance objectively from the video files.

A. 5 B. 4 C. 3 D. 2 E. 1

24. I can improve my appearance by reviewing the video files of my own in-class performance.

A. 5 B. 4 C. 3 D. 2 E. 1

25. I can learn to better control my facial expressions by reviewing the video files of my own in-class performance.

A. 5 B. 4 C. 3 D. 2 E. 1

26. I can learn to maintain better eye contact by reviewing the video files of my own in-class performance.

A. 5 B. 4 C. 3 D. 2 E. 1

27. I can learn to better control my body movements and gestures by reviewing the video files of my own in-class performance.

A. 5 B. 4 C. 3 D. 2 E. 1

28. I can improve my pronunciation and intonation by reviewing the video files of my own in-class performance.

A. 5 B. 4 C. 3 D. 2 E. 1

29. I can improve my English fluency by reviewing the video files of my own in-class performance.

A. 5 B. 4 C. 3 D. 2 E. 1

30. I can overcome stage fright by reviewing the video files of my own in-class performance.

A. 5 B. 4 C. 3 D. 2 E. 1

31. I can make progress in my emergency-coping ability by reviewing the video files of my own in-class performance.

A. 5 B. 4 C. 3 D. 2 E. 1

IV. **Learning Journal Writing**

32. I feel comfortable writing a learning journal after every speech.

A. 5 B. 4 C. 3 D. 2 E. 1

33. I don't think writing a summary is time-consuming.

A. 5 B. 4 C. 3 D. 2 E. 1

34. I am objective when I write the summary.

A. 5 B. 4 C. 3 D. 2 E. 1

35. I can get effective feedback from instructor after writing the summary.

A. 5 B. 4 C. 3 D. 2 E. 1

36. I can benefit from reviewing the summary.

A. 5 B. 4 C. 3 D. 2 E. 1

V. **Overall Evaluation**

37. I have improved in how to write effective public speeches in English.

A. 5 B. 4 C. 3 D. 2 E. 1

38. I have improved in how to deliver public speeches in English.

A. 5 B. 4 C. 3 D. 2 E. 1

39. I have improved in my skills of intercultural communication.

A. 5 B. 4 C. 3 D. 2 E. 1

40. I have improved in my self-learning ability.

A. 5 B. 4 C. 3 D. 2 E. 1

41. I have improved in my skills of critical thinking.

A. 5 B. 4 C. 3 D. 2 E. 1

42. I have improved in effectively listening to public speech.

A. 5 B. 4 C. 3 D. 2 E. 1

43. I have improved in my ability to utilize research skills and strategies.

A. 5 B. 4 C. 3 D. 2 E. 1

44. I have become more confident in making an English public speech.

A. 5 B. 4 C. 3 D. 2 E. 1

45. I have become more interested in making public speeches in English.

A. 5 B. 4 C. 3 D. 2 E. 1

46. I think the assessment system of this course is very good.

A. 5 B. 4 C. 3 D. 2 E. 1

Thank you very much for your cooperation!

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Erratum to: Examining Instructional Interventions: Encouraging Academic Integrity Through Active Learning Approaches

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