Jung Cheol Shin · Ulrich Teichler   *Editors*

The Future of the Post-Massified University at the Crossroads

Restructuring Systems and Functions

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at the Crossroads

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Preface

This book is designed to lead academic and policy discussions on the future of the university. Modern universities have been experiencing remarkable growth in terms of access. Some countries are approaching the point of almost 100 % tertiary enrollment. In addition, academic research has grown exponentially in the knowledge society. However, notwithstanding these growths, contemporary universities are confronted with critical challenges. The major challenges are how to harmonize different missions, e.g., teaching, research, and service. These missions seem well coordinated in their nature; however, many empirical studies found that these missions conflict each other. Universities have begun to apply the division of labor between teaching-efficient and research-efficient professors, and some universities even hire professors for community service. The decoupling between teaching, research, and service has become wider recently. The modern university started as an innovative model—research-driven teaching and service model in the nineteenth century—but the contemporary university is having an identity crisis.

There are some academic contributions on the future of the university. Many books on the future of the university focus on projecting the future of the university based on their academic and administration experiences. Many of these books focus on the US higher education system and discuss the future of governance, finance, academic profession, and also include how technological development affects the future of the university. Well-known books include: *Beyond 2020: Envisioning the Future of Universities in America* (2009), edited by Mary Landon Darden; *The Innovative University: Changing the DNA of Higher Education from the Inside Out* (2011), authored by Henry Eyring and Clayton Christensen; and *The Future of the Public University in America: Beyond the Crossroads* (2004), authored by James J. Duderstadt and Farris W. Womack. Rarely have books been published outside of the USA. This fact indicates that contemporary higher education is led by US universities. Two interesting books are *A Chance for European Universities* (2010) by Jo Ritzen and *Beyond Mass Higher Education* by Ian McNay (2006). However, these books hardly pay attention to the main functions of the university— teaching, research, and service.

Since the modern university emerged in the early nineteenth century, it has expanded research functions under the name of service in the US land-grant universities in the mid-1800s, during and after the two World Wars, through scientific competitions in the Cold War, and via information technology and the knowledge society since the 1970s. The emphasis on research contributed a lot to social and industrial development. Scientific and engineering development was not possible without university research. Government policy also leads to close links between university research and social and industrial development through funding policies. Recently, universities have placed more weight on research with respect to the world-class university and global rankings. The lion's share of triple functions—teaching, research, and service—is questionable and research began to dominate the other two functions. Now, the university is having an identity crisis as a social institution of teaching. The university became less distinctive between the research lab and research institutes in strong research-focused universities. The aim of this book is to realign the function of the university to teaching, research, and service from the current research-dominated university.

There have been numerous attempts to upgrade the university systems since the emergence of the modern university in 1810. With any breakthrough of university development, there have been extensive discussions by great thinkers. John Henry Newman led a significant discussion on liberal arts and professional education in 1852, Abram Flexner on professional education in 1930, Clark Kerr on mission differentiation in 1963, Martin Trow on higher education expansion in 1973, and many more in later years. We are at the point of entering another stage of university development in the twenty-first century, although few policymakers and university administrators actually recognize this. We hope that this book contributes to academic discussions as well as policy development for the future of the university. The authors of the chapters in this book are highly regarded in international higher education research. They developed their specialty in higher education research through policy development experiences at the regional, national, and international (OECD, UNESCO, World Bank) levels, as well as academic research. We are confident that the discussion and analysis in this book have policy implications, as well as academic contributions.

Finally, we thank Soojeung Lee, Ph.D. candidate at Seoul National University. We could not finish our editing without her help.

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Acknowledgment

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Chapter 1
The Future of University
in the Post-Massification Era:
A Conceptual Framework

Jung Cheol Shin and Ulrich Teichler

1.1 Background

In observing the current rapidly changing context of higher education and dynamic change in higher education itself, we ask ourselves whether the magnitude and speed of change is "normal" or whether we live under conditions of exceptional transformation. To respond to this question, we tend to look at the history of higher education. Historical experts, although being as diverse in their views as experts of the current scene of higher education, seem to agree that there have been two mega transformations of higher learning institutions throughout history.

The first major development was the emergence of the medieval university in Europe in the twelfth century. There were institutions of higher learning prior to this period, notably in some Mediterranean, and Middle Eastern and East Asian countries, but the medieval university is seen as the first major step towards systematic intellectual reasoning in a multidisciplinary institutional setting deserving of the name "university" (de Ridder-Symoens 1992). While there was substantial variation in the educational philosophies and in the organization of the institution, in comparison to the current state of higher education, we tend to view the period from the end of the twelfth to the end of the eighteenth century as the first stage of the development of higher education.

The transformation to the second stage in the development of higher education is often characterized as the emergence of the "modern university" in the early nineteenth century. This seems to be the time when the credo gained momentum

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among academics that a close link between teaching and research is institutionalized for the university and for the activities of the academic profession. The concept of the "unity of research and teaching" along the concepts of "solitude and freedom" and of the "community of scholars and students," formulated by Wilhelm von Humboldt for the University of Berlin established in 1810, is most frequently identified as the guiding "idea" of the modern university (Rüegg 2011).

We note striking differences across countries and institutions. For example, many historians point out the enormous impact of three university models found all over the world: The Humboldtian model, the Napoleonic model, and the Oxbridge model (Ben-David 1977). We note also changes over time, such as the emergence of a new synthesis of the German and English traditions and the establishment of graduate schools as a new feature in the United States of America. These different approaches still have their footprint in current times; for example, Arimoto (2013), in analyzing the views and activities of academics according to the two major comparative surveys in the academic profession so far, argues that there is a dominant preoccupation with research in countries such as Germany, efforts to strike a balance between teaching and research in Anglo-Saxon countries, and a primary emphasis on teaching in Latin-American countries and other countries influenced by the French tradition. Yet, in retrospect, we can view the emergence of the close linkage between teaching and research as one of the major transformations in the history of the university.

Since the end of World War II, we note many changes in higher education which constantly raised the question of whether we have entered a new stage in the development of higher education. Various dramatic transformations are pointed out, which—according to some experts—deserve to be considered as the advent of a new stage (Teichler 2005). Yet, we do not see a widespread consensus emerging among experts as to whether we can identify this as the third stage.

The first significant change after World War II was the emergence of new models of higher education reinforced by the new political world order of the "Cold War." In the late 1940s, US higher education became the model for many of their allies, for example, Japan, and Soviet higher education similarly for China and various Central and Eastern European countries. But these influences were not pervasive across the globe and cannot be viewed as indicating a new overall stage of higher education.

Second, the rapid growth of student enrolment in the 1960s and the 1970s has been cited in recent decades as indicating a completely new stage of higher education. The focus shifted from university education to higher education and, eventually, tertiary, thereby, playing down quality differences and underscoring the life-stage of learning, i.e., study of any kind by young adults. The distinction between "elite higher education," "mass higher education," and "universal higher education" put forward by Martin Trow (1974) was most influential in this period, underscoring the belief that diversification of higher education was the most appropriate way of coping with large numbers of students and the growing overall diversity of motives, talents, and future job perspectives of students. Other authors, for example, Clark Kerr (1963), pointed out the growing diversity of functions

within single universities. But it is unclear whether a new stage of higher education emerged at that time. Enrolment rates surpassed 50 % in some countries, notably the USA and Japan, but remained below 20 % in some other economically advanced countries. The diversity of higher education seems to have grown in all countries, but the patterns of higher education remained diverse (Teichler 1988), thereby, reflecting different national historical traditions and different policy objectives.

Third, the notion of a rapid speed of change in higher education has spread even further since the 1990s, and attention is no longer paid to a single dominant phenomenon. Rather, major changes tend to be underscored in four areas concurrently.

- Move towards universal tertiary education: International organizations, in counting all post-secondary education, point out that "tertiary education" becomes more or less universal, with peak figures close to 100 % (see the figures of Korea in Shin 2012). This seems to lead to a redefinition of the function of higher learning no longer leading to economically and socially exclusive positions (OECD 1998). The dichotomy of a clear distinction between a "match" and "mismatch" between higher education and the world of work becomes obsolete with the growth of positions no longer typical for a traditional "graduate job," nor making competencies acquired in the course of study superfluous. And higher education is expected to find its place in taking care for the development of competencies in a much broader range of occupational strata than before, as the growing popularity of the term "employability" underscores. Finally, the belief that "life-long education" will spread emphasizes that this stage of enrolment expansion seems to be linked to major functional changes.
- Knowledge and research-based society: Research is increasingly viewed as the basis of innovation in industry and the economic system at large. "Knowledge society" and "knowledge economy" are the key terms underscoring the growing role of systematic knowledge for all spheres, calling for increased investment in research to stimulate technological progress and economic growth. There are indications that the role of research in higher education is more strongly emphasized in current higher education policies than ever before, and that academics in many countries devote more attention to research at the expense of a balance of teaching and research (Shin et al. 2013).
- Managerial approaches, emphasis on competition, and the growing role of assessment in steering and governance: Possibly, the most striking changes have taken place recently in steering governance in higher education. Where government played a strong supervisory role in the past, it has moved towards strategic steering with reduced process control. Public funding is increasingly embedded into competitive schemes. The power of institutional management is strengthened. Multiple schemes of assessment, ranging from in-depth evaluation to reliance of quantitative indicators, signal the desired performance of academics.

- Internationalization and globalization: Although universities are traditionally institutions looking across borders, the flow of border-crossing knowledge and interactions have increased substantially in recent years. The term "internationalization" in this context refers to growing border-crossing interaction, notably, physical mobility of students and academics, cooperation between institutions and individuals, and knowledge transfer of various kinds. "Globalization" refers to the worldwide interaction as national characteristics and borders decrease in the relevance thereof, and is seen, for example, in the worldwide competition for prestige among individual universities.

Some of these lines of discourse and actual change converge in a growing emphasis on "world-class universities" and in the identification of these exceptional institutions with the help of so-called rankings. A strong emphasis on research which should serve academic quality and societal relevance in harmony, a belief in the beneficial effects of borderless competition and strong management, as well as a prime attention to the apex of a vertically stratified higher education system.

Views vary substantially as to whether higher education is moving towards improving conditions for enhancing quality and serving society or whether instrumental pressures challenge quality; whether relevance is limited to economic growth along neoliberal ideas; whether academics are stimulated or downgraded and de-motivated; whether the quality of research at the apex is achieved at the expense of the quality of teaching and learning and at the expense of moving towards varied profiles of higher education institutions and a mass knowledge society aimed at enhancing the wisdom of the many (Shin and Kehm 2013; Shin et al. 2011). We do not know whether we are at a clear point of transition to a new stage of the history of higher education.

1.2 Conceptual Frameworks

The recent developments in higher education and its context have not led to a widespread consensus so far about the overall character of changes and the benefits and dangers of the current state of higher education. But the changes tend to be viewed as so dynamic and salient that efforts are obviously encouraged to strengthen our understanding of the current scene and its implications for the future. Therefore, this book is designed to develop conceptual frameworks for understanding contemporary challenges and discussing future directions.

These complexities of contemporary higher education cannot be reduced to a single theoretical framework. University development is the result of continuous interactions between new ideas, environments, and historical institutional forms. Policymakers tend to emphasize new ideas and environmental changes as the logical grounds for their reform policy. Sometimes, the reform initiatives attract people's attention, but universities tend to be skeptical about government initiatives. The universities did not accept even Humboldt's idea at the time, and, obviously, we are confronted today with a more complex set of conditions. The institutional forms
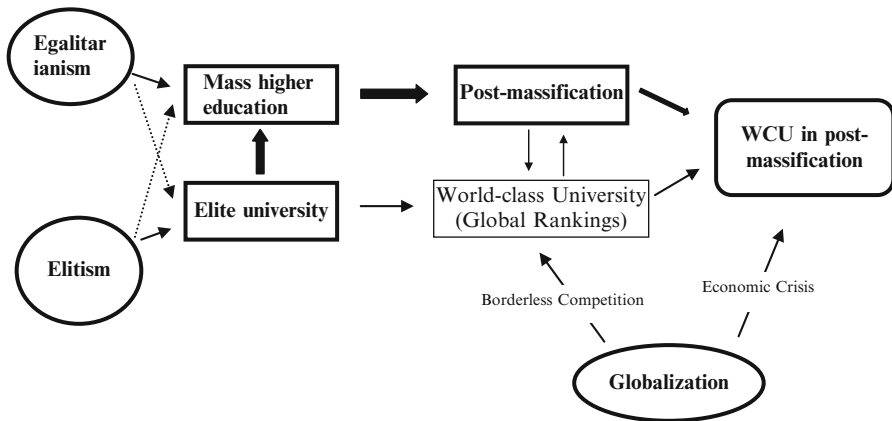
Fig. 1.1 Conceptual framework for the future of the university

of the universities do have to be changed dramatically, and the perseverance of some features of higher education is often referred. Yet, substantial changes of functions are obvious.

The public discourse on the changes in higher education is strongly influenced by varied values as regards to academia, political ideologies, religious beliefs, etc. Often, values of elitism and egalitarianism clash (Shin and Harman 2009). Economic, societal, and cultural values turn out to be incompatible. This does not preclude, however, seeking a conceptual framework aimed at putting the various values, powers, concepts, and activities on an overarching conceptual map.

Shin and Harman (2009) conceptualized new challenges for higher education in their paper "New Challenges for Higher Education: Global and Asia-Pacific Perspectives." They point out that most issues of higher education to which are currently paid attention, e.g., massification, privatization, governance, global rankings and world-class university, and internationalization, are linked to the crucial issue of whether future higher education policy will concentrate on elitism and the apex of the institutional pyramid or whether it will pay attention to the knowledge society based on broad social functions of knowledge on the part of the majority of the population. This will affect the relationship between teaching and research, which is important for the range of values served by higher education policies. The historical development of higher education with the interactions between elitism and egalitarianism under globalization is conceptualized in Fig. 1.1.

Future-looking in higher education means developing scenarios for a "post world-class university" higher education system and a "post-massified" higher education system. Is there an option for a higher education system which is not the servant of the most powerful current political ideology and the most powerful system, for a higher education which is not torn apart by destructive clashes, but, rather, can serve a multitude of approaches through a creative balance? This requires both a realistic and an idealistic discourse. It is hoped that this book serves as a small step forward in this direction.

1.3   Plan of This Book

This book consists of three parts, along with introduction and conclusion chapters. Part I provides the theoretical and practical grounds for the following chapters.

- In Chap. 2, Shin briefly introduces university development from an historical perspective and emphasizes how the university has maintained its heritage throughout its long history. He then discusses how the ancient ideals of higher learning were incorporated into the medieval university, and how the medieval university ideal was, in turn, incorporated into the modern university. In addition, he conceptualizes contemporary higher education as post-massification, and compares how post-massification differs from elite and mass higher education in terms of teaching and research. From this discussion, the author seeks to explain the complexity of contemporary higher education and argues that most of the problems confronting contemporary universities are accumulated problems from the elite and massified stages. Based on this discussion, the author also suggests that the decoupling of teaching and research is one of the main challenges facing the modern university.
- In Chap. 3, Neubauer discusses how globalization is a complex set of structures and dynamics that appear to function as a highly complex system for which outcomes are often problematic and unpredictable. This context of structural uncertainties is the environment within which the contemporary university exists and to which it must respond. This chapter outlines these structural elements of the global economy, points to a set of dynamics that powerfully affect higher education in general, and seeks to gain a better understanding of the role that crises play in this overall environment. The author then examines some of the probable elements of emergent future universities, especially as they seek to adapt to challenges from other social institutions in the performance of their historic functions.
- In Chap. 4, Shin gives an overview of how economic crises affect higher education and draws out some theoretical perspectives from the overview. An economic crisis has a short-term cycle and its impact on higher education is direct and more serious than secondary education or social welfare. The core challenge of post-massification has become how to survive in an economic crisis without tuition fee increases. This chapter proposes that universities move from a strong research orientation to a more balanced movement harmonizing teaching and research.
- In Chap. 5, Yonezawa discusses how internationalization is formulated as a type of international collaboration in higher education. In this chapter, the author analyzes the past directions, current trends, and future prospects of global and regional collaboration in higher education linked with the natural transformation of internationalization. The author discusses the values of regional and global collaboration in higher education for the sustainable development of higher education systems around the world.

Part II focuses on the three functions of the modern university. In this part, the authors present an overview of how teaching, research, and service activities are conducted in contemporary higher education, and discuss how to restructure these functions in the future.

- In Chap. 6, Shin provides theoretical and practical grounds for teaching, research, and service. This chapter discusses how these three dimensions are perceived and carried out by academics, and how these functions reinforce each other for the betterment of the university and society. This chapter uses the Changing Academic Profession (CAP) data to provide empirical evidence.
- In Chap. 7, Shin argues that universities should put more weight on teaching than on other functions. The chapter presents student development, knowledge production, and economic situations as the logical grounds for this. In addition, the chapter looks at how teaching has been conducted in different higher education systems globally. This provides an overview as to how professors teach their students, what they teach, how much time they spend on curriculum development, etc. This diagnostic information provides the starting point for realigning the university as a teaching institution through restructuring undergraduate education.
- In Chap. 8, Marginson focuses on what research means and he proposes six distinctive social functions of university research. He then discusses how the six functions are related to social contexts, e.g., new public management, global rankings, and the internal functions of university, such as teaching and research. His thoughtful discussion opens up a new arena of investigation on "research" discussions. He also discusses whether the university research model is optimal for the spreading of knowledge within universities, and its broader social dissemination, including relations between university and non-university research.
- In Chap. 9, Lee and her colleagues conceptualize the scope of academic service, which is a relatively less often studied area in higher education research. Professors tend to rationalize their service activities in various ways, which raises the question, what is service? What does a service activity mean to academics? Why do they rationalize their service activities? Lee et al. address these questions through a comprehensive literature review and report on their interviews of professors.

Part III focuses on how to realign these three functions by systemic changes at the system level, by redesigning evaluation and reward systems at the institutional level, and by enhancing ethical considerations.

- In Chap. 10, Teichler discusses the challenges of higher education and proposes research topics corresponding to the challenges. Based on his review of major challenges in higher education, he proposes some possibilities for developing new higher education systems. In his discussion, he emphasizes the need to balance various aspects of higher education: to be socially relevant without becoming overly instrumental, and serving a variety of persons and functions without promoting a steeply stratified higher education system. Finally, he proposed how higher education could serve a "highly educated society," when the majority of the population is highly informed, highly reflective, and able to share responsibilities.

- In Chap. 11, Arimoto conceptualizes research-driven teaching and learning from the university development perspective, and explains teaching and research practices by drawing on the CAP data. Using the empirical data, the author discusses how and why both teaching and research should be coordinated. Finally, he proposes suggestions for balanced scholarship through changing evaluation and reward systems in the globalized context.
- In Chap. 12, Teichler further develops the topic of higher education as public goods. He focuses on the contribution of higher education to equality of opportunity in the European policy discourse. He points out that the social dimension of higher education was only a minor theme in the Bologna Process based on empirical data. Further, he relates his discussion to the issues of socio-biographic background and education, and points out that these issues are rarely addressed in policy discussions in European higher education. He wonders whether the current preoccupation with issues of competition and quality will persist or give way to notions of a mass knowledge society, where a balance between meritocracy and equality of opportunity will be sought.
- In Chap. 13, Heyneman discusses how the university benefits society in general, and he considers the ethical issues facing the world-class universities which are at the frontier of contemporary policy issues. He further develops his long-standing research topics into an empirical study to provide confirmative evidence. The study defines "ethics" in the management of a university. In his empirical research, he found that virtually all of those universities ranked in the Times ranking, across 40 counties, mentioned ethical infrastructure elements on their web pages, and this suggests that having an ethical infrastructure is an important ingredient in a university's reputation.

In the conclusion, in Chap. 14, Shin highlights the current dilemma of coordinating the conflict between undergraduate education and graduate education, between teaching and research, and between pure and applied research. As a potential solution, this chapter proposes a multilayered approach which allows autonomous decision-making by different academic units—undergraduate education, graduate education, and applied research units. In addition, in Chap. 15, Teichler discusses how higher education systems differ across countries, especially between Europe and Anglo-Saxon systems. The discussion highlights reasons why policymakers and academics should pay attention to systemic differences in their discussions of higher education reforms.

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Part I
Post-massification and Changing Environments

Chapter 2
The University as an Institution of Higher Learning: Evolution or Devolution?

Jung Cheol Shin

2.1 Introduction

Most current social systems can be traced back to earlier systems and have evolved during thousands of years of human history. For example, current political systems are rooted in the ancient democracies, legal systems go back to the ancient laws (e.g., Roman laws), our currency-based economic systems originated in the ancient past, and even contemporary credit systems were developed in ancient times. Education systems are no exception. The original forms of university can be traced back to those times. The goal for education was no different from contemporary education, and their teaching methods did not differ either. In ancient times before the medieval university emerged, higher learning systems were closely related to training leaders in their society, though there were subtle differences between scholars.

More formal higher learning institutions emerged in the medieval times. This is related to the emergence of *guild* systems, which were professional organizations for training their coworkers and organizations for business and production systems. The medieval university which emerged in the twelfth century consisted of teachers (professors) and students, and the university had its official curriculum, examination systems, graduate certification, and graduation ceremony. The medieval university, which emerged in the early nineteenth century, even charged student tuition fees. The modern university emerged from the medieval university as efforts were made to establish new higher learning institutions that differed from the medieval university. This effort was very strong in the places (e.g., Germany) where the medieval university tradition was relatively weak. Germany established Berlin University in 1810, with strong support from Wilhelm von Humboldt. The Humboldtian model is quite distinct from the medieval university because of its

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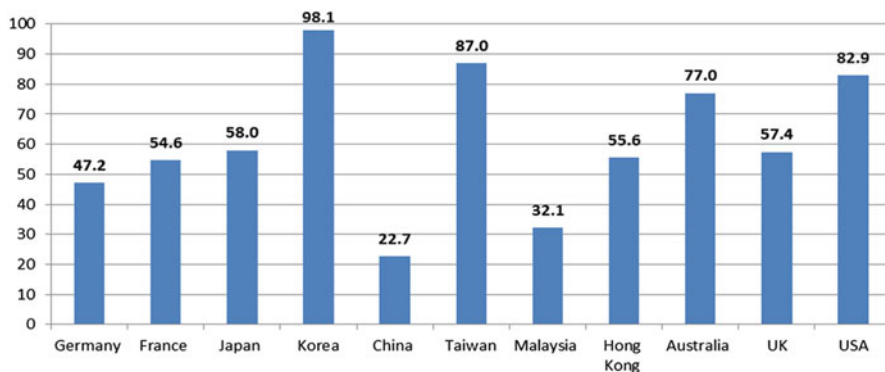
Fig. 2.1 Tertiary enrollment in selected countries (World Bank Data 2010) (Note: Tertiary enrollment is defined as: (total tertiary enrollment)/(total tertiary age population))

emphasis on research rather than teaching. Humboldt designed the university as an independent think tank from the state, thereby, serving society from a broader perspective. The Humboldtian university model was imported by many other European countries, the USA, and Japan, and became a model for the modern university.

Up until that point, the university was a very selective place, open only to the elites in most countries. After World War II, university enrollment grew rapidly, and soon reached over 40 % in many European countries and the developed Asian countries (e.g., Japan, Korea, Taiwan, Singapore, and Hong Kong SAR) (see Fig. 2.1). University education has been transformed from elite education to mass education since World War II. As Trow (1973) argued, mass university education changed every dimension of the university—professors, students, curriculum, instruction method, and the social meaning of the university. This chapter overviews and compares these different periods of university development from an historical perspective. The discussion provides a basis for discussing the challenges with which the contemporary university is confronted and provides insights as to how to overcome these challenges. Further, the historical overview enables an in-depth discussion on designing the future of the university.

2.2 The Premodern University and the Modern University

When academics discuss the topic of the "university," many of them start by outlining how it is a long-standing institution going back to its establishment in the twelfth century. However, the university can be traced back to more an ancient period. During the time of the great Greek philosophers Socrates, Plato, and Aristotle, and even predating them, there were higher learning institutions to train officials, and political and religious leaders. They taught the known cutting-edge

knowledge at that time to their students. They also developed new knowledge to deepen their understanding of nature, society, and humanity, and to improve society. While this was occurring in western society, there were also forms of higher learning institutions in the east. Ancient China developed a higher learning institution called *Taehak* (great learning) during the Han Dynasty. The main goals of *Taehak*, as well as their teaching content and teaching methods, were similar to the western higher learning institutions—training national leaders.

It is surprising to know that both the premodern and the modern university are not only similar in their social functions, but even their curriculum and instructional methods were not dissimilar from earlier times. The major differences lie in the content of the teaching: premodern higher learning institutions taught premodern subjects such as theology, law, medicine, and philosophy, while the modern university teaches modern subjects such as natural sciences and engineering, social science, as well the traditional subjects. Even so, most of the subjects that we teach in the modern university are based on the knowledge going back to the earlier times. Significant knowledge development in Mathematics were carried out in India, scientific knowledge came from the Arab world, knowledge in engineering originated from Egypt and Greece, and so on.

Most of the distinctive features of the modern university can be traced back to much earlier forms of higher education institutions, although reformers have added some functions, content, and adopted new governance and management systems. Social pressure and changes have led to the incremental development of higher learning institutions. The "research" function, a distinctive feature of the modern university, was not emphasized until the time of the medieval university. Most knowledge creation was undertaken by individual scholars or academies until the emergence of the German university in 1810 (Ben-David 1977).

As discussed, the modern university developed along the lines of the premodern university. Although reformers implemented new ideals based on academic freedom and "research," the basic platform of the modern university is no different from the premodern university, and in each country, it has developed different systems to incorporate modern ideas. Cummings (2003) identified seven education systems on the basis of their historical origins. Although the classification is for education in general, the university is part of education and also reflects the social demands of its time. Of the seven systems, the German, French, and US systems are distinctive, and each has strongly influenced contemporary higher education.

The German reformers incorporated enlightenment ideas in the innovative German university model in different ways from the French model. An example was their incorporation of scientific development. On the other hand, the French model assigned the research function to individual scholars and, later on, to research institutes (Ben-David 1977). Because of this different approach, research sits at the core of the German university but not in the French university. As well as the research function, there are distinctive features between German and French universities in their professional training. The German university continued to conduct professional training programs, while the French split off professional

training from the university sector and assigned it to the grande école in the enlightenment era.

The US model developed later than the French and German models, and it is different from the French, German, and even the British models (Clark 1983). The USA incorporated a research function (from the German model) at graduate education so that, organizationally, the US model has two layers within it. This enabled the US university to coordinate research (a German idea) and teaching (a French idea, although originating with the British). Most professional training was conducted at the graduate level. In that sense, the graduate school is similar to the German university, while undergraduate education is more like the French university. In addition, the US model expanded the university mission by adding a "service" function. This function was institutionalized through the establishment of land-grant universities following the Land-Grant College Act of 1862. With the strong support of the land-grant university, US agriculture and manufacturing became globally competitive, with the development of scientific and engineering expertise in the late 1800s and early 1900s. By adding a new function, the US university became a complex and multifunctional organization. Clark Kerr (1963) refers to this as a "multiversity" in his famous book *The Uses of the University*. As Macfarlane (2007) discussed, the "service" function is also found in the UK system in the expansion of universities in the late nineteenth and early twentieth century in universities like Birmingham, Liverpool, and Manchester.

In terms of teaching and research, the US model is a combination of the French and German models because it incorporates both ideas while adding a new organization. On the other hand, the US model and the UK model, to some extent, are distinct from the other two models because they have added the service function. The French university focuses on teaching, the German university on research, and the US model on teaching, research, and service. While German and French universities have stayed true to their original ideas, US universities evolved continuously according to social demands. Through this continuous evolution, US universities have become the global leader since World War II (Trow 2005).

2.3 Modern University: Elite, Mass, and Post-Massification

2.3.1 Growth of Higher Education

During and after World War II, US universities grew rapidly. University research grew quickly in an effort to develop military know-how during and after World War II. In addition, the Cold War generated huge research funding for university researchers. During that time, engineering and natural sciences in particular developed rapidly. In addition, the social sciences benefited from national research during the 1960s, when minority protests and the Vietnam War became social issues (Kerr 1963). With massive research grants, they could admit more students

and provide more assistantships and scholarships. Student enrollment expanded after World War II when the government began to support scholarships for retired veterans to study. The veterans were supported by the well-known Servicemen's Readjustment Act of 1944 (known as the G.I. Bill). This growth further accelerated when the first baby boomers reached university in the mid- 1960s. This accelerated growth never decreased, even though growth rates fluctuate according to economic cycles. According to Trow's terminology (1973), US higher education entered the universal access stage in the 1970s.

Influenced by the USA, higher education has grown quickly in other countries, e.g., Canada and Japan. Recent higher education growth has been remarkable in some rapidly developing economies, such as Korea, Taiwan, Singapore, and Hong Kong SAR. In addition, the recently booming economies of China, India, and many Latin American and former communist countries in Eastern Europe and Asia have promoted rapid growth. Details of tertiary enrollment in the selected countries are represented in Fig. 2.1. The higher education growth is related to education growth in elementary and secondary education in these countries (e.g., Shin 2012). Since the 1960s, when developing countries began to develop economically, elementary and secondary education has expanded in these contexts. This growth has provided a huge pool of potential college students. These "potential" applicants became college students when governments actively established universities. The growth of higher education is highly correlated to the economic growth of each country.

2.3.2 Massification and Post-Massification

According to Trow's definition, contemporary higher education has entered the universal access stage in many countries. However, some are struggling to increase access to higher education and catch up with the leading countries, while others face issues stemming from near 100 % tertiary enrollment rates. Korea is above 90 % in terms of tertiary enrollment rates, whereas Germany is approaching to 50 %. In light of this complexity, academic discussions might do better to classify higher education expansion as massified and post-massified higher education than Trow's mass and universal access. This terminology better demonstrates the differences between the countries that are trying to expand higher education access and the countries that are over-massified. Using this approach, this section conceptualizes how post-massification differs from massification.

It is not easy to apply a single criteria like tertiary enrollment rates in classifying massification and post-massification because the terms are not simply about the differences in higher education enrollment rates, but more about the major differences across different stages (e.g., Brennan 2004; Trow 1973, 2005). The following discussion focuses on the differences between the elite, massification, and post-massification. Teaching, research, and service have become the main functions of the modern university and how the three stages differ in these functions is the starting point for this discussion. Of these three functions, this section focuses
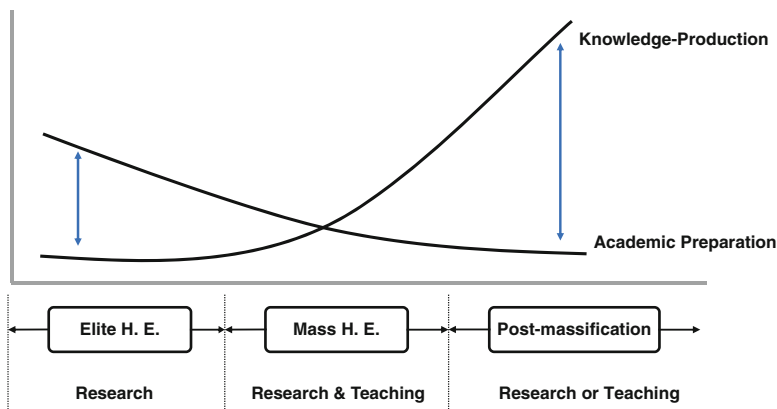
Fig. 2.2 Historical development of teaching and research

primarily on two functions—teaching and research—because both are critical in conceptualizing elite, mass, and post-massification. The differences across the three stages in terms of teaching and research are shown in Fig. 2.2.

- In elite higher education, students are well prepared, but there is not much knowledge to impart, so professors concentrate on knowledge production. Most of the major theories in the social sciences and even in the natural sciences were produced at that stage. Only small numbers of talented professors are involved in knowledge production, while most other professors interpreted, translated, or transmitted the knowledge to their students.
- In mass higher education, professors begin to pay attention to teaching because their students are not as well prepared as they used to be. At the same time, more professors begin to become actively involved in research and knowledge production moved from the grand theory to more middle- or small-range theories. In mass higher education, a critical issue is how to transmit the knowledge produced by professors in the classroom. As a result, teaching and quality assurance become core issues.
- In post-massification, knowledge grows exponentially, but students are less well prepared than even in the mass higher education stage. In this stage, professors are expected to pay as much attention to what students learn as to what they teach, because students often do not fully understand what their professors teach in the classroom. On the other hand, in order to survive in the knowledge society, professors are required to produce more knowledge which is more discipline-specific and dependent on more sophisticated research methods. Consequently, the gaps between the knowledge generated and the content taught in the classroom becomes wider.

In these three periods, the decoupling between teaching and research becomes serious in the elite and post-massification stages, as shown in Fig. 2.2. The decoupling is between students' academic preparation and the knowledge produced in academia. In the elite stage, professors successfully teach their students with minimal input because their students are intelligent enough to self-learn. So, professors concentrate on their research and students do not have a serious problem with that because they can learn by themselves with less input from their professors. Most European higher education systems developed in the elite education stage are following the same pattern, even in the mass higher education stage. As a result, course and credit systems developed in US mass higher education were not seen in many European higher education systems until the European Union adopted the Bologna Process in 1999.

On the other hand, decoupling between teaching and research leads to serious problems in the post-massification stage. Academics produce a lot of knowledge, but students are not well positioned to learn what they are taught. Many empirical researchers have also found that research-productive professors are not always good teachers (e.g., Marsh and Hattie 2002; Shin 2011). Various initiatives have attempted to address the issue. In the USA, Ernest Boyer (1990) proposed four dimensions of academic scholarship to emphasize different types of academic activity (discovery, application, teaching, and synthesis). The UK, Australia, and the Netherlands began to apply a division of labor between teaching and research by appointing teaching-focused and research-focused professors (Deem and Lucas 2007; Leisyte et al. 2009; Schimank and Winnes 2000).

The three stages differ across many dimensions of higher education. For example, professors have considerable influence in elite higher education. Similarly, academic freedom is critical in encouraging professors to conduct research. As a result, academic excellence is a critical value for professors and students. In mass higher education, academic managers become influential actors, and their primary interest is management and efficiency, emphasizing quality assurance. In post-massification, students emerge as the main actors because they pay so much in tuition fees. Students are interested in their college experience and their priority is their satisfaction, which is quite different from the focus on excellence in the elite stage or on assuring quality in the massification stage. These differences across the three stages are represented in Table 2.1.

- During the elite stage, professors are the main actors. Academic freedom is the core concept because they believe that universities produce high-quality knowledge through academic freedom. The organizational structure is designed to enhance academic freedom and academics have a strong influence on university-wide decision-making. In this stage, the university administration plays no significant role. Academic research is pure and basic research, rather than applied research.
- During the massification stage, university management becomes more important because the key issue is how to manage a massified university (e.g., McNay 2005). In that time, university managers begin to hold power in administration; then, they initiate to enhance the efficiency of their management. Their main

Table 2.1 Comparisons of elite, mass, and post-massification of higher education

	Elite higher education	Massification	Post-massification
Main actors	Professor	Academic manager	Students
Value orientation	Excellence	Assuring quality	Student satisfaction
		Efficiency of education	
Keywords	Academic freedom	Management reforms	College experience
Roles of academics	Research > teaching > administration	Research = teaching = administration	Research < teaching < administration
	Research productivity	Teaching–research nexus	From teaching to learning
Types of research	Pure/basic > applied	Pure/basic < applied < development	Pure/basic < applied < development

concerns are how to ensure the teaching of the knowledge that professors produce. For that purpose, the university often establishes a center for teaching and learning. This managerial perspective is also widely applied within the university administration, and quality assurance and organizational changes are emphasized. At the same time, many professors shift their research focus from basic/pure to applied research.

- During the post-massification stage, students become the core actors, and they begin to pay a significant share of the university expenditure. The focus of the administration is not on how to attract research-productive professors, but how to bring in good teachers. In addition, the main focus of education changes from teacher-centered to student-centered. Academic research also shifts from "teaching" to "learning," and administrative organization emphasizes student affairs such as "student" housing, "student" personnel, mentoring, etc. In this stage, student satisfaction becomes the main concern of the university administration. Most of the professors are engaged in applied and practice-oriented research.

Nevertheless, these dimensions of earlier stages have been incorporated into the later stage as discussed by Scott (1995). Consequently, the features of elite and mass higher education are found in the post-massification stage. For example, some professors who strongly identify with the elite university believe that research is the heart of their academic lives, even though they are in the post-massification stage. In terms of organizational structure, there are different organizational forms at each stage. These organizational forms coexist in the post-massification stage. For example, universities in the post-massification stage have professor-oriented committees (this means that most academic decisions are made by a committee of professors) that developed in the elite stage, managerial forms of organization that come from the mass higher education stage, and student-centered organizational forms from the post-massification stage. John Brennan proposed different conceptions of elite, mass, and post-massification from different angles based on Trow's three stages (for details, see Brennan 2004).

Universities in the post-massification stage are confronted with conflicting value orientations. In the post-massification stage, a university pursues different (and potentially conflicting) values simultaneously, such as excellence in research, quality education, and management efficiency, while at the same time, attending to student satisfaction. There are no clear criteria to guide campus-wide decision-making, which becomes dependent on context. For this reason, organizational researchers view a university as organized anarchy (e.g., March and Olsen 1985) or loosely coupled systems (Weick 1976).

2.3.3 Post-Massification and Global Rankings

As already discussed, the post-massified university retains the legacy of the elite and massified universities in terms of academics' activities, organizational structure, governance, value orientation, etc. This section highlights global rankings.

Global rankings are related to the prestige and reputation of research, which is a primary value orientation in the elite stage, while quality assurance is related to assuring a minimum quality of education, which is developed in mass higher education. The original forms of rankings emerged in the early 20th century in the USA, although global rankings emerge in the post-massification stage (Shin and Toutkoushian 2011). Because of this, global rankings are not a good fit with the post-massified higher education stage.

Nevertheless, environmental factors such as the knowledge economy have pushed most universities to produce knowledge, especially applied and benefit-generating knowledge (Slaughter and Rhoades 2004). Newer universities have joined the ranking race in order to enhance their prestige, but their research differs from that of the elite stage and has taken a new form in post-massification, e.g., it is applied, practice-oriented, and/or for benefit generation research. Further, the global rankings do not or cannot reflect the value of the massified university or post-massification because the rankings are based on only one value, namely, research excellence. Global rankings are, therefore, a legacy of the past, but are embedded in post-massification.

Rankings, especially global rankings, have had a number of negative effects on post-massified higher education, because they did not emerge as an institutional form in the post-massification stage. Rather, rankings emerged incidentally (e.g., Liu and Cheng 2005). In recent years, global rankings have been combined with the world-class university movement as an effort to accord top ranking status to select universities. The preoccupation with global rankings is not only a concern of the highly reputed universities, but, also, newly established universities have entered the rankings competition. Consequently, the preoccupation with excellence, which used to be an issue among top universities in the elite stage, has now become an objective for many other universities.

For this reason, many post-massified universities are focusing on rankings when they are expected to focus on student satisfaction. US universities are less influenced by the global ranking competition because they developed mission classifications a long time ago, and the influential ranking published by *US News & World Report* ranks US universities by various criteria, such as mission and region. As the leader in contemporary higher education, US universities are relatively well prepared for the post-massification stage, with more flexible time to prepare them for the new era (Trow 2005). Elsewhere, serious decoupling occurs between teaching and research, and professors are required to publish more papers once their universities begin to focus on the rankings. On the other hand, these professors are less well prepared to teach their underprepared students, with the result that decoupling between teaching and research has become a serious issue.

Cotemporary universities, most of whom pursue global rankings, are in a dilemma because they are pursuing that which is valued in the elite stage, even though they are in post-massification. There have been various efforts made to address this dilemma. One approach is to assign professors to conduct different

roles between teaching, research, and service based on their choice (Shin 2011). In any case, well-articulated definitions of teaching, research, and service in the post-massification period are critical. Four chapters of this book (Chaps. 6, 7, 8, and 9) will focus on how to define and approach these three functions in the post-massification stage.

2.4 Challenges in Post-Massification and the World-Class University

The rapid increase of massified higher education and emerging global rankings presents challenges to contemporary higher education which are more serious than any encountered previously. It may be an indicator that the modern university is entering a new stage—the third wave—because contemporary challenges are profoundly changing the identity of the university as a social system. These challenges are best discussed from a broad perspective on higher education rather than narrowly focusing on the world-class university. The challenges on which we focus in this book are the challenges that teaching, research, and service have confronted in terms of higher education systems and rewards, and identity crisis issues.

First of all, the challenges relate to changes in the three major functions on which the modern university is based.

- Teaching is devalued in many universities seeking world-class status because such status is based on academic productivity. Teaching and research are in conflict in terms of the demands of time available to carry out both teaching and research. An increase in research time inevitably means a decrease of time available for other activities. This is encouraged by the faculty evaluation and reward systems. Faculty evaluation is mainly based on academic productivity and teaching quality is less well regarded. In addition, rewards (symbolic and economic) are given to the professors who are research productive. Consequently, professors prefer to reduce their time spent on teaching and increase their time devoted to research. This raises the question of whether the university has become an institution of "research."
- Research itself is problematic when considered in terms of its contribution to society. Although academic productivity has increased, this does not mean professors are contributing more to society. Higher education scholars are skeptical about the social contribution of academic research. Etzkowitz and Leydesdorff (1997) proposed the triple-helix collaboration as a pseudo measure of the social contribution of academic research, but it is also an indirect measure of the social contribution of research. In reality, many academics undertake research with their faculty evaluation in mind or for their own personal fulfillment. In such a scenario, one has to question why public funds are used for research that has near-zero social contribution.

- Community service, which became a core function of the modern university, is now considered of questionable value in the reward systems. The university pays attention to service activities that provide some benefit to the institution, but are not supportive of service activities that benefit the general public. Many leading universities now provide outreach programs and lectures open to the community, although these activities are also related to resource generation. When involved in global competition, universities tend to look for community-related activities that will directly benefit the institution. This, again, raises the question as to why the community should pay taxes for a semi for-profit university.

Second, each higher education system was developed based on how to conduct and combine these three functions. As discussed earlier, the German model integrated teaching and research functions in their university sector and the service functions by establishing polytechnics (and before these, civic universities in the UK and land-grant universities in the USA); the US model combined teaching and research in two layers—undergraduate and graduate education—while also emphasizing service by establishing the land-grant university and by mission differentiation between universities; the French model adopted a division of labor between teaching and research, so that the universities focused on teaching and other sectors (e.g., grande école, research institutes) are in charge of the other functions. However, with the emphasis on university research, these systemic differences have lessened. One critical issue in contemporary higher education is how to realign these functions across different types of higher education institutions.

Third, as well as the systemic changes, there are enormous changes within the university dating back to the 1980s when globalization and neoliberalism became widely embedded in the university sector. Through neoliberalism, governments replaced their policy of regulation in favor of performance-based evaluation systems. Neave (1989) calls the phenomenon an "evaluative state." Academic activities are considerably affected by the evaluation and reward systems. The Changing Academic Profession (CAP) data of 2007, an international comparative study on the academic profession across 19 countries, shows that academics have changed their teaching and research activities since the first CAP survey in 1992 (Shin et al. 2014). According to the data, academics shifted their preference for teaching and research away from teaching and towards research. In addition, most of them assigned more time to research in 2007 than they had in 1992. However, this strong research orientation does not mean that their research contributes more to society than before. In point of fact, they may publish more papers simply as a guarantee of promotion.

Fourth, these changes also raise the question about the social meaning of the university. Global competition is forcing the modern university to become a type of semi for-profit organization. The massified university provides greater opportunity for those who did not previously have access to higher education, but it costs them much more than in previous times. In addition, the massified university is actively seeking ways to generate resources to support the increased expenditure. Also, the

competition for external resources leads research universities to engage in endless rounds of ranking. In its rapid transformation to a globally competitive research institution, the university is losing its identity as a social good. In many countries, ethical dimensions are not highly emphasized by university management. For some, it is now questionable as to whether the university is a public good.

2.5 Conclusion: Modern University, Evolution or Devolution?

The modern university has grown rapidly since World War II, especially in the USA. Simultaneously, higher education has been developing rapidly, especially in the growing economies such as Japan, Korea, Taiwan, and Singapore. The rate of growth is particularly remarkable in China, India, former communist countries, Latin America, and Africa. In many countries, the enrollment rates in higher education are over 40 %, indicating that it has entered a stage of universal access according to Martin Trow's terminology. This rapid growth has not been fully supported by public funding, but, instead, students and parents pay a large share of the expenditure in many countries. In addition, universities have become actively involved in marketing activities and building their brand name in order to generate revenue to support these increased student enrollments.

Higher education has been confronted with more serious challenges in the 2000s as global rankings become more and more influential, with many universities aiming to be seen as a world-class university. Most universities, especially research universities, are realigning their goals to this end, placing more emphasis on research than on teaching and service. Universities are being transformed from teaching, research, and service institutions to purely "research" institutions. Although most university administrators and academics do not agree with the global rankings and world-class status, it is a rare university that is committed to their original mission.

Shin (2013) has proposed a new way to conceptualize universities by three types—world class, national class, and local class. The typology does not imply that any one type is superior to the others, but, instead, focuses on the differentiation of missions. The world-class university pursues goals that should benefit more than national or local needs; the national-class university aligns its mission to goals for national development; and the local-class university aims to meet community needs. Based on this categorization, most of the highly marketized universities are not in any of these categories. The contemporary university raises fundamental questions about the university as a social system. What does the university mean to society? Is the modern university evolving or devolving? The authors of this book are continuously raising these questions throughout the text.

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Chapter 3
The University in the Context of Continuing Globalization

Deane Neubauer

3.1 Introduction

Contemporary globalization, by which I mean the set of historical processes that have been and are taking place since the end of WW II [differentiated from what some see as historical processes of globalization (Bentley 1998)], is increasingly viewed as a large set of factors, structures, dynamics, and processes that collectively tend to operate as a complex system (Hershock 2011). For the main, various commentators would see these as involving a changing global demography, including continued population growth, steadily increasing human mobility (Neubauer 2011), a progressive movement of people into urban areas, resulting, among other things, in the growth of mega-cities or conurbations (Castles 2002; Jones and Douglass 2008), the continuous relocation of factors within the global economic system, including labor and capital (Stiglitz 2010), the gradual global extension of the economic domination of finance capital accompanied by novel and unpredictable financial instruments (Harvey 2010), a progressive redefinition of social structure and patterns of interaction being wrought by the information and knowledge revolution (resulting in what some would see as a communication or network society) (Castells 2010), a persistent economic privileging of innovation as a wealth-producing strategy (InSIS 2012), the emergence of a worldwide consumption culture and the social pathways that facilitate it, giving rise to a vast and continually changing set of circuits of exchange (Sassen in Steger and Roy 2010), an extensive and continuing pattern of political alignment and realignment, resulting in continuous instances of civil conflict (Lerche 1998), and the full specter of climate change and energy security (Brown and Sovacool 2011).

   To frame contemporary globalization as a complex system is to hold that it is composed of many discrete elements, all of which interact *in some way*, but, as a

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collection of behaviors, is fundamentally, at some levels, unpredictable (Silver 2012). When this notion of globalization is paired with an earlier one of David Harvey, which holds that contemporary globalization is characterized by an accelerated dynamic of change, the behavior of social structures is rendered uncertain in many and complex regards (Harvey 1990). The nature of our contemporary dilemma as citizens and participants of the societies that are being shaped and rapidly reshaped by globalization is that much of our "received knowledge" about society, its institutions, and behaviors is in a state of constant change. "What we know" and what we hold to know is subject to constant challenge.

3.2   Enter Education

One way to place education and, especially, higher education into this complex of factors is to see it in the historical functions that the university as the primary exemplar of higher education has performed across many societies. For the main (but with some modifications), these constitute the familiar. Universities have served societies through the function of knowledge creation—an activity that we routinely associate with research, even while recognizing that the "modern" research university and its relation to the state is of rather recent origin (Arimoto 2011). The second primary function has been that of knowledge transmission, covering the whole of the teaching and learning activities of colleges and universities. The third has been knowledge conservation, an activity performed differentially through curricula and library activity. Within the western university tradition, especially within democratic societies, service to the community is viewed as a fourth function. These are embedded in universities with extraordinary ranges of particularity and across similar dimensions of quality, but, on the whole, if one were to examine only these four dimensions of universities, a vast plurality of observers would likely agree that this is the majority of what universities do. [But, of course, they do many other things as well, as generations of sociologists and other social commentators have informed us, including, historically, the social reproduction of elites (Tzanakis 2011), the provision of professional roles (Friedson 1970), their role in urban development (Perry and Wiewel 2005), as a constitutive element in state military capacity (Ghoshroy 2011), and many others.] I would argue that, even accounting for differences in national culture and historical experiences, universities throughout the world have had these as their *essential* functions.

To some degree, each of these areas of functionality is being impacted by the dynamics of globalization specified in the previous section—again, to different degrees and with different variations in societies across the globe. A useful metaphor to employ when discussing the complexity that is contemporary higher education is to view it collectively as constituting an ecology, a complex process of interactivity situated, in turn, within broader and more extensive sets of other ecologies, all of which are in a process of continual interaction and change. From this, we can conclude that the dynamics of contemporary globalization are causing an overall changing ecology of higher education. While any number of organizing

schemes can be created and employed to characterize this ecology, the following may prove useful to suggest both the range and the diversity of this emergent ecology.[1] A recent review of the literature suggests that significant change has taken place within the USA on these dimensions of higher education: changes in the characteristics of learners; the roles and responsibilities of faculty; methods of instruction and the learning process; content and focus of instruction; pressures being placed on higher education; frameworks in higher education [e.g., do it yourself (DIY), massive open online courses (MOOCs), competency-based instruction]; certification, credentials, and accreditation; policies and metrics designed to frame and measure higher education structures and outputs (Neubauer 2012). Again, whereas the most common examples of elements of this changing ecology can and are drawn from US experience, the phenomena are global, for example, the vast numbers of students outside the USA joining various MOOCs (Professor Sebastian Thrun's artificial intelligence course offered in 2011, for example, drew 160,000 students in 190 countries; Lewin 2012). The critical issue to be explored through further research is the extent to which these changes in the ecology of higher education exist and are relevant primarily in the USA or whether they exist in other higher education settings as well—that is, in this regard, is the USA a forerunner or an outlier? (For an earlier exploration of this issue with respect to the changing character of higher education as a public good, see Bigalke 2009).

The questions we need to ask, utilizing the changing ecology frame as an example, are how is higher education changing as a result of globalization dynamics and what are the consequences, both general and particular, for higher education as a social sector?

With respect to the first question, the itemizations contained in the changing ecology can be viewed as a pragmatic inventory of change. The current list seeks to identify and organize the dimensions on which higher education change is occurring and then to begin to assess the implications of those changes. For example, the initial inventory exercise that produced the above list identified 128 separate items of sufficient importance that they had been singled out in the literature as a discrete instance. As we have sorted through this inventory to produce the categories listed above, we have found it useful to reduce the relevant number once again to some 51 items. The research that stands before us is to recognize these or some similar list as an effort to inventory and then plot the major changes that are taking place within higher education environments/ecologies and then to assess them with respect to inquiries focused on particular aspects of change. (A full listing of these 51 items appears as Appendix).

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[1] I have tried to suggest one form of inventorying this emergent ecology in a recent publication (Neubauer 2011), while continuing to work with a task force group created by the Western Association of Schools and Colleges (WASC), which both initiated the work and is committed to carrying it forward. A useful framing piece for this changing ecology is found in Peter Ewell 2010. The WASC task force has consisted of Lorne Buchman, Michael Clifford, Laurie Dodge, Millie Garcia, Samuel Hoi, Cyd Jenefsky, Chip Lenno, Susan Metros, Lisa Petrides, and Pamela Tate.

Three caveats are in order. First, it is important to realize that, whereas higher education as a *frame* is shared across nations and regions, as a set of particularities, considerable variation exists. Conceptually, if the problem before us is "how is globalization changing the university?," something akin to this kind of inventory for each country or region, a review will need to be accomplished. Second, not much is gained were one to attempt to collect such an inventory without remaining mindful of the very change dynamics to which Hershock and Harvey alert us. Contemporary globalization is a complex system in which elements interact in complex ways: major change in one part of the system will produce change in another, e.g., financial crises and levels of public support for higher education, or global changes in inequality and the overall rise in private, high-status higher education (Milanovic 2007; Sporn 1999). Harvey's insight into global change dynamics is that both the speed and the nature of change are changing; that is, new elements of change are being produced. The changing ecology elements appear to reflect this dynamic. Third, driven in large measure by the changing knowledge society elements of globalization (reflected again in many of the elements of the changing ecology), novelty and innovation have become prize outcomes within global economic relations—seemingly, every society and certainly the most advanced economically, look to innovation as a fundamental economic driver. Higher education is fully implicated both as an institution looked upon as a producer of innovation (the historic research function) *and* as an economic sector itself subject to significant innovation (Shaffer and Wright 2010).

It is critical, in this regard, to see these change dynamics in terms of the historic functions of the university wherein other sources of innovation have arisen to challenge the university as either its single or major structure. Throughout the innovation/knowledge society (again, documented by the changing ecology inventory), one can observe new institutions arising, often within the private sector, to perform these historic functions. At the extremity of our observation of how these dynamics may continue to develop, we need to begin asking in what ways conventional, traditional institutions of higher education may become *legacy* institutions within a social/economic/political climate that increasingly finds it difficult to sustain them given their accompanying pattern of relatively high costs for demonstrable value added. Below, I will discuss some of the innovations emerging within "global education" that appear to most have this potential, but, here, I think that it is instructive to see: (a) how singularly MOOCs were created, (b) how rapidly they have proliferated, (c) how much, in some respects, some of their aspects are completely consistent with the personality sociology of social networking, (d) how central to their initial success has been the high status of the institutions sponsoring them (e.g., Stanford, Harvard, MIT, Princeton), (e) how much energy is being devoted to figuring out how they can have meaningful "product tails" (i.e., some form of certification), and (f) how they can be monetized. (See, for example, Koller 2012).

As indicated, I return to these kinds of phenomena below, but to anchor this point, it is important to note throughout societies, especially through existing and emergent aspects of the knowledge economy, the role of non-universities to create, transmit, and conserve knowledge in forms that go far beyond what conventional

universities do. Already, these range from special-purpose institutions homed in on one skill or capability to very well-financed endeavors not often considered as either universities or even higher education institutions, such as the 2,800–3,500 *corporate universities* that exist within the USA, including those associated with such well-known global companies as Walt Disney and Boeing. Similar corporate universities (CUs) have existed in Japan for over two decades (Hirayama et al. 2003). In an ever-expanding focus, massive "media" companies such as Apple ("iTunes U: Your courses. Like you've never been able to teach them before") and Google (Google Code University) are targeting aspects of the "higher education market" with products that link content with their proprietary technologies (Apple 2012; Google 2012). The technological revolutions taking place in communication and display technologies such as "pads" of many sizes, and design and manufacture will create yet more new "disruptions" of the ways that customary "higher education institutions" function (Christensen et al. 2011). Again, the ubiquity of these technological devices ensures that their "disruptive" nature within traditional higher education delivery (and content) modalities will be a global phenomenon.

3.2.1 *Globalization and Education: New Combinations*

As globalization proceeds along some of the pathways suggested above, several "variables" need to be factored into any attempt to suggest how its dynamic forces will continue to transform higher education, even as new and novel impacts—such as those described immediately above—continue to structure and restructure the education ecology.

Among these are the possible pathways of cross-border education. As Jane Knight has argued on several occasions (see, for example, Knight 2006), the steadily increasing numbers of cross-border higher education students reflect various aspects of the globalization dynamics identified above, most particularly, the increases in global wealth (a function of its inequality dynamic), which make cross-border education possible for vast new numbers, increasing populations, increasing urbanization, and the structuring of cross-border education as an aspect of global trade through the General Agreement on Trade and Services (GATS). All of these situate it as a phenomenon squarely within the framework of contemporary globalization's circuits of exchange. Many estimates project that, by 2025–2030, the global cross-border flow will reach something like around 7.5 million annually (Vincent-Lancrin 2011). A multitude of strategies are pursued for initiating and conducting cross-border education, including efforts to improve international understanding, to foster skilled migration, as a revenue generator, and to promote overall system capacity. Vincent-Lancrin projects three possible future scenarios for cross-border education, including creating patterns of sustained diversified internationalization, promoting convergence toward a liberal model (a triumph of sorts for the "older developed" economies), and a triumph of the (former) emerging

economies—which, of course, in the current global economic climate, are displaying among the highest rates of economic growth.

Whichever of these scenarios may come to pass, it is clear, in some respects, that they are being driven by the overall macroforces that propel all of contemporary globalization.

Cross-border education is situated globally within a highly dynamic expansionary framework for all of the very reasons that Knight documents. The structural dynamics that have propelled the expansion of contemporary globalization have, throughout this "global system," been framed and attenuated primarily by neoliberalism across the range of multiple forms which it has taken in discrete national settings (Steger and Roy 2010), all of which work to privilege the private sector. The implications and working out of neoliberal initiatives within higher education are, I suggest, only in their initial form and will continue to ripple through higher education along global pathways (Kinser et al. 2010). Within the USA, for example, these neoliberal dynamics have led to the emergence of an entirely new pattern of private sector proprietary institutions. By any standard, their growth has been spectacular, accounting for approximately 4 % of the overall higher education sector at the turn of the century and approaching 10 % of the overall sector in 2012. During the process, this movement has spawned organizational forms characteristic of other economic sectors but new to higher education, such as large national corporations of a public equity form that allow them to raise capital and trade on global stock exchanges, and, for mostly economic purposes, behave much like any other large-scale modern proprietary firm, including developing aggressive plans for global expansion. The Apollo Group, the corporate parent of what is now the largest American university, Phoenix (and which, in reality, should be termed a transnational corporation), with a market capitalization of some $5.2 billion in 2011, is the largest of these entities but, by far, not the only one. (As of this writing in November 2012, that market cap had fallen to $2.13 billion, reflecting the volatility of the stock, a point to which I turn shortly). The Apollo Group is a genuinely global corporation, with holdings in various other countries,[2] but with an explicitly global reach and perspective, employing as a slogan on their website, "Playing a vital role in educating the world."

This rapid increase in sectoral growth has produced several ironies, judged from a neoliberal perspective. Again, to select an American model, the growth of the sector has been fueled primarily by a dramatic influx of students attracted by the vocational/market skills orientation of such institutions, including those exiting the US military, the vast majority of which are dependent on student loans from the US government. The sector as a whole, in the perspective of recent hearings in the U.S. Senate, headed by Senator Harkins of Iowa, has been severely criticized for its exploitation of its students, the findings holding that per-credit hour costs in such

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[2] A brief chronological history of the Apollo Group is given. Source: http://www.apollogrp.edu/about/our-history. Accessed: November 23, 2012.

institutions are higher and the completion rate to degree distressingly low. To cite a recent committee report:

> In this report, you will find overwhelming documentation of overpriced tuition, predatory recruiting practices, sky-high dropout rates, billions of taxpayer dollars spent on aggressive marketing and advertising, and companies gaming regulations to maximize profits. These practices are not the exception – they are the norm; they are systemic throughout the industry, with very few exceptions.... (U.S. Senate 2012)

This one issue highlighted by the report is the continuous and dynamic tension that exists within this transitional higher education environment, where private proprietary education challenges the conventional regulation of the higher education sector by the state, whether accomplished through a "third mechanism," such as peer review of higher education quality in the American context, or through a more formal government-oriented mechanism of quality assessment and review, such as that which exists throughout most of Europe and Asia. Specifically, the issue becomes the tension between the pretentions of private proprietary higher education to conduct its program in the direct interests of the student, including preparing the student for the rigors and demands of market placement and the ordinary, everyday pressures to maximize profits in a competitive economic environment. One inseparable component of this pretention is that the education provided will be of sufficient quality to meet these market tests. The burden of the Harkin committee report is that this has failed in the US context. Other examples of the disruptive effects of private proprietary education within a previously stable market exist, such as that of India, where, when the regulatory climate allowed their relatively open entry into the market, their presence quickly outstripped existing regulatory arrangements (Agarwal 2006).

A critical issue which, again, has its analogue throughout the "product" flows of globalization's circuits of exchange, is that of matching quality with price in the emergence of the kinds of markets envisioned by neoliberal theory. For higher education, this means that quality becomes a kind of currency, which shares numerous properties with products in other global markets. However, *overall*, quality within higher education is highly problematic in general (GUNI 2007) and, across the reach of the international higher education exchanges being wrought by contemporary globalization, it is even more so. Many quality assurance entities within regional settings are rapidly seeking to expand into international frameworks to provide some measure of commonality to quality certification. (For example, the Council for Higher Education Accreditation in the USA—CHEA—has just created an International Quality Group with an attendant advisory council for just this purpose.) Simon Marginson has argued persuasively that one very important function of the global rankings phenomenon sweeping higher education is its ability to function as an arena for both the creation and the exchange of the symbolic currency represented by the dynamics projecting national higher education into global settings (Marginson 2010). Rankings and other forms of quality indication can be viewed in this frame as generating an exchange rate for international/global higher education.

3.3   The Role of Crisis in Global Higher Education

As a complex system, contemporary globalization often presents situations in which "normal" patterns of interaction are significantly disrupted. These can occur for any number of reasons, depending, in part, on the nature of the crisis being experienced within the global setting. The most familiar are those that happen within the global or regional financial systems, wherein national policy settings and the ability of national political and economic institutions to insulate themselves from global forces is challenged (Forbes et al. 2012). The global fiscal crisis initiated by the collapse of the US housing market in 2007, for example, is estimated to have resulted in a diminution of global wealth of some \$50 trillion in the period 2008–2009. Even as some countries such as China and India were spared the worst effects of the crisis because of their astonishingly high growth rates prevalent at the outset, they still experienced significant downturns in national income and governments were forced to develop massive stimulus projects to sustain high growth. Much of the rest of the world experienced significant GDP losses, which, in most, instances came to be translated eventually in restricted government budgets that impacted education at all levels. In the USA, the impact on public higher education is the greatest in the postwar period and has created significant crises in access and equity. In Europe, the prolonged financial distress has created country-by-country issues that have resulted in policies such as dramatically increased tuition fees for higher education and restrictions in access. These events, well known as they are, document, in a particularly prosaic manner, the extraordinary growth of global interdependence that currently characterizes higher education throughout the world.

Tracing such crises after the fact is both commonsensical and illuminating, and clearly illustrates the essential interdependence of globalization. Within higher education, such effects tend to be conceptualized and experienced primarily at the institutional level. With increasingly less support from traditional sources of public funding, institutions, if they are to carry on and maintain their missions, must seek additional sources of income. Overwhelmingly, in country after country, this has resulted in the increase in student fees. In this way, crisis comes to have a policy face, forcing higher education institutions to do what they, otherwise, would not do…a situation observable in the USA, Australia, much of Europe, and significant parts of Asia, often with complex secondary effects, such as an aggregate increase in student loans. (See, for example, a recent analysis of student fee increases in China, Dong and Wan 2012). One US university president has termed this the "unplanned privatization of American higher education" (Armenti 2010).

Viewed within the context of an overall ecology situated within the complex structures of globalization, significant perturbations of the system as a whole may be experienced in various parts as crisis at the local level, such is the case with cross-border education. As the very size of cross-border education increases, receiving institutions in various countries come to experience it as an income source to which they soon become dependent, especially when their own local economies are struggling. Seen as a complex signal set, the myriad of factors that make up higher education induce one set of destinations at a given time to appear more desirable

than others, thus, promoting destination movement. Overall, shifts in destination result in a set of "local crises" as receiving institutions, over time, have become more dependent on importing students and their tuition dollars (Fischer 2012).

As policy phenomena, crises operate to reposition players, interests, and resource flows within any policy system (Stone 2011): some "policy players" and interests are advantaged and some disadvantaged (a fact embodied in the bromide that "a crisis is a terrible thing to waste"). One reading of the rapid rise of "new education" providers suggests that this is exactly what is occurring at both national and international levels: private sector bundlers and providers of higher education are moving rapidly to define and position global markets with new institutional forms derived from global corporations (see, for example, the Global Education Group 2012; Wheeler 2012). Within higher education *structures*, this is creating a revised academic model fashioned after business practices that have been evident in corporate business activities for decades, but which have been slow to enter higher education because of the preeminent role played within its traditional functionality by faculty. Especially when combined with distance education, this leads to the unbundling of traditional faculty roles of course creation, delivery, assessment, and advising, with the overall result that faculty, as participants within the overall organization, take a subordinate role to that performed by administrative structures.[3]

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1974	Institute for Professional Development (IPD) is founded. The institute is Dr. Sperling's first endeavor for working learners, teachers and police officers who worked with at-risk children
1976	University of Phoenix (UOPX) is founded. As Apollo Group's flagship school, the university leverages innovations such as online libraries and eBooks for use in higher education
1995	Western International University (West) is acquired. West is a private higher education institution aimed at preparing working students from around the world for leadership positions in the dynamic, global marketplace. Its curriculum combines each area of study with economics and communication
1997	College for Financial Planning (CFFP) is acquired. CFFP, established in 1972, reports more than 120,000 graduates in a variety of financial planning disciplines
2007	Apollo Global is established and expands the company's global reach
2008	Universidad de Artes, Ciencias y Comunicación (UNIACC) is acquired. The Santiago, Chile-based university is the first online autonomous professional institute in that country. UNIACC is one of the leading arts and communication universities in Latin America
2009	BPP University College (BPP) is acquired. The UK-based organization is a leading provider of education and training to professionals in the legal and finance industries
2009	Universidad Lationoamericana (ULA) is fully acquired. The accredited, private university offers secondary and higher education in medical, dental and communications fields. Instruction is online as well as at campuses throughout Mexico
2011	Carnegie Learning is acquired. The organization is a publisher of research-based math curriculum including software and technology from Carnegie Mellon University

The basic components of this model were developed over four decades ago by the British Open University and were readily adopted by other nontraditional, non-distributed institutions of higher education. The argument being made here is that the dynamics currently operating within the whole of the global higher education system are creating a new economy of values that, among other things, de-status traditional faculty.

This model serves the private for-profit educational model well, but is also making distinct inroads into "conventional" higher education institutions struggling to sustain themselves financially—a circumstance within which the entire palette of "new educational course modalities," such as those described above in the changing ecology inventory, need to be assessed. Within all this "churn" of higher education innovation, one can see that the varieties of global crises display both faces: that of challenge to "typical" or "traditional" institutional practices and as opportunities for innovation and change (Wildavsky 2010). And, overall, the playing out of these crisis dynamics are usefully viewed as one more aspect of how mobility and migration function within the global system (Neubauer and Tanaka 2011).

3.4 Conclusion: Implications for "Future Emergent Universities"

If we go no farther than to assert the basic premise of this chapter, namely, that higher education institutions are ineluctably situated in the complex system of globalization as briefly outlined and, as such, are acted upon and forced to respond to the dynamic changes taking place and, eventually, permeating it, what are some of the implications for their "emergent transformation"? In this brief chapter, I have sketched some of these implications. Through a steadily growing literature both within higher education and from a broader corporate/quality perspective, some of the implications are beginning to take shape.

For example, it seems clear that, within the near future at least, these nascent developments will continue to gather shape and grow:

- The international higher education sector, both for profit and non-profit, will continue to grow in size and shape in response to the steady wave of cross-border initiatives,
- These initiatives will very much be shaped by ongoing demographic changes, wherein experienced higher education providers in the more advanced technology countries (which, with some exceptions, have declining growth rates) will seek markets in societies with higher growth rates,
- Education delivery, propelled by a continuously rapid technology growth, will continue to challenge boundaries, both national and institutional,
- Higher education focused on the traditional 18–24-year-old cohort will continue to erode as student populations age due to the reentry of older students, with the concomitant change in the meaning of "lifelong education" and, as such, potential student populations will be redefined,
- Disruptive education creation and delivery will continue to grow as they allow for the framing of education in relation to the specific needs of learners, who, themselves in a competitive economic world, have their education needs attenuated by market availability and demands,

- These forces will express themselves (as do all global dynamics) simultaneously as outward facing (toward the emergent global) and inward (in response to the needs and disruptions of the local),
- Irreducibly, higher education institutions at the policy level will be forced themselves to become future-oriented as the pace of technology change continues to accelerate and their functional roles within society continue to change.

Such assertions are but the beginning of a kind of more systematic analysis that is due higher education in this critical period of historical transformation, and of which the other chapters of this book are contributions. What stands before us is an ever more systematic effort to enumerate and specify the elements of the changing ecology of higher education (and learning) in the context of a continuously transformative global system.

Appendix

Characteristics of Learners

1. Increasing diversity and demographic shifts (racial/ethnic, economic, country of origin, age, disability, veteran, and so on)
2. Extended lifespan of learners (lifelong learning)
3. Increasing numbers of non-degree-seeking students
4. Greater student mobility from college to college
5. Academic readiness of students for college and university work
6. High technological affinity/dependency of students
7. Desire of students to have meaning and make a difference
8. Increasing numbers of working students (with implications for availability of time on task)

Roles and Responsibilities of Faculty

9. Unbundling traditional faculty roles of course design, instruction, grading, assessment, mentorship into separate discrete entities (e.g., the faculty member who teaches the course may not be the faculty member who designed the course)
10. Recasting instructors as guides of student learning
11. Increasing use of adjuncts, part-time, and contingent faculty
12. Shifting power relationships between students and teachers
13. Disruption of the traditional role of faculty as authority, content provider, distributor of knowledge

Methods of Instruction and the Learning Process

14. Increasing variety of instructional methods, including virtual, hybrid, blended, customizable, personalized, self-paced, and so on
15. Growth of cross-disciplinary, cross-institutional, and transnational teaching
16. Increasing knowledge of how people learn; advances in the neuroscience of learning
17. Incorporation of differential learning styles
18. Using research-based principles of learning in instruction (i.e., faculty members take into account students' prior knowledge of the subject matter; actively involve students in learning through engaged interactions and discourse; challenge students to meet high expectations; provide opportunities for practice, feedback, and review; and help students generalize, apply, and transfer what they have learned)
19. Increasing use of collaborative, collective learning inside and outside the classroom
20. Incorporation of mobile learning and social media

Content and Focus of Instruction

21. Greening the curriculum (sustainability, environmental awareness, etc.)
22. Internationalizing the curriculum and addressing global issues
23. Expanding service learning and internships
24. Increasing the emphasis on civic responsibility and civic engagement
25. Promoting undergraduate research
26. Incorporating digital literacy (visual information, new media, digital production, programming)
27. Remixing, reusing, re-purposing information

Pressures on Higher Education

28. Demand for evidence-based outcomes of student learning
29. Demand for affordability
30. Demand for efficiency and cost control
31. Demand for portability of degrees and certificates
32. Public and politician/policymakers' poor perception of higher education
33. Changes in federal regulations and federal reach into colleges and universities
34. Criticisms of the liberal arts
35. Growth of profit/non-profit arrangements between universities and businesses; mergers, acquisitions, partnerships, conversions
36. Movement of historically noneducational entities into offering degrees (hospitals, theater groups, think tanks, film production companies, publishers, global internet companies, etc.)

Frameworks in Higher Education

37. Do it yourself (DIY) models of education (creating own degree programs)
38. Massively open online courses (MOOCs)
39. Competency-based instruction
40. Partnerships with industry for workplace training and lifetime learning
41. Charter universities

Certification, Credentials, and Accreditation

42. Badges
43. Creating common definitions of a credential
44. Certifying prior learning (e.g., CAEL)
45. Integrating informal and formal learning within the accreditation process
46. Developing common standards across regions and common processes of accreditation

Policies and Metrics

47. Focus on productivity, return on investment, return on value
48. Focus on quality-of-life metrics
49. Assess impacts of private equity and for-profit education; review policies that govern partnering between non-profit and for-profit institutions
50. Shift more of the cost burden of higher education to business as education becomes more job market-oriented
51. Promote the public good (increased value of higher education to individuals and society)

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Chapter 4
Economic Crises and the Post-Massification of Higher Education

Jung Cheol Shin and Yangson Kim

4.1 Introduction

The unit cost for higher education is much greater than for elementary and secondary education, which makes higher education more sensitive to economic factors. In addition, policymakers view higher education as a semipublic good, resulting in the government cutting the higher education budget in economic downturns more than other levels of education or social welfare. Higher education is called a "budget balancer" because government increases the higher education budget first when the economy is booming, but cuts it first when the economy is declining (McGuinness 2011). With globalization, the economy changes more frequently and the durations of these changes are notably shorter than in the past. As a result, higher education is very sensitive to the economic situation, as was shown in the 2008 crisis. One cannot, therefore, discuss the challenges of contemporary higher education without considering the economic cycle.

Economists have classified economic cycles as long-term, midterm, and short-term cycles. The long-term cycle (between 40 and 60 years) is called the Kondratieff cycle, the midterm cycle (between 15 and 40 years) is called the Kuznets cycle, and the short-term cycle (between 7 and 11 years) is the Juglar cycle. According to economists, these cycles are becoming shorter since the global economy emerged in the 1990s (Harvey 2010). Economic fluctuations are annual events and we sometimes see these multiple times a year; consider, for example, the European financial crises in Greece, Italy, Spain, and Portugal. In an economic crisis, each government uses different strategies to deal with the crisis. Governments may adopt a balanced-budget approach, a plus budget, or a minus budget, depending on their political ideology. Left-leaning governments tend to adopt aggressive (or minus) budgets, while conservative governments adopt reverse-approach (balanced or plus) budgets.

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In their comparative overview of the relationships between economic cycles and higher education, Windolf and Hass (1993) found that European governments adopted an anti-cyclical approach to midterm cycles, investing more during economic downturns. The USA and Japan, on the other hand, show a pro-cycle approach to midterm cycles, which means that both governments reduce their higher education budget during an economic crisis. However, Windolf and Hass (1993) did not find any clear patterns during the short-term cycle. This is also reported in some other studies. For example, the US states downsized their higher education budgets during economic recessions in the 1990s (Kane et al. 2003; Humphreys 2000). This is due to the competition between the higher education budget and that of other education sectors, such as elementary/secondary education, or other social welfare when it comes to prioritizing expenditures, and the latter are usually resistant to economic cycles.

The different approaches to higher education during an economic crisis depend on the government's political ideology of education. These are critical when discussing higher education in an economic crisis, especially in this post-massification stage when most college-age students are enrolling in a form of higher education institution. This chapter discusses policy perspectives on higher education that address the relationship between economic crises and higher education, and whether higher education is a public or private good. Finally, the chapter will provide an overview of some of the issues and challenges related to post-massification and economic crises, and consider how higher education can survive in such times.

4.2 Economy and Higher Education: Three Perspectives

In relation to economic cycles, there are commonly three perspectives that can be taken regarding education. These also expose education's role in society. One perspective is to see education as contributing to the welfare of human beings; the second is education as human resource training; and the third is education as a channel for social mobility. In Europe, policymakers have long considered education as a form of social welfare. Based on this perspective, the government does not reduce the education budget during an economic downturn, but may even increase it because welfare expenditure should not be decreased in an economic crisis. On the other hand, if education is viewed in terms of human resource training, the government may reduce the education budget because the demands for human resources tend to decline during an economic crisis. If education is regarded as a channel for social mobility, the government may not invest much in education and leave it to parents and students to bear most of the financial burden.

Socialism countries, especially those in Europe, have generally thought of education within the framework of welfare. In these countries, students do not pay

educational tuition. On the other hand, in countries which adopt a market-oriented system, such as the USA, education is considered a means of training human resources and they tend to rely heavily on the demand and supply of the market in their decision-making. Societies with a more flexible social stratification tend to view education as a means of social mobility. East Asian countries, especially in Northeast Asia, have a strong tradition of academic merit-based resource allocation (e.g., Shin 2012). In these countries, education provides an opportunity for improved social mobility. These various differences in educational philosophy result in different educational policy directions.

Figure 4.1 illustrates the relationship between education and the economic cycle. It shows how unemployment is related to education (elementary/secondary education and tertiary education) in the two selected representative countries from each category: welfare states (France and Sweden), market-oriented states (USA and UK), and the countries that regard education as a channel for social mobility (Japan and Korea). As shown in Fig. 4.1, the two welfare states (France and Sweden) invest more than the other two groups. They invest about 30–50 % of GDP per capita in tertiary education (tertiary expenditure per student), while the market states invest about 20–30 % and the East Asian countries about 10–20 % of GDP per capita. This suggests that higher education expenditure is primarily paid from public funds in the welfare states, but less so in the market and the East Asian countries.

Another topic of interest is the expenditure gap between education at the lower level compared with the upper level. The gap between the two levels is wide in the East Asian states, but narrow in the welfare states, suggesting that the East Asian states approach education at lower levels in terms of social welfare or public goods; on the other hand, the East Asian countries consider higher education as semipublic goods. The welfare states, by contrast, do not demonstrate distinct differences in their approach to lower and higher education. Interestingly, the gaps between lower and higher education have become wider in the market states, and this might be related to the financial crisis of the late 2000s.

The figures do not provide a clear relationship between the economy and education because unemployment, which is the measure of economy, was lower than 10 % in these countries. A correlation analysis was conducted to better show the relationships. Approximately 30 years (from 1980 to 2009) of unemployment data and tertiary expenditure per student data were included to generate correlation coefficients. As shown in Table 4.1, France reduced its higher education budget when the economy was in a downturn, but not so for social welfare or primary and secondary education. On the other hand, Sweden increased tertiary expenditure when the economy was in a downturn. The case of Japan shows that the government decreased tertiary expenditure during an economic downturn, but increased primary and secondary expenditure. There are no significant correlations between the economy and social welfare and primary/secondary education in the market states and Korea. These findings should be further analyzed using more sophisticated statistical analysis (e.g., multivariate analysis) in a follow-up study.
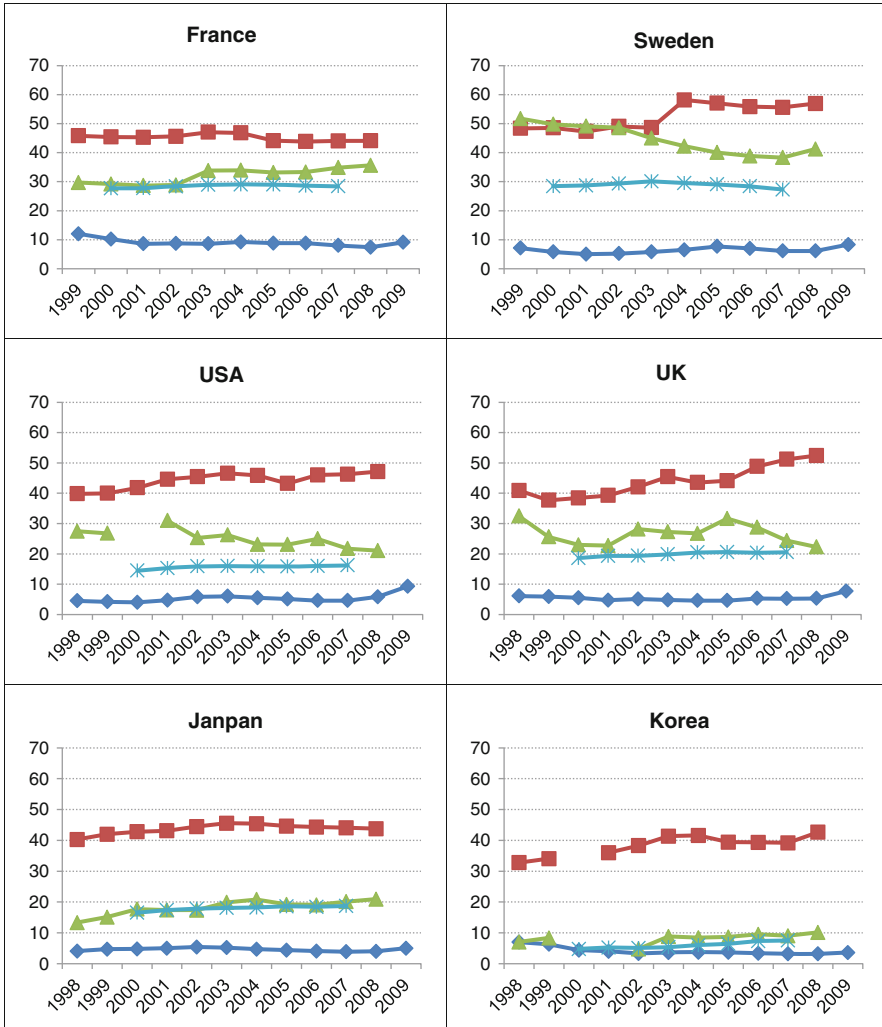
Fig. 4.1 Economic situations and education investments (Data sources: (a) Word Bank (1998–2009)—Total unemployment, tertiary expenditure per student, primary expenditure per student, secondary expenditure per student, (b) OECD (2000–2007)—Total public social expenditure as a percentage of GDP. Notes: ◆ unemployment, total (% of total labor force), ■ primary and secondary expenditure per student (% of GDP per capita), ▲ tertiary expenditure per student (% of GDP per capita), ✳ total public social welfare expenditure as a percentage of GDP)

Table 4.1 Correlations between economy, welfare, and education expenditure

Policy types	Country	Unemployment and welfare[a]	Unemployment and tertiary expenditure[b]	Unemployment and primary/secondary expenditure[c]
Welfare states	France	−0.311	−0.537[**]	0.244
	Sweden	−0.590	0.533[*]	−0.067
Market states	USA	0.594	−0.428	0.257
	UK	−0.424	−0.295	0.092
Northeast Asia	Japan	−0.526	−0.542[*]	0.690[**]
	Korea	−0.644	0.250	0.137

Data sources: (a) Word Bank (1998–2009) (total unemployment), (b) OECD (2000–2007) (total public social expenditure as a percentage of GDP), (c) UNESCO (1998–2009) (tertiary, primary, & secondary public expenditure per pupil as a % of GDP per capita)
[*]$p < 0.05$; [**]$p < 0.01$

4.3 Higher Education: Public or Private Goods?

Different policy approaches during economic cycles depend on the political ideology on education, and whether policymakers conceive education as public goods or semipublic goods. This section conceptualizes higher education in terms of public or private goods and leads to more discussion on the topic of teaching and research functions, which is a main theme in this book. We can conceptualize higher education as public goods or private goods by levels of education (undergraduate and graduate), their functions (teaching and research), and by the nature of their research (pure and applied).

- Levels of education: undergraduate education is more like pubic goods than graduate education. Undergraduate education contributes more public benefit than graduate education. Policymakers view graduate education as a personal choice, whereas they have a policy goal of enhancing access to undergraduate education in post-massification.
- Functions of the university: teaching and service are more like public goods than research. Teaching and service functions connect more directly with society, while research is focused on the people who are interested in the research outputs.
- Nature of research: pure/basic research is more like public goods than applied research. Pure and basic research is the type of research that a university is expected to conduct, but applied research could be done by the private sector.

The conceptualization is represented by four dimensions in Fig. 4.2. Undergraduate education and pure/basic research are in the "public goods" dimension (public level 1), but graduate education and applied research are closer to "private goods" (public level 3). The undergraduate category with applied research or graduate education with pure/basic research lies in between the two (public level 2).

The notion of public goods differs according to one's political philosophy of education. European countries tend to focus on the pure and basic research at university, while market-based systems such as the USA and the UK tend to have
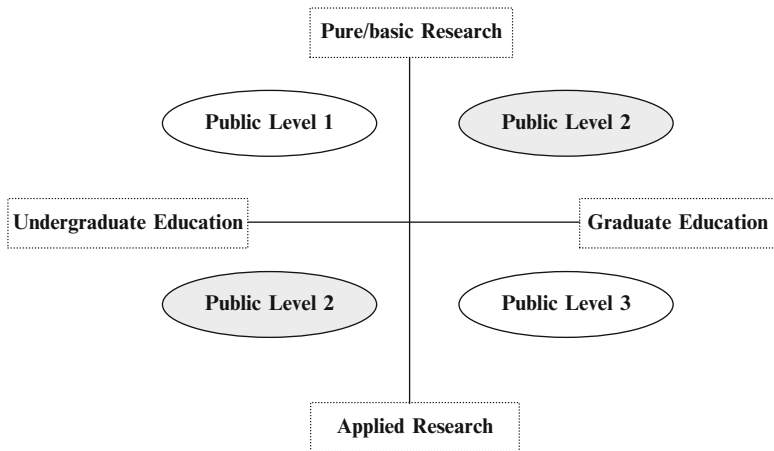
Fig. 4.2 Four dimensions of education and research as public goods

flexibility to conduct applied research and benefit-generating activities. The East Asian higher education systems are a mixture of both public and private goods. Because of a strong belief in the value of education, the East Asian systems embrace a wider view of education (regardless of whether undergraduate or graduate) and research (pure or applied) as public goods. However, parents and students are more willing to pay for their education, regardless of its level.

Resource investment is a good way to define whether education and research is seen as public or private goods. Traditionally, education and basic/pure research have been conceived as public goods (e.g., Bush 1945; Merton 1979), but applied research is now the main focus of academic research activity in the knowledge society (Slaughter and Rhoades 2004). States consider knowledge production as an engine of economic development and the global competition to build a world-class university has become a critical policy issue for many countries, including those in Europe (Shin and Kehm 2013). Research is now considered public goods in many higher education systems, regardless of whether it is pure/basic or applied research. The comparisons between countries on their resource inputs to teaching and research provide insights on how each country approaches teaching and research differently (Fig. 4.3).

Two Asian countries (Korea and Japan) are investing less in tertiary "education" but relatively more than other countries in research and development (R&D) (Regression line 1). On the other hand, European countries are investing more in "education" but less in R&D (Regression line 2). The market-based systems (e.g., USA, UK, and Australia) are in between Europe and the two Asian countries. The European systems maintain their tradition of treating education as public goods, but research activities, especially in applied research, are not highly regarded as public goods. The market-based countries depend on the market to guide their decisions on education and R&D investment, which leads to an overall lower educational investment than European countries, and less in R&D investment compared to their Asian counterparts.
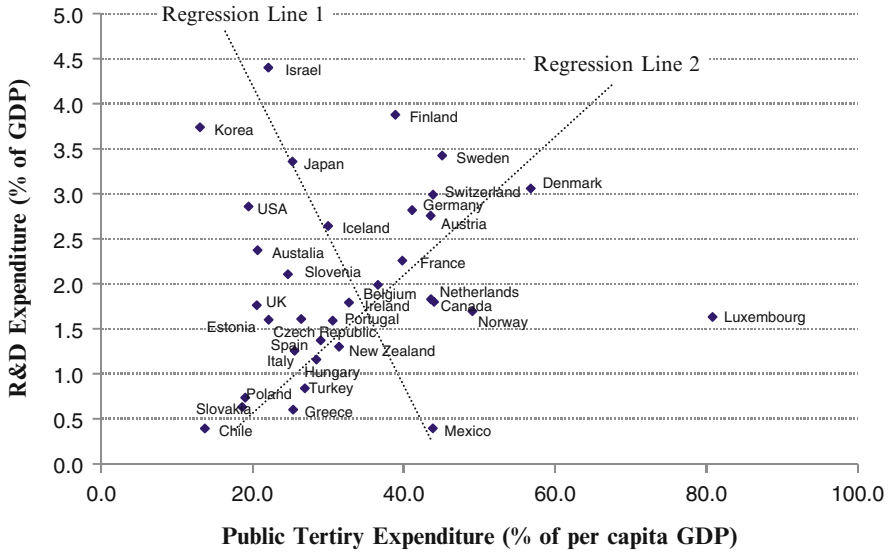
Fig. 4.3 The share of GDP for tertiary education expenditure & R&D (Data source: UNESCO (2010) (http://stats.uis.unesco.org): R&D expenditure as a percentage of GDP, and public expenditure per pupil as a % of GDP per capita for tertiary education)

The two Asian countries are interesting in terms of R&D investments. In both countries, education has been considered as public goods. However, the private higher education sector in these two countries is significantly larger compared to other countries where parents and students bear the high tuition costs. These governments tend to use their supplemental resources on R&D (Shin 2012). This is a distinctive feature of both education and R&D investment in these two countries. However, it does not mean that higher education is considered as private goods in both countries. This approach is only possible because parents and students are so willing to pay for their education, a feature of Asian culture. Research is critical because both countries have a strong manufacturing-based economy. Although the R&D investment is not purely funded by the government, R&D activity in the private sector is not necessarily done purely by the private sector itself because such investment receives tax waivers in both countries, and this makes private R&D investment another form of public investment.

4.4 Economic Crisis and Post-Massification

Economic conditions are critical in post-massification because most college-age students are enrolling in higher education, leading to rapidly increasing educational expenditures. On the other hand, in the neoliberal societies, the public view of higher education in post-massification is shifting from higher education as public

goods to semipublic goods. The notion of public goods is dramatically changing in the market-oriented systems, where marketization is widely applied in university administration. In the market-oriented systems, parents and students pay a significant portion of expenditures, while the government portion is continuously shrinking. The two East Asian systems both charge high tuition fees also.

From the point of view of economics, mass higher education leads to an increase or decrease of expenditures. A university can teach a larger class in the massification stage and achieve a greater scale of economy. The increase in the number of students does not mean that they need proportionally more professors, facility, and administrative staff, but, in fact, the universities can provide teaching with marginal input. On the other hand, universities have faced more complex teaching functions, providing remedial services for underachieving students, requiring professors to assign more time to consulting with their students, and developing more complex administration services to cope with the greater numbers of underrepresented students. This increased expenditure makes universities more sensitive to gaining government funding. At the same time, governments are struggling with decreasing finances, especially in those countries with strong welfare policies or with low tax rates, such as the USA and Japan.

The massified university can consider three approaches to addressing a financial shortage during an economic crisis.

- The first approach is to increase tuition fees. Universities in many countries have increased their tuition fees or, where student tuition used to be free, they have begun to charge (Johnstone and Marcucci 2010). Many states in the USA have increased fees by more than 50 % over the last 10 years and some, such as California and Arizona, have introduced even greater increases in 3 years in the early 2000s (Shin and Milton 2006). This approach often accompanies student loan policy. In other countries, e.g., Korea and the UK, tuition fee increases have become major political issues in 2011 and 2012.
- A second approach is to bring in external resources through donations, research funding, and marketing activities. Outside of the USA, donations are not a common approach (Shin 2011). Although a university can support the research activities of their professors, provide assistantships for graduate students, and build new facilities through external research funding, it also requires matching funds from the university in many cases (Ehrenberg 2002), which results in additional costs when a university attempts to attract external research funding. Patents are a good source of external revenue, but very few universities are able to benefit from their intellectual rights.
- A third approach is to downsize university expenditure. Although this is not a popular approach, university administrators are advised to look carefully at their expenditures. The recent increases in tuition are highly related to research competitiveness between universities seeking global ranking (Shin 2011). Research is a highly resource-demanding activity, which results in universities requiring more and more publications from their professors; at the same time, universities inevitably reduce their teaching loads and provision of institutional

research grants, make their classes smaller in size, and hire full-time researchers. In this context, shifting the mission of the university from research to teaching might be an acceptable idea.

The first two approaches have been used by many universities. They are based on the assumption that current expenditures are reasonable. As discussed, however, regularly increasing tuition is no longer regarded as feasible, and marketing activities to attract external funding may or may not contribute to university revenues because these activities also incur extra costs for the university. Most of these extra costs are paid for by the students' tuition fees. The third approach provides some insight into the economic crisis. In the post-massified higher education era, should a university focus on research instead of teaching?

Tuition is a tempting way to increase university revenues, especially when the university enjoys a strong reputation and the demand from their graduates is high. Universities with a recognized reputation also have opportunities to attract external resources through donations, research funds, commercialization of their brand name, and so on. The "winner takes all" mentality explains why universities are attracted to ranking races (Ehrenberg 2002). The highly regarded universities—the winners—have a better chance of attracting talented students and professors, as well as external resources. The benefits that come with a good reputation encourage universities to become even more actively involved in the competition to enhance their reputation. Such competitions lead to "arms races" between universities (Arimoto 2011) and, inevitably, results in charging high tuition fees again.

According to economic theory, an increase in price results in a decrease in demand. However, this is not happening in higher education (Shin and Milton 2006). University enrollments have been continually increasing, even in the market-based society of the USA. The market principle does not work well in higher education. Universities, especially highly renowned ones, can charge whatever they like because higher education is a "positional good" (Marginson 2007). For students, there are not many options when faced with a tuition fee increase. They either move to another competing university (cross-price effects) that has not increased their tuition fees or they drop out of their program of study (Shin and Milton 2006). However, this may not be an option for many students because of the increasing wage gaps between employees with different levels of education. Dropping out of university for this reason will exclude them from the massified higher education society.

The only option is to take out loans from the bank or/and government. But there is no guarantee of a job after their graduation, especially in the economic crisis. The contemporary economic systems are moving toward high-tech industry, which means that industry no longer provides enough jobs, even during an economic boom. Economic growth without employment is becoming a common feature in many countries. Among college graduates, only small numbers of lucky students are offered good jobs. Our conclusion is clear and simple. Regardless of an economic crisis or economic boom, one simple solution is to provide university education at a lower price in the massified higher education. Our main concerns

then move toward how to downsize or economize university expenditure (Shin 2011). The largest share of expenditures are composed of salaries, followed by buildings, laboratories, libraries, etc.

The next question is to consider why there has been such a rapid increase in expenditures during the past decade. Tuition fees have been rapidly increasing in the USA during the last 10 years. The main reason may not be the increase of direct expenditure, but the economic downturns in the USA. However tuition fee increases became a global phenomenon in many countries in the mid-2000s. Neoliberalism is deeply embedded in the global phenomena of tuition fee increases. These have been led by the neoliberal regimes in many countries. Another factor to which we should pay attention is the global competition between universities seeking to obtain world-class university status. The world-class university requires research-focused, talented professors and a large number of international students on-campus (Altbach 2007; Shin 2013). These cannot be attained without major investments of resources. The competition to obtain world-class status has become a serious business, even in teaching-focused universities, and governments are actively encouraging the building of a world-class university even in such countries like Germany and France (Kehm 2013; Cremonini et al. 2013).

The first policy initiative was launched when the Chinese government adopted Project 211 in 1992 and Project 985 in 1996 to build a knowledge hub in China. A short time later, in 1999, the Korean government launched the Brain Korea 21 project after its economic crisis in 1998. The Japanese government adopted the Center of Excellence in 2002, followed by the excellence initiatives of the German government in 2005. Today, building a world-class university has become a global policy initiative in many regions, including Latin America, Africa, and the Middle East. These initiatives were accelerated by the emergence of the global rankings in the mid-2000s. With the fueling of the global rankings, the world-class university became a metaphor for excellence, research, reputation, and quality (Shin and Kehm 2013). Because of the strong influence of the rankings, most universities are influenced by the ranking indicators and focus heavily on improving their research performance in order to match the top rankers.

According to Middaugh et al. (2003) and funding formulae in the USA, teaching a course in a research university costs two to three times more than teaching the same course in a teaching-focused university. In addition, teaching graduate courses incurs higher costs than teaching at the undergraduate level within the same major areas. The existence of the research university was not a serious social problem. With the emergence of global ranking systems, the social cost for the research university became more problematic, since most universities are now pursuing the same goal, namely, to obtain world-class status (Shin and Toutkoushian 2011). A certain share of the costs for building a world-class university comes from the government or the private sector, and the rest of costs are paid by students equally between undergraduates and graduates (Shin 2011). The costs involved in building a world-class university are shared by the government and the students, and between graduate students and undergraduate students. Figure 4.4 shows the growth of student tuition fees as well as the growth of external research
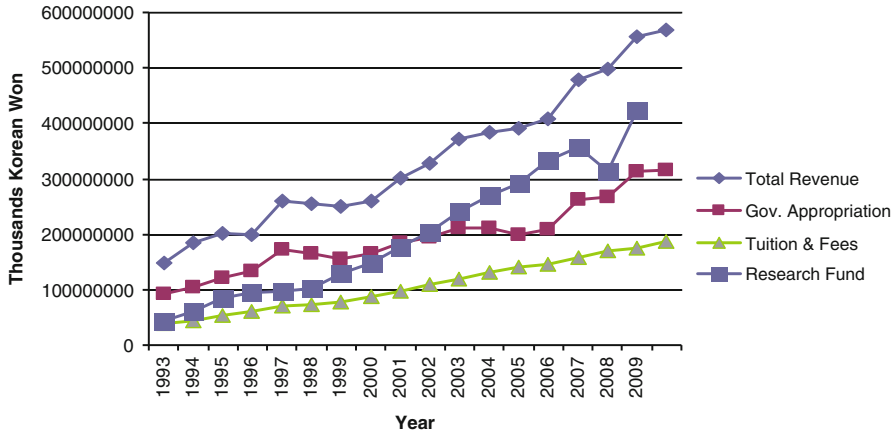
Fig. 4.4 Growth of tuition and external research funding (Seoul National University) (Data source: Annual budge report (1992–2010), Seoul National University. Note: Research fund is the total research fund, so that only a certain proportion of the research fund (overhead) is included in "total revenue")

funding for Seoul National University (SNU), which was ranked in the top 50 universities by The Times World University Ranking in 2011.

What steps might be taken to reduce university expenditure? Ignoring the global ranking system is a simple way, but it is unlikely to happen when the current system is deeply embedded in the current higher education sector, as well as in the mind of the public (Shin and Toutkoushian 2011). Global ranking is a social system that has emerged in contemporary society. Other endeavors are required in order to escape from the research-focused global competition. If the university should conduct research, what types of research should it pursue? Finally, should students— especially in undergraduate programs—pay the costs of this research?

Although in-depth historical and sociological discussion may lead to insights on these questions, there are still very few studies on research as a social phenomenon, despite the wide respect within education for research. Chapter 8 addresses this from a theoretical basis. Professor Marginson conceptualizes research in terms of its social meaning. In addition, Chap. 7 provides some possible rationales as to why the university should be reorganized as a social institution for education. The author's perspective is not only about economic issues, but from the perspective of students' development and the knowledge explosion.

4.5 Conclusion

Economic crises have become short-term cycles and their impact on higher education is more direct than ever, and this is especially true in higher education more than other forms of education. The core question for universities in the current era

of post-massification of higher education is how to survive without rapid tuition fee increases. This chapter has paid more attention to economizing university expenditures than to generating more revenue. As a practical approach, this chapter proposes to move from a strong research orientation to a place of balance between teaching and research. However, this argument needs to be supported by strong evidence, so that policymakers and university administrators will pay attention to this proposal.

Two decades ago, Ernest Boyer (1990) proposed four dimensions of academic scholarship in his famous book *Scholarship Reconsidered: Priorities of the Professoriate*. Boyer's argument was about the balance between different dimensions of scholarship from an education point of view. In Boyer's time, US universities were research focused in order to attract more external research funding. However, the strong research orientation was gradually diminished by policy and institutional efforts (O'Meara and Rice 2005). The changes were reflected in the Changing Academic Profession (CAP) data. In 1992, 50.8 % of academics professed a research preference, but this dropped to 44.1 % by 2007. This chapter has argued for a balanced scholarship from an economic point of view. Boyer's insight on higher education is highlighted again in global rankings and the competition for a world-class university.

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Chapter 5
The Internationalization of the University as a Response to Globalization: An East Asian Perspective

Akiyoshi Yonezawa

5.1 Introduction

The history of universities and modern higher education systems has been inevitably linked with the formation and development of the nation states. When starting the Bologna Process for forming the European Higher Education Area (EHEA), Neave (2001) mentioned a much longer process towards the "de-Europeanization" of higher education, namely, a process of gradual enclosure of universities into prospective nation states in Europe, beginning roughly during the Protestant Reformation and continuing until the end of the twentieth century. Altbach and Selvaratnam (1989) interpreted the development of Asian higher education systems after World War II as a dichotomy between dependence and autonomy, linked with the process of decolonization and formation of the nation states in this region. Nowadays, some East Asian countries, such as Korea, Singapore, and China, are becoming good models for pursuing the establishment of world-class status for their flagship universities, supported by strong governmental initiatives (Altbach and Balán 2007; Altbach and Salmi 2011).

On the other hand, the pressure of globalization on higher education is huge. Knight's widely used definition of internationalization of higher education—the process of integrating an international, intercultural, or global dimension into the purpose, functions, or delivery of higher/post-secondary education—certainly reflects the increasing impact of globalization (Knight 2006). The Organisation for Economic Co-operation and Development (OECD) argues that the approach to internationalization differs among countries (Santiago et al. 2008). However, Brandenburg and de Wit (2011) argue about "the end of internationalization of higher education," reflecting on the changing nature of the internationalization

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(1) from fringe of institutional interest to core; (2) from elite to mass; (3) from substance to form; and (4) from innovation to tradition.

In the twentieth century, we observed an expansion of higher education systems, first as a tool for colonization and then for decolonization. Global and regional collaboration in higher education has been strongly linked to the establishment of these new independent nation states, the rapid progress of internationalization, and the emergence of regional dimensions of higher education under globalization since the end of the twentieth century. At the same time, the development of a knowledge economy transformed the nature of higher education into a tradable service, as well as a platform for skill formation, which made knowledge workers mobile across borders. Internationalization, international collaboration, and the value of higher education should be reconsidered as more embedded in mutual reliance across borders among various stakeholders, such as academics, students, states, and industries.

Higher education research also faces the necessity of a paradigm change. We may take up Clark's triangle of coordination (state–university–market) (Clark 1983) and Trow's elite–mass–universal model (Burrage 2010) as two of the most influential models of higher education research in the latter half of the twentieth century. These two models were formulated when the idea of the nation state was most widely spread among both industrial countries and newly started nations as a result of decolonization. After that, many higher education researchers tried to refer to and challenge these established models. One approach is to point out the increasing impact of international dimensions in higher education. Marginson and Rhoades (2002) challenged Clark's triangle, and proposed a "glo-na-cal (global–national–local)" heuristic as a model for explaining higher education in the twenty-first century. Later, Marginson explored the behaviors of world-class or global research universities that act beyond the nation state (Marginson 2012). On the other hand, internationalization could work differently according to the national context. Referring mainly to European countries, Teichler (1999) developed a typology of internationalization of higher education as: (1) would-be internationalization; (2) internationalization for survival; (3) internationalization in two arenas; and (4) internationalization at home. Considering the actual realization of the EHEA through the Bologna Process, European countries may, to a greater or lesser extent, move towards internationalization for survival.

Higher education has now become a core knowledge industry, indispensable in the globalized economy. The functions of higher education have expanded from the union of academics, producing technocrats and professionals, contributing to society through knowledge creation and innovation, and serving education and others as a knowledge service industry. Especially among English-speaking countries, governments today are willing to protect higher education as a major export industry.

In this chapter, the author analyzes the past events, current trends, and future prospects of global and regional collaboration in higher education linked with the emergence of international dimensions. By doing so, the author argues on the future perspective of the regional and global collaboration in higher education for the sustainable development of higher education systems around the world.

5.2 Internationalization, Globalization, and Mobility

5.2.1 Emergence of International Dimensions

The most important feature of higher education in the twenty-first century has been the emergence and increasing importance of the international dimension. This can be observed in various ways. The first simple feature is a removal of barriers to cross-border mobility. In some aspects, the mobility of academics, students, and education service provisions across borders has led to concerns about quantity, and this mobility is not limited to the elite. On the other hand, the majority of students and academics do not move across borders.

The second feature is an uncontrollable expansion of and increased concern for the quality of higher education. According to the UNESCO Institute of Education, student numbers in tertiary education globally increased from 100 million in 2000 to 178 million in 2010. On the other hand, some countries such as Japan (4.0 million in 2000 and 3.9 million in 2010) and Korea (3.0 million in 2000 and 3.3 million in 2010) maintained stable trends in student numbers. When Trow's model was developed in the mid-1970s, most industrial countries tried to control the expansion of the university sector. Today, most countries, instead, compete for widening participation in higher education and seek further expansion of higher education at both undergraduate and graduate levels in order to assure the employability of their citizens in a globalized economy. On the other hand, this uncontrollable expansion leads to a concern about the quality of education services, as well as a decreased readiness for learning among students.

The third feature is the increasing mutual reliance across borders. It is becoming common for "world-class" or "global research" universities to participate in international university consortiums for academic and student exchange. Among the middle-range and more mass-oriented universities, commercial-oriented transnational education provisions are widely observed in various forms, from short-term study abroad programs to degree-oriented twinning arrangements. In countries faced with an oversupply of higher education, such as Korea and Japan, the absorption of international students compensates for the oversupply of the domestic higher education market. This, in some aspects, modifies the imbalance of learning opportunities at the global level. Various types of public and private agents or brokers collaborate on the recruitment of students internationally.

5.2.2 Constructing a New Reality Under Globalization

As Knight (2006) mentions, the internationalization of higher education is understood as a process to integrate global dimensions into higher education. Here, the standardization of higher education under globalization is frequently cautioned against. If globalization leads to the removal of barriers between different higher

education systems, a certain type of standardization is inevitable for facilitating the mobility of academics, students, and education services. The formation of regional dimensions might be utilized as a tool for protecting diversity among higher education systems against standardization under the pressure of globalization. In the globalized world, standardization tends to be processed through market forces rather than supranational-level policy actions or treaties by international organizations. The regional-level initiatives prefer the term "harmonization." Here, the prospective higher education systems respect mutual differences and facilitate international arenas through mutual recognition.

In Europe especially, the idea and reality of higher education as public goods is strong (Marginson and van der Wende 2007). Even now, European private higher education is highly peripheral, and the marketization and privatization of higher education common to Asia-Pacific is almost not applicable, at least within Europe. However, some higher education systems in Europe recruit international students on a full-fee basis (Kim 2011). These initiatives might be mentioned as commercial provisions for higher education outside of regional systems.

Conversely, the pursuit of public value in higher education does exist, even in a highly marketized and privatized context in the Asia-Pacific region. Intensive public investment in flagship universities is an especially common feature in the majority of Asia-Pacific countries. These universities produce national leaders and senior government officials and support the science and technology of the country, and the students and alumni receive respect from the general public.

Globalization removes the national boundary of competition. This creates enormous pressure for national flagship universities in Asia-Pacific. These universities have to compete globally while being strongly supported by the government and industry at home. Fierce competition encourages collaboration and partnerships among universities, governments, and industries, both domestically and internationally. This collaboration and partnership, in many cases, promotes the universities' public missions, especially among prestigious ones.

5.2.3 Incentives for Study Abroad

The global competition in higher education has various effects. One relates to the intention and phenomena of brain gain and brain circulation (Lee and Kim 2010). Public universities, especially flagship ones, and governments that seek competition within the knowledge economy try to gain the best talent domestically as well as globally. On the other hand, some universities try to attract full-fee-paying learners both domestically and globally, and governments also support this as a promising knowledge industry.

Universities may try to provide opportunities of study abroad and international experiences for their students and academics. Firstly, international experience itself can be an end goal for many students and academics. Opportunities of study and research abroad are still privileges for the elites in developing countries. For those

in advanced and emerging economies, the international experience itself became widely available. However, at least the initial experience of those international exchanges should be recognized as a major event to enrich the individual lives of students and academics.

Secondly, some universities promote study abroad and international experience in order for students to be aware of "the real world." For wealthy universities and colleges, such as top private universities and liberal arts colleges in the USA, financial resources are not an obstacle to providing international opportunities. The students do not need better learning circumstances, except for a closer link with the real world that is different from their beautiful campus life.

Thirdly, some students may seek quality learning opportunities unavailable in their home institutions or countries. Considering the nature of higher education institutions as positional goods, most students tend to seek opportunities to make use of partnerships with more prestigious, centrally located institutions. This creates an imbalance in student mobility.

Fourthly, some students seek opportunities for training in international communication, multicultural understanding, and leadership. This may be a mainstream mission for student exchange at the undergraduate level, typically among industrialized countries.

Lastly, career mobilization has become a widely shared incentive for both academics and students. Many enterprises and universities operate across borders. Job opportunities are generally more numerous for those who can work in an international environment.

5.3 International Collaboration and Partnership

5.3.1 International Collaboration in Asia-Pacific Higher Education

When discussing international cooperation in Asia-Pacific higher education, the experience of colonization must be considered. The origins of higher education systems in Asia-Pacific largely lay in the expansion of higher education systems in the suzerain states. The influence of the British higher education system is seen especially in Hong Kong, Singapore, Australia, New Zealand, Malaysia, India, and others. France and the Netherlands also influenced the formation of higher education in Asia. Japan, a former colonizer in Taiwan, Korea, and elsewhere, still has a sensitive position in international collaboration in higher education, which partly began as war compensation. Some argue that the expansion of the Japanese higher education system under colonization was the indirect implantation of the German Humboldt model into Asian countries.

The USA was a colonizer of the Philippines, but more influential in many countries during their move to independence. Especially during the Cold War, the

USA supported the development of higher education in many countries through their soft-power policies. The influence of US higher education is widely seen in the Philippines, Japan, Korea, Taiwan, Indonesia, and others. The former Soviet Union also influenced the development of higher education systems, such as those in China and Vietnam. In addition, British Commonwealth countries have collaborated mutually under the Colombo Plan, of which Japan also joined in 1955.

5.3.2 Nature of International Collaboration and Partnerships in Higher Education

The international collaboration and partnerships in higher education could be understood as an action of sharing resources of higher education across borders. Through the efforts to provide basic education for all, the demand for higher learning and actual student enrolment into higher education have continuously risen. Thus, higher education systems and institutions face continuous financial stringency at the global level.

Although some emerging economies, such as Malaysia and Indonesia, have increased investment into their top universities, these investments are not sufficient to compete with established institutions in the advanced economy in North America and Europe, or even with top Asian universities in, for example, Singapore and Hong Kong. Among the top global universities, there are many initiatives for setting up partnership and consortiums with the sharing of equipment, facilities, and infrastructures, both on-site and at home. Human resources are also shared for teaching, knowledge and skill transfer, and mutual capacity development.

International cooperation for system design, planning, administration, and the operation of higher education policies and institutions is also common. For example, the World Bank and Japan Bank for International Cooperation (JBIC) implemented sector-wide studies of higher education in Indonesia and others in the beginning of the twenty-first century. The involvement of local stakeholders in these projects was aimed to develop their capacity in the strategic planning of higher education. Through various projects, the World Bank and Asian Development Bank (ADB), as well as the OECD and UNESCO, have also supported capacity development in the quality assurance of higher education in collaboration with the International Network for Quality Assurance Agencies in Higher Education (INQAAHE), the worldwide network of quality assurance agencies, and the regional networks, such as the Asia-Pacific Quality Network (APQN). In the less developed countries, many argue that the governments and higher education institutions do not have enough capacity to operate on their own, and international collaboration is vital if resources are insufficient.

Student and academic exchange across borders is also a main activity of international collaboration. Through exchanging knowledge and skills, students and academics develop their capacity and increase their performance. Many joint research projects begin with the idea of resource sharing.

Medical scientists in industrialized countries collaborate with those in less developed (often tropical) countries in order to study unknown diseases. On the other hand, engineering departments in the industrial countries generally welcome hard-working students from developing countries. For example, the Japanese government and major universities have actively committed to set up and support the departments, schools, and even universities in the field of engineering and agriculture in Thailand, Kenya, Egypt, and others. Young faculty members of these countries have been accepted into Japanese partner universities and receive supervision for acquiring doctoral degrees from universities either in Japan or in their home countries.

In the fields of humanities and social sciences, provisions for international learning experiences and opportunities for mutual understanding are essential for future success. If working circumstances are globalized, one must be able to work with persons and groups with different cultural backgrounds. The Japanese government recently announced a policy vision to foster "global human resources" who can work and take leadership roles in multicultural settings. The governmentally supported project "Revitalizing Japan" was started in 2011 for supporting the launch of mutual student exchange with China and Korea, and ASEAN, adding the USA to these countries, is a new trial to send students of Japanese universities to Asian neighboring countries for fostering their international competence.

5.3.3   Funding and Rationales for International Collaboration in Higher Education

Funding and rationales for international collaboration are also a major issue, especially where there are severe financial constraints in the public and private sectors. The funding of international cooperation in higher education is provided by grants and loans. The rationale for grants or donations varies from one country or institution to another.

Firstly, from a diplomatic point of view, many countries provide public funding for international collaboration in higher education in order to strengthen soft power. Private enterprises also support international collaboration in higher education as part of their philanthropic activities. A more traditional approach might be collaboration for evangelistic purposes or enlightenment. Religious organizations have been active players throughout the history of universities and higher education institutions. The oldest universities in the Americas and, to some degree, in Asia have Christian origins, and some were established through collaboration between religious people across borders or under colonization. Other religious groups such as Muslims and Buddhists have also initiated similar efforts, particularly in emerging economies.

Secondly, diplomacy and peace-building on a larger scale have provided incentives for international collaboration in higher education. The ERASMUS

Programme (EuRopean Community Action Scheme for the Mobility of University Students) in Europe that has encouraged European-wide student exchange study abroad aims to establish peaceful relationships across the region. Many government scholarship programs for international students aim to foster the development of future leaders under the positive relationship with donor countries and institutions.

Thirdly, expansion of the international market for the home industry is also an important incentive for emerging and established countries. It is frequently observed that the donated equipment and facilities of higher education through international collaboration functions as a showcase of the industrial products of the donor country. At the same time, a non-English-speaking country such as Japan needs human resources which can understand the culture and working customs embedded in Japanese industrial states. Here, a collaboration program supported by public grants can be justified to the taxpayers as an opportunity to support the international operation of the industries of donor countries.

On the other hand, loan schemes rely more on the ownership and autonomous decision of the borrowing countries. Collaboration schemes in general are selected cautiously by the borrowing country from the viewpoint of a contribution towards, typically, its socioeconomic development. Especially for the countries that are about economic takeoff and high private demand for education, the options to increase their national debt through loan projects in the educational sector appear less attractive.

In many cases, finally, the cofunding of international collaboration is more widely seen, even, for example, middle-income countries with developed countries. There, cooperation is implemented in an equal partnership for mutual benefits.

5.4 Adding International Dimensions into Twentieth Century Frameworks

What can we learn from the ideas and practices of international collaboration and partnerships? Although faced with the emergence of international dimensions, the author will argue that the two frameworks of the twentieth century have not yet been challenged at their core.

5.4.1 Challenges to Trow's Elite–Mass–Universal Model

By utilizing Trow's "elite–mass–universal" model, we may be able to add an additional argument for internationalization. There are two routes for discussion. The first is the expansion of cross-border mobility among students and academics beyond the "elite" stage. In 2010, the number of students studying outside of their home countries was 4.1 million (OECD 2012), almost equal to the entire student

population of the Japanese higher and post-secondary education. International students and even academics are no longer the "elite" of both the sending society and the host society. This tendency is closely linked with the realization of mass and universal higher education in the respective countries. However, it is still too early to propose a consistent discussion regarding the emergence of "mass" or "universal" internationalization of higher education.

The second application of Trow's idea is the breakdown of the methods of internationalization among different types of higher education. Trow points out the increase of diversity in mass and universal higher education systems. Namely, internationalization appears differently to elite-, mass-, and universal-type higher education institutions. For the academics and students of elite universities, an international dimension is accessible as an indispensable part of the learning and studying experience. For elite universities, all public and private stakeholders—such as national and local governments, international organizations, nongovernmental organizations, private enterprises, and even other universities—support their international collaboration and partnerships. As Marginson and van der Wende (2009) point out, higher education is positional goods, and people are willing to invest and support top institutions. In many cases, elite universities themselves have affluent resources that might also be utilized for their international activities. At the same time, these elite universities in the twenty-first century are engaged in a fierce competition for international recognition for their world-class excellence. In most academic fields, and in any fields of work for elite university graduates, international prestige is an indispensable possession.

On the other hand, among mass-oriented universities and higher education institutions, the necessity of internationalization is not always recognized as self-evident. Utilizing the case of Japan, Kudo and Hashimoto (2011) point out the existence of a large number of non-international universities. If those institutions and their academics and students can seize a secure domestic market, it is possible for them to survive without international contacts. Needless to say, this does not apply to some countries such as Singapore, where the whole city state and its population are required to study and work actively in order to sustain the state as a knowledge hub. Compared with elite institutions, mass higher education institutions have limited opportunities and resources available for international collaboration and partnership. Thus, the quality and quantity of the international experience in their academic and learning activities is less than those in elite institutions.

However, some mass-oriented universities and higher education institutions may find a specifically "international" niche market. Outside of elite university groups, many Asia-Pacific countries have international or transnational higher education institutions specifically targeting international values. This type of niche-oriented internationalization is also seen among existing elite comprehensive universities. For most established comprehensive universities, it is not easy to transform all institutions into international ones. As a result, the establishment of small, internationalized education and research programs is widely observed. However,

it is not unusual for those international programs and universities to have less prestigious status than the existing programs and universities.

Lastly, among the universal-oriented institutions, we may see some highly international institutions. The existence of universal higher education is still limited in industrialized economies such as South Korea, the USA, Japan, and Taiwan. Especially in Korea and Japan, the saturation and oversupply of the domestic higher education market is evident in the decrease of youth in the population. On the other hand, the international student market continues to develop through the involvement of nonelite students from neighboring countries, especially China. In the case of Japan, many international students learn at language schools outside of university.

At the same time, China is becoming one of the largest receiving countries of international students if we include students who study mainly the Chinese language and culture outside of the university system. The Philippines is also becoming a receiving country for international students in language schools and undergraduate programs. Students from Korea, for example, utilize these programs as inexpensive opportunities for learning the English language. Japanese nonelite students, in general, are not well prepared for studying in English-speaking countries. In recent years, these students have begun to enroll in US community colleges, which provide inexpensive and accessible learning opportunities, and then transfer to the undergraduate programs of less selective state universities.

5.4.2   Challenges to Clark's Coordination Model

Clark's triangle model (i.e., the analysis of the nature of academic systems as a coordination among three main actors: states, academics, and market) has been one of the key models of higher education research in the latter half of the twentieth century. This model basically explains a coordination within one country. Therefore, the emergence of international dimensions in higher education requires further reflection on this model. The "glo-na-cal agency heuristic" proposed by Marginson and Rhoades (2002) provides a breakthrough on the possible change of the relationship between a nation state, academics/universities, and students/markets. At least at the level of policy discussion or propaganda, many advocate the necessity that any stakeholders of higher education in one country should unite in order to adapt themselves to a globalized world. In many countries, higher education is now recognized as a major knowledge industry in both education and research, which should be protected by the government as it faces competition in a global market.

Yonezawa (2011) argued that Japanese responsiveness to the internationalization among the three players is different, and that the "glo-na-cal" agency has not yet been realized. After that, facing the pressure of globalization, the discussion about taking collective action among university, government, industry, and even students has become widely accepted under the theme of fostering next-generation "global human resources" which can work within the global economy.

Focusing on an argument at the system level, Marginson's (2011) recent work on the comparison of three higher education systems—United States, Westminster (the UK, Australia, and New Zealand), and Post-Confucian (Singapore and East Asia)—reveals a new pattern in the state's role in higher education as follows:

- US: Frames hierarchical market and steps back. Autonomous university leaders.
- Westminster: Supervises market competition, shapes outcomes indirectly. Managed autonomy.
- Post-Confucian: Supervises, expands, and drives the sector. More managed autonomy.

This could be understood as a new relationship among the three actors. Namely, the US higher education system continues to be a market-led system, as it was in Clark's original work in the 1970s. The Westminster model has now become an example of a university-led system, while we can observe a shift in the representatives of "universities" from "professors" represented by Italy to "university managers" represented by the UK. Finally, the Post-Confucian model is categorized as a new state-led system replacing the USSR in Clark's original work.

5.4.3 Dynamisms of International Collaboration and Partnership in the Asia-Pacific Region

The dynamism of international collaboration and partnership should be examined further. In East Asia especially, we are observing an emerging discussion of developing a regional arena in higher education. This, itself, reflects a structural change in this region, in terms of both socioeconomic power balance and academic reputation. In relation to socioeconomic robustness, we observe a rapid increase of leading economies in this region. This also reflects the increase of world-class universities in East Asia and Asia-Pacific.

Reflecting on these structural changes, the initiatives for international collaboration and partnerships nowadays are taken by wider varieties of countries as multilateral relationships in this region (Yonezawa and Meerman 2012). For example, the ASEAN University Network, a top university consortium among ASEAN countries, is now providing scholarships for international student exchange through a partnership with Japan, China, Korea, and the EU, adding to their own ASEAN scholarships. Japan, Korea, and China have also started a project to promote student exchanges in 2011 under the title of CAMPUS Asia. Australia, the USA, the UK, and other European countries are actively involved in the provision of transnational education and student exchange programs with East Asia and ASEAN countries. Malaysia initiates a strong partnership with Islamic higher education systems, while Russia is strengthening international partnerships in higher education mainly with transitional countries.

The initiators of these programs vary: sometimes it is the government, sometimes the universities, or even the market forces or students' demands. The desired

directions by these three actors are not necessarily the same. At the same time, the students and the programs offered are not only for the elite, and the quality and direction are highly diversified.

For example, CAMPUS Asia was initiated by political leaders who wished to strengthen the relationships between Korea, Japan, and China in 2010. However, the diplomatic relations between those three countries changes frequently, and Japan, for example, had already expanded such government-led partnership projects with the USA and ASEAN. Universities and students also seek and support such collaboration and partnership based on their own preference.

5.5   Conclusion

As this analysis shows, there is a highly complex context to internationalization, international collaboration, and partnerships in higher education. These concepts and practices are not always limited to the public sphere. Therefore, we should deal with these topics as a highly complex interaction among different actors, both domestically and internationally.

The frameworks of the twentieth century are still valid in principle. In other words, the nature of higher education systems in the twenty-first century should be understood in terms of their historical context. At the same time, the international dimensions of higher education challenge the nature of higher education systems across the world. Through analysis of the ideas and practices of international collaboration and partnership, we can clarify the mechanisms and directions of these changes.

An unsolved issue in this article is the encounter of different "ideas of university." The emergence and increased importance of international dimensions leads to the overlap of higher education systems based on different ideas. For example, liberal arts education in the USA is now expanding its market to attract newly emerged middle-class families outside of the USA, especially in East Asia. However, it remains unclear as to what degree those new customers share the common ideal of "liberal arts" as a training for fostering "free thinkers."

We need to continue our efforts to seek an effective framework for understanding the nature of higher education in the twenty-first century. A further examination of the ideas and practices of international collaboration and partnerships is, therefore, needed.

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Part II
Teaching, Research, and Service Functions at the Crossroads

Chapter 6
The Scholarship of Teaching, Research, and Service

Jung Cheol Shin

6.1 Introduction

Until the emergence of the modern university in the early nineteenth century, the university used to be a teaching institution. In 1810, when Berlin University started to give more attention to the research function, it became a core part of the university. The service function was part of the university, including in the early modern university, because the Berlin University was established as a national institution. However, the idea of service was not well developed until the U.S. Federal Government began to grant federal property to states to support state universities. With the federal support, US land-grant universities have been actively involved in service functions, including community services. In contrast with the USA, community service was not well regarded in Europe. For example, all universities are national in France, and all universities are equally research focused in Germany.

These three functions were relatively well coordinated until recently. However, with the rapid growth of the research function after World War II, the economic boom of the 1950s and 1960s, the ICT industry in the 1980s and 1990s, and the knowledge economy after that, the research function, especially applied research and development research, has been growing rapidly. Most historically older universities are research focused and give relatively less weight to teaching. Their professors prefer to spend a minimum amount of time on teaching students and more time on research. Also, these universities have tended to evaluate professors mainly on their research productivity. At the same time, professors began to

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recognize applied and development research as their main service function. The result is that the function of the university is aligned to research as the core function, with the rest as supplementary.

Earnest Boyer, who recognized the problems of unbalanced scholarships, wrote an insightful argument in his book *Scholarship Reconsidered: Priorities of the Professoriate* (1990), warning of the danger of a too strong research orientation and proposing a balanced approach to scholarship. In his book, he uses the word "scholarship" instead of "functions," and he includes teaching and service in the category of "scholarship," so that all these functions look more like scholastic function. Boyer proposed four types of scholarship: discovery, application, teaching, and synthesis. Although it is not clear what "application" means in his book, it could be interpreted as the application of knowledge to solve social or industrial problems, so that professors are contributing to society. This is Boyer's conception of service. Since Boyer's book, many universities began to change their faculty evaluation criteria, with good results (O'Meara and Rice 2005). US academics had moved more toward teaching by 2007 compared with the situation in 1992, according to the Changing Academic Profession (CAP) data.

Unfortunately, opposite trends have been reported in many other countries. According to the CAP data from the ten countries that participated in the 1992 and 2007 surveys, only the USA moved more toward teaching, while six countries moved more toward research (Australia, the UK, Korea, Brazil, Mexico, and Hong Kong SAR) and three countries showed modest changes (Germany, Japan, and the Netherlands). This strong research orientation is related to the knowledge economy and globalization, as proposed in our conceptual framework in Chap. 1. Policymakers began to perceive the world-class university as the sign of national competitiveness in the knowledge economy. At the same time, universities are actively engaged in the world-class university competition with the release of global ranking reports.

The desire to be recognized as a world-class university in the global rankings has contributed to an increase in institutional performance that is measured by research productivity, internationalization, and reputation. However, the world-class university and global rankings lead universities to emphasize the research function because research is the core indicator of global rankings and the core measure of a world-class university. This is not only between research universities: teaching-focused universities are joining the "rat race" too. As a result, teaching and service are disregarded and research has become the dominant function of the contemporary university. This chapter discusses how the three dimensions of scholarship are perceived and conducted by academics, and how these functions reinforce each other for the betterment of university and society. This discussion provides background information for the following three chapters on the teaching, research, and service functions.

6.2 Different Dimensions of Scholarships

This section focuses on how the teaching, research, and service functions have developed as the modern university has developed, shows how academics' preferences for teaching and research differ, and, finally, discusses how they allocate their time to different activities.

6.2.1 Teaching, Research, and Service

Higher education scholars and administrators define teaching, research, and service as the main functions of the university. Sometimes, service is categorized as on-campus service or off-campus service, where on-campus service means "administration" for the university. However, university administration is not service for society, which is how we view service in this book. We consider teaching, research, and off-campus service as the three functions of a modern university. The following sections detail how these three functions have developed historically.

Teaching. Teaching is a major function of higher learning institutions. However, teaching has been supplanted by research since the Berlin University adopted a research-driven teaching model. As discussed in Chap. 2, there was not much knowledge to teach elite students at the time and the professors' major function was to discover new knowledge to teach. Even today, professors focus on knowledge production, as they have done since the early nineteenth century.

The teaching function is of relatively less interest to professors and this has become a serious problem in the post-massification era, where students' preparation for employment is lower than that of the elite university. Higher education scholars are shifting the focus from teaching to learning, with the result that student learning achievement has become a hot issue among policymakers, and the OECD launched an international project in 2011 to measure student learning achievement (Assessment of Higher Education Learning Outcomes, AHELO). Just as the OECD Programme for International Student Assessment (PISA) had strong social impact on educational reform in many countries, especially in Europe, the assessment of university student achievement will undoubtedly lead to a major impact on university education.

The modern university does not concentrate on teaching because professors have been influenced by the research-driven teaching model. However, contemporary research is not educationally contextualized. In the nineteenth century, most academic research was pure and basic research, so that the research could be easily transmitted as classroom content. Most contemporary research is unlikely to find its way into classrooms. Many professors are researching narrow disciplinary topics, focused on analytical method-related issues rather than the social relevance of research, especially in the social sciences, pursuing commercially oriented research etc.

Because of these changes in research, the research-driven teaching model does not make as much sense as it did in the nineteenth century.

Research. Research became one of major functions in the nineteenth century when the modern university emerged, and the role and relative weight of research has continued to increase. When the modern university emerged, most research was "pure" academic research, but it has evolved from pure to applied, and from applied to development research. The evolution of "research" is closely related to social demands on the university. In the USA in the nineteenth century, for example, federal and state governments encouraged universities to conduct research for agricultural development.

In his book *Science, The Endless Frontier*, Vannevar Bush (1945) presented an approach to aligning different research functions by different research institutions. He proposed that the university be mainly in charge of pure research, industry responsible for applied research, and the government for development research. This division of labor between the three entities was adhered to in the early years of the National Science Foundation in the USA, but the borders between pure, applied, and development research are becoming much less clear (Slaughter and Rhoades 2004). Most major theories had been proposed by the early or mid-twentieth century, and the majority of follow-up research is the application of these theories in various discipline areas.

On the other hand, social and industrial problems are becoming more complicated and the demands for better technology and better quality of life are growing exponentially. Academics are expected, through their research, to address these social issues. Consequently, the research focus in the USA has moved from pure to applied and development research since the mid-twentieth century. The situation is becoming more complex because universities perceive research as a means to generate resources rather than as the source of education (research-driven teaching), particularly when budgets are under threat. The Bayh–Dole Act of 1980 allows universities and professors in the USA to use patents produced through federally funded projects. Allowing the private use of research outputs was a turning point for academics to become aggressively involved in commercial applied and development research (Slaughter and Rhoades 2004). A significant amount of academic research is now closely related to commercialization, and this change made a huge impact on other countries.

Service. Service functions are more complex than teaching and research because any function that relates to university as public goods could be categorized as "service." A university contributes to society through educating each generation, through socially meaningful research, and through direct community involvement. This means that the teaching and research functions are also related to the service function. In addition, participating in university administration is considered as service for professors because administration is not their original area of expertise. Even serving their field through serving on a journal editorial or review board can be considered academic service because such work is not their main function.

The service function can be approached from two points of view. One is to focus on service as a "university function in society" and the second is to focus on service

as an aspect of "faculty evaluation." The complexity of defining service functions was caused by faculty evaluation, which focuses mainly on research and teaching. Because of the importance of evaluation, professors want to count their "other activities" as an aspect of their academic record under the broader and ambiguous term "service." However, when talking about service in relation to society, on-campus service is not of interest and, in this chapter, the term "service" is related to off-campus activities.

Another point to consider is that service activities which contribute to society through teaching and research could be considered as teaching or research activities, even though these activities are socially meaningful and might be considered service activities in broader terms. All university functions have a relationship to society because a university is a national institution and is public goods. On the basis of this, teaching and research are, therefore, socially related activities and could be considered as social service. However, in discussing the three functions of the university, we would do better conceptually to differentiate between them. This is the terms that the CAP survey is based upon when it asks academics about their workload in terms of their teaching, research, service, and administration. The service function includes community service, participation in community activities, and non-paid consulting service. It is less clear as to whether lecturing in the community and participating in professional activities fit the categorization. In this chapter, a narrow definition may help readers because, by using the CAP data, we compare how academic activities differ across countries. So, we use the definition of service that the CAP survey is based on.

6.2.2 Preference and Workloads Between Scholarships

Academics have different preferences for teaching, research, and service. Among these three, higher education researchers have paid attention to teaching and research because both are two major aspects of academic life and, also, are potentially in conflict in terms of their time demands. A professor who spends more time on research has less time for teaching. In the academic world, some professors prefer teaching, while others prefer research. The CAP data include a survey item that measures personal preference for teaching or research.

According to the CAP data, academics' preference moved toward research between 1992 and 2008 among the ten countries that participated in the 1992 and 2007 surveys. The preference for research is the highest among the countries in the semi-core countries, followed by the core and periphery countries (Cummings and Shin 2013). Among the 19 countries that participated in the 2007 survey, countries in Europe and the two East Asian countries (Japan and Korea) reported a relatively high research orientation, but it was lower in Latin American countries and the USA, as shown in Fig. 6.1. The third and fourth bars represent the level of research orientation. Three countries (the UK, Australia, and Germany) reported a high research orientation (indicated by the fourth bar).
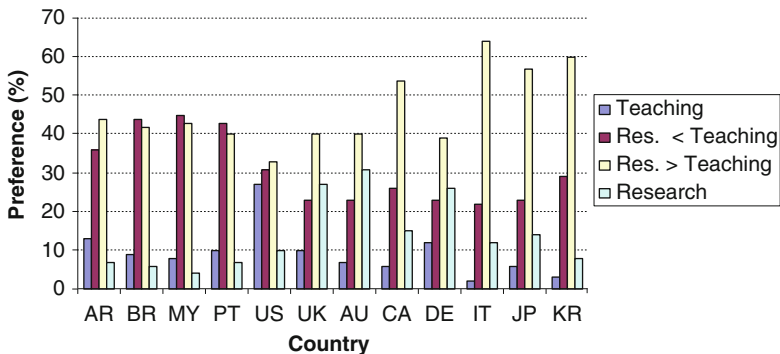
Fig. 6.1 Academic preference between teaching and research [Data source: The Changing Academic Profession (CAP). Note: Argentina (AR), Brazil (BR), Malaysia (MY), Portugal (PT), Australia (AU), Canada (CA), Germany (DE), Italy (IT), Japan (JP), and Korea (KR)]

The personal preference is affected by many factors, such as the required class hours, their evaluation, the reward systems, as well as their internal preference. Most universities set a minimum required number of teaching hours and, also, some higher education systems and/or universities require a minimum number of publications for promotion and tenure. How academics weight their academic work should be understood in terms of how they assign their workload with regard to their teaching, research, and service activities.

There are interesting patterns between the works done by academics in session versus out of session. They spend most of their time on research during their out of session, but distribute their time relatively equally on teaching and research during their in session. Academics in the advanced systems spend most of their time on research in their vacation time, but those in developing systems (e.g., Portugal, Brazil, and Malaysia) spend a relatively less amount of time on research. These facts support the hypothesis that academics prefer research to teaching and their academic activities also reflect their preference during vacation, but their activities are institutionally aligned to conduct both teaching and research during in session. By comparison, relatively little time is spent on service activity and remains much the same whether in session or out of session (Fig. 6.2).

6.3 Dimensions of Scholarship: Mutually Beneficial or Conflicting?

An assumption of the modern university is that different dimensions of scholarship reinforce the other dimensions. In the nineteenth century, professors who knew more clearly taught better than those with less knowledge. However, this may not apply in the twenty-first century because we are living in a time of massive increases of knowledge. The issue isn't how much we know, but how to teach
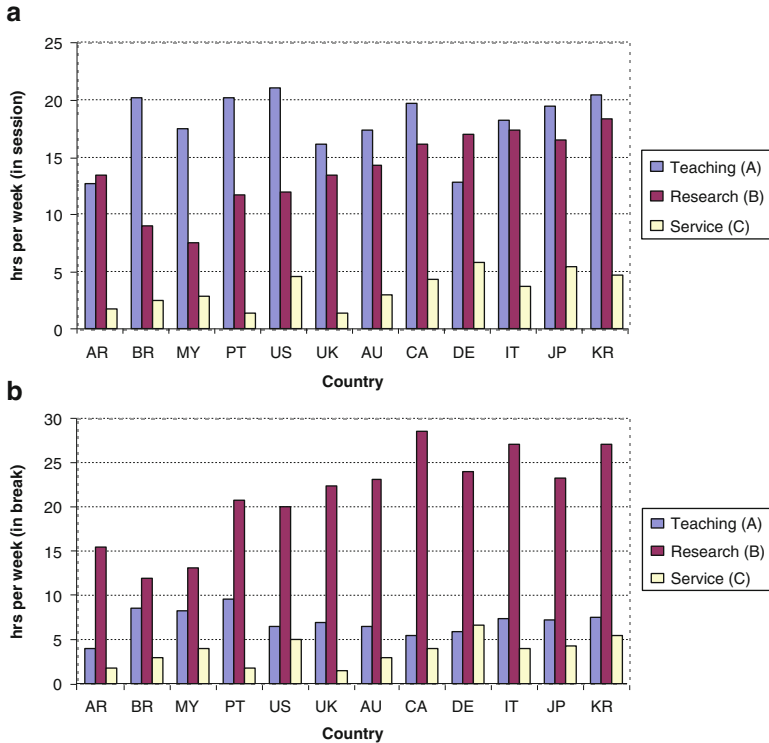
a

b

Fig. 6.2 Academic workloads [Data source: The Changing Academic Profession (CAP). Note: Argentina (AR), Brazil (BR), Malaysia (MY), Portugal (PT), Australia (AU), Canada (CA), Germany (DE), Italy (IT), Japan (JP), and Korea (KR)]

what we know. Recent empirical studies found that teaching and research are different worlds (e.g., Marsh and Hattie 2002; Shin 2011). Although there are disagreements about this finding (e.g., Horta et al. 2012), one clear fact is that the mutual reinforcement between scholarships is not quite clear as academics believed in the nineteenth century.

In examining the nexus between the teaching and research in a Korean university, Shin (2011) found that research has a negative association with teaching when the research productivity is measured by international journal publications in the non-English-speaking country. These findings, more than likely, have implications for other countries that emphasize international journal publications as a way to enhance their global ranking. Nevertheless, academics continue to believe that their research forms the basis of their teaching and even their service is rationalized by arguing that their service activities are the basis of their teaching. If these activities are mutually reinforcing and benefitting each other, the strong emphasis on research to enhance global rankings does not cause a problem, as strong research is the basis
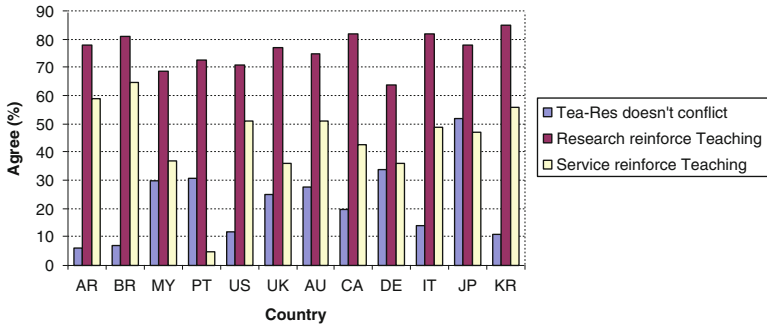
Fig. 6.3 Nexus between teaching, research, and service [Data source: The Changing Academic Profession (CAP). Note: Argentina (AR), Brazil (BR), Malaysia (MY), Portugal (PT), Australia (AU), Canada (CA), Germany (DE), Italy (IT), Japan (JP), and Korea (KR)]

of their quality of teaching. The CAP data provide academics' perceptions on the relationships between teaching and the other two activities (research and service).

As shown in Fig. 6.3, a majority of academics agreed that research reinforces their teaching. They believe that their research provides the theoretical basis of their classroom teaching. Without research, academics may not be quite as confident in their classroom teaching, especially when they teach talented students (as was the case in the elite higher education stage). Their students often raise unexpected questions. Without research experience related to the topic, professors may find teaching difficult. Also, academics are motivated when they teach topic areas that they have researched. On the other hand, a smaller proportion of academics agreed that their service activities reinforce their teaching. This finding also reflects that no many academics perceive service as another form of academic scholarship.

The question of reinforcement between teaching, research, and service is different from the question of whether these different dimensions are in conflict with each other. In other words, although these three dimensions mutually reinforce, they can conflict with each other if one dimension is overemphasized. For example, if a university emphasizes research productivity, academics may reduce their time on teaching and put more time into research. In this case, emphasizing research disrupts teaching activity, although research reinforces teaching. This might be happening in the higher education systems where government policy is encouraging the rapid growth of research productivity. Interestingly enough, academics in most countries except Japan perceive that teaching and research are in conflict with each other (readers are reminded that the bar chart is minus coded in Fig. 6.3).

As argued, if one dimension of scholarship conflicts with other types of scholarship, then emphasizing one dimension damages the higher education system in general. This was the starting point for part II of this book. The CAP data support the proposition in some countries, especially those with rapidly growing research productivity. The following section focuses on what we know and what we do not know in regard to academic research, so that the next three chapters can concentrate on these topics.

6.4 Conclusion: What Don't We Know?

Academic scholarship is the core function of the university and also of the professors. However, as the controversies on the nexus between teaching and research show, academic research on the topic is in its early stages. This section overviews what we know and what we don't know about academic scholarship.

Academic research on teaching has been focused on instructional methods, i.e., which methods are better for student achievement, curriculum development, etc. There are many books and journal articles in the literature, including some with "teaching" in the journal name. However, almost no research has been conducted on the scholarship of teaching, i.e., what the term "teaching" means to professors, and how their research is used in the classroom. In Chap. 7, Shin presents his rationale for transforming the university to a teaching institution by addressing the topic from the perspective of human development and knowledge explosion, and through changes in undergraduate education.

Academic research on research has been conducted extensively. Much of it has focused on the factors that affect research productivity. In the 1990s, a group of scholars (e.g., Etzkowitz and Leydesdorff 1997) began to pay attention to the relationship between university, industry, and government. This triple-helix research has become more popular recently. However, academic research does not pay much attention to the social meaning of research. What does research mean to society? Further, what role does research play in a rapidly growing research hub like China, Korea, Taiwan, etc. In Chap. 8, Professor Simon Marginson focuses on what the research means and he proposes six dimensions of university research.

Service is an area in higher education research that has not been explored. Professors tend to rationalize their service activities in various ways, but, still, the definition of service function is controversial to higher education researchers. What is service? What does a service activity mean to academics? These dimensions are not easy to answer. Jenny Lee and her colleagues address these complicated issues in Chap. 9 through a comprehensive literature review and through interviews with professors.

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Chapter 7
University Teaching: Redesigning the University as an Institution of Teaching

Jung Cheol Shin

7.1 Introduction

Higher learning institutions have a long tradition as teaching institutions. The university as a teaching institution developed further in massified higher education in the USA with the standardization of courses, credit hours, and grading systems (Trow 2005). However, the university as a teaching institution has been diminishing in post-massified higher education because of the strong research orientation among academics. The trend can be observed in many higher education systems in the other parts of the globe, especially in Asia, where the pace of higher education growth is rapid (Shin and Kehm 2013). In East Asia, research is regarded as a sign of "scholarship" and the "world-class" status of a university. This trend is also seen in European countries that have begun to place heavy emphasis on research because of the influence of global ranking systems (e.g., Kehm 2013).

Most global rankings only measure selected outcomes, such as research productivity and international reputation, while disregarding the quality of teaching as argued by Shin (2011a). However, some domestic rankings, such as the *US News* rankings, place considerably more emphasis on teaching quality than on research productivity (for details, see Shin 2011a). Obtaining a high ranking without considering teaching indicators quite possibly results in different outcomes, meaning that universities with high research productivity are actually performing less well in their teaching. An empirical study conducted by Ramsden (1999) found that the top ranked Australian research universities attracted talented students, but offered them poorer teaching.

The US universities have been able to emphasize teaching without losing their status as leading universities, but emerging countries tend to lose the balance between teaching and research (Cummings and Shin 2013). Such a strong research

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orientation as that seen in these countries does not always lift universities to world-class status, although some Asian countries are rapidly succeeding in achieving global ranking status through this strategy (Shin 2013). This chapter discusses what teaching means in post-massified higher education, and investigates how teaching is conducted by academics in different global settings. The chapter analyzes the Changing Academic Profession (CAP) data of 2007 to provide descriptive information on the qualifications of professors, their in-service training, their course content and teaching method, and their class sizes. Finally, this chapter discusses how to realign the university as a teaching institution.

7.2   Post-Massification and Teaching

This section discusses some reasons why the university should be a teaching institution in the post-massification era. In laying the groundwork for this discussion, this section covers student academic preparation levels, the phenomenon of knowledge explosion, professors as teachers, and, finally, the economic environment of higher education.

7.2.1   Teaching and Research in Post-Massification

As discussed in Chap. 2, the modern university has moved through various stages, referred to as elite, mass, and post-massification. During the elite stage, knowledge production was encouraged, but teaching was not. On the other hand, students tended to engage in self-learning because only selected and talented students enrolled at university. In the mass higher education stage, teaching and research are well balanced in the USA. Academics accumulate enough knowledge to teach, but, on the other hand, since the barriers to university have been lowered, students have become increasingly less well prepared for university study. In the mass stage, a university invests heavily in enhancing the quality of teaching, e.g., providing remedial services, establishing a center for teaching, and setting graduation exams.

In the 2000s, most advanced higher education systems entered into the post-massification stage, which means that most college-age students are enrolling in a form of higher education. Students are less academically prepared, but the amount of knowledge available to teach in the classroom is exploding. As a result, the gaps between student preparation and classroom content are becoming wider in many higher education systems. As Trigwell (2011) argues, a critical issue in teaching is the move from how to "teach" students to how to help them "learn." Scholars have begun to use the term "learning" rather than "teaching" (e.g., Trigwell et al. 1999), and student satisfaction has become a major indicator of institutional performance. In the USA, a survey of students' college experience (e.g., College Student Experiences Questionnaire) has been used to improve teaching and service, and

performance-based accountability systems use the student graduation rate as the main measure of institutional performance (Bogue and Hall 2003; Shin 2010). From this perspective, US higher education has been relatively well aligned to teaching in the mass and post-massification stages.

However, other countries which have rapidly entered into the mass and post-massification stages are not well prepared to achieve a healthy balance between teaching and research. These countries expanded their tertiary enrollment rate in a relatively short period of time, while simultaneously significantly increasing research productivity (Shin and Kehm 2013; Cummings and Shin 2013). Their teaching quality is questionable and student satisfaction is not given much regard in setting government policy and university administration. The problem is serious in European higher education because the pace of transformation into mass and post-massification is relatively slower compared to the USA and other regions of the world (Trow 2005). There are positive signs (e.g., Bologna Process) that these countries have begun to recognize the notion of the university as a teaching institution.

The CAP data show how academics perceive their students' academic preparation. In most countries, between 40 % and 50 % of professors agree that their students are not academically well prepared. Professors in the UK (68.2 %) report the highest level of satisfaction with their students' academic preparation, followed by Japan (63.3 %), while most other countries are between 50 % and 60 %.

7.2.2   Student Development Perspective

The current education system is based on the assumption that the psychological development of human beings does not differ from the past. However, the psychological development of students may not be fixed by students' age group, but, rather, by more relative terms considering appropriate comparison with other generations and socioeconomic environment. The physical ages corresponding to the psychological development differs according to their socio, cultural, and geographical distributions. In her comprehensive overview of life cycle development, Austrian (2008) pointed out that most human development theories and empirical studies are based on middle-class, urban, and white male adolescents. This fact implies that the psychological development of college students is affected by their changing family and social environments.

As a result of economic growth and the increase in women's participation in the job market, parents in many countries prefer to have only one or two children, and such changes in the family structure have affected students' sociopsychological development. Parents, especially in Asian society, tend to take care of their children both emotionally and financially until they become college students or even after they have married. The psychological development of human beings has been extended from the first shape to the second shape as shown in Fig. 7.1. The first
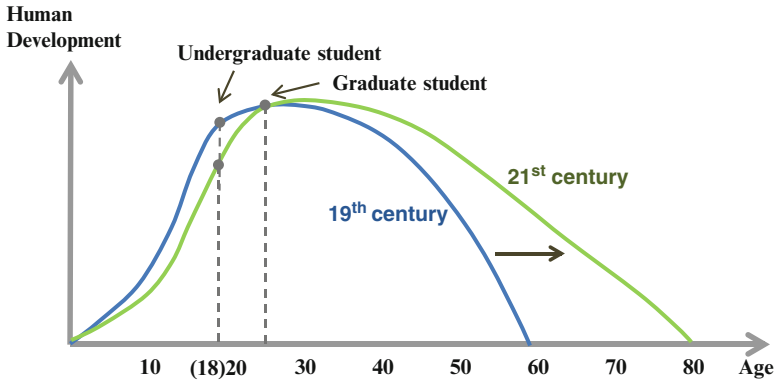
Fig. 7.1 Student development and university education by different life cycles

shape is based on a relatively short life cycle (i.e., age 60 years) and the second shape is close to the current life cycle (age over 80 years). College-age students could be considered as adult in the first shape, but they are in late childhood in the second shape. Considering their life cycle stage and their academic preparation, current college students remain in upper childhood.

The education systems, including the university, were based on perceptions held in the nineteenth century. In Europe, where the modern education systems emerged, the notion of "university" education is different from the upper secondary education. The social meaning of university education is for training social leaders, and university students are regarded differently from upper secondary students. University education according to this metaphor has been considered as the "adult" in our education system. College students are independent from parents and are free to make their own decisions about politics, marriage, and other personal matters. Students may or may not be adults in current society. According to Erikson (1956), college-age students experience an "identity crisis" because they are between childhood and adulthood—"they are no longer children and yet they are not adult" (recited from Wolff 1992, p. 17).

In addition, one can see that the social roles and society's expectation of the same age group differs between the nineteenth and twentieth centuries—the nineteenth-century college students were regarded as being more mature. Human development theory and changing student demographics has led to a discussion on the nature of college education. In the late 1960s, for example, Wolff (1992) argued that, in the early stages of massification, college education should be a bridge from childhood to adulthood and the course content should emphasize the liberal arts to successfully help young people grow into adults. Wolff continued that the liberal arts would ensure "every young person should grow to adulthood with a style of intellect and sensibility which he has freely chosen in order to express his own needs, thoughts, and feelings in an appropriate and spontaneous way" (p. 16).
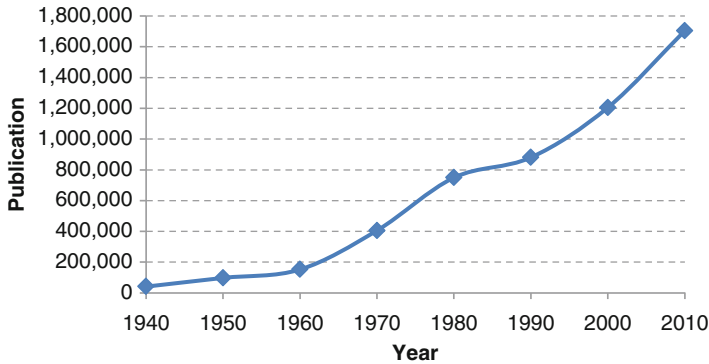
Fig. 7.2 Growth of knowledge production (1940–2010) [Data source: Web of Science. Note: Publication includes "All document types" in the Web of Science (Article, Letter, Review, etc.)]

7.2.3   Knowledge Explosion Perspective

Knowledge has grown exponentially during the past few decades and current society is referred to as the knowledge explosion era. This rapid expansion of knowledge means that students are expected to learn more than ever before. Knowledge is produced and disseminated in more active forms through academic journals, books, newspapers, and especially through various online portal websites which have generated knowledge participation by the public. Wikipedia is a good example of this. Figure 7.2 shows the growth of academic knowledge production in academic journals from 1940 to 2010 in the *Web of Science* database. Knowledge production increased four times from 1960 to 1980, six times to 2000, and eight times to 2010.

With the knowledge explosion, contemporary education systems are confronted with serious challenges. Secondary education was designed to prepare students for a successful life, but secondary education is no longer enough in most societies. Accordingly, the average number of years at school has increased, e.g., up to junior college, a 4-year college, or even graduate education. Shin and Harman (2009) argued that university education is considered "normal," as an upper secondary school education once was. Do students need all this knowledge? The answer to this question is related to the question as to what schools should teach. It could be discipline-based knowledge, or it could be how to search, organize, and use the knowledge. There have been many discussions in academic circles about "knowledge" in the knowledge society.

According to Gibbons and his colleagues (1994), schools should not attempt to teach all the knowledge produced, but, instead, teach students how to search, reorganize, and use the knowledge. Although discipline-based knowledge is a basic form of knowledge, relatively little weight is given to disciplinary knowledge in the knowledge society. Accordingly, academics in the field of education have begun to discuss what should be taught in the knowledge society. There are more

initiatives in the fields of "education." For example, a group of science education scholars discussed what should be taught in science education (e.g., Harding and Vining 1997). Their conclusion is along the same lines as that of Gibbons and his colleagues. Schools cannot teach all the knowledge that is produced by scientists. It is the same situation in other subject areas, including the social sciences and humanities.

A group of scholars (e.g., Hutchins 1953; Newman 1912) have argued that the college curriculum should focus on the liberal arts in this era of knowledge explosion. For example, Gray (2012) emphasized liberal arts education as the substance of higher education. Another group of scholars have paid attention to competence as one of the goals of education. The competency perspective has been developed to educate adult learners in the USA and in Europe. According to these scholars (e.g., Holmes and Hooper 2000; Illeris 2008), discipline-based knowledge is meaningful only if the knowledge contributes to developing student competency. Disciplinary subjects are regarded as a tool for training and developing student competency, rather than placing the goal of education as obtaining the subject knowledge itself. Even if how to develop true competency is still under discussion, the competency approach has won as a major indicator for many college students and employers.

Industries used to require industry-specific skills, but this has been changing because of the development of high-tech industry and the automation of production, which has simplified employees' manual work. Industries require only a small number of technicians or researchers with a high level of technology or research skills; on the other hand, these industries demand their employees to have a well-developed general competency. This change explains why, in many countries, including the UK and the USA, vocational training programs are not always successful (e.g., Wolf 2002). In this context, education systems that focus on job-specific skills for vocational training may not fit well in a high-tech-oriented knowledge society. Instead, the education systems that encourage broader knowledge and/or competency are more competitive in the knowledge society (OECD 2005). Employers have stronger preferences for applicants who have leadership qualities, communication skills, and a sense of humor, rather than job-specific skills and subject knowledge alone (e.g., Lim 2008; Heneman and Ledford 1998).

The knowledge explosion and related educational responses have led to a discussion on education systems, especially in relation to university education. If we agree with the concept of "network knowledge" by Gibbons and his colleagues, philosophers' views on college education, or the competency perspective, then it is clear that the discipline knowledge-based university education is losing its ground. In its place, this new approach encourages the redesign of college education.

7.2.4 Professorial Roles: Teaching or Research

Current university systems are based on the research-led teaching approach. The approach assumes that good researchers are good teachers, and teaching and

research mutually reinforce each other. When the modern university systems were established, the assumption was true because excellent researchers could be better teachers. However, in the knowledge explosion society, the critical issue in teaching is not whether a professor knows better knowledge or not; rather, how to select teaching content and how to reorganize the content in classroom contexts are more important than how much they know. Reflecting this change, universities began to emphasize curriculum development and institutional methods for better teaching. This is important in post-massification, where students are less prepared than their peers in elite stages. The changes lead to shifts of the professors' roles in the university. Although some highly reputed universities expect their professors to carry out cutting-edge research, many other universities expect their professors to deliver high-quality teaching.

In post-massification, the positive nexus between teaching and research is challenged by many empirical studies. These studies found that research has near-zero association with teaching (e.g., Marsh and Hattie 2002), and even a negative association is reported (e.g., Shin 2011b). When professors teach disciplinary knowledge, research-productive professors provide better teaching; on the other hand, teaching became independent from research when students are less prepared and knowledge is exploding in post-massification. When a university emphasizes research, professors tend to reduce their time for preparing course materials, reorganizing class contents, and student contact hours. As a result, research has a conflicting nexus with teaching in post-massification. Although many academics could become cautious on this finding, it makes sense in contemporary university education. According to these studies, research-driven teaching does not work in universities, especially at the undergraduate level.

Reflecting these practices, some countries have already changed their systems from research-driven teaching systems to the division of labor between teaching and research (Schimank and Winnes 2000). US higher education systems adopted the division of labor between universities through its mission classification systems, and also between undergraduate and graduate education. For example, research-productive professors teach graduate courses and conduct research, while teaching-efficient professors deliver more courses for undergraduate students. The division of labor enables US universities to be globally competitive in both teaching and research. Recently, the UK and the Netherlands adopted the division of labor between professors through funding schemes, evaluation schemes, and workload assignments between teaching-efficient professors and research-productive professors (Leisyte et al. 2009). This issue is becoming policy agenda in many other higher education systems, such as those in Korea.

In sum, students are lagging in psychological development during their life span, teaching contents weigh more on competency than disciplinary knowledge, and research-productive professors no longer provide high-quality teaching. These phenomena request that old university systems be fundamentally reformed because they have lost their logical and empirical grounds following post-massification. The reform should be fundamental and accompany structural changes. In addition, the reforms are not limited to university education only; rather, the changes are closely related to education systems in general.

7.2.5 Economic Crisis, Public Funding, and University Teaching

As well as the three logics to reform university education, the fundamental changes are supported by the economic situation in many countries. Many countries started cutting their budgets in recent economic crises and began to charge or increase student tuition fees (Johnstone and Marcucci 2010). When a university applies a research-driven teaching model, especially for undergraduate education, it is accompanied by high costs because research is a very expensive activity. The unit cost for teaching in a research-focused university is much higher than that in a teaching-focused university (Altbach 2004; Middaugh et al. 2003). Nevertheless, many universities began to join the global competition for research to enhance their ranking status, along with the accompanying high costs.

Unfortunately, however, states do not have enough funding sources to support the increased costs (e.g., Ehrenberg 2002). With a growing aged population, expenditure on welfare and health are becoming a serious social problem in many countries. When the education budget is competing with social welfare and national defense, education, especially higher education, often does not have priority in the economic crisis. The situation may not improve in the short term either, because the current economic crisis is likely to become a regular event in the global economy. The economic cycle used to form over a longer term in the past, but we have been experiencing frequent economic crises over the last few years. Given this condition, public expenditure for higher education is not likely to expand.

On the other hand, states have been aggressively investing their resources in research and development (R&D). The R&D investments are remarkable in the countries with rapid economic growth, such as Korea, China, Taiwan, Singapore, and Japan. Policymakers tend to perceive R&D as the source of national competitiveness and economic growth. R&D investment has been a significant source of university revenues. R&D expenditure is the main source for providing assistantships for graduate students, constructing a new building and new labs, and hiring new faculty (e.g., Ehrenberg 2002).

However, undergraduate students receive little benefit from the R&D of their university. Professors have begun teaching fewer undergraduate courses and their availability to meet with undergraduate students is decreasing. Universities began to pay high salaries to hire research-productive professors, and most of them tend not to teach undergraduate courses. On the other hand, the increased R&D brings with it financial burden to a university because it does not pay for the operational budget in many countries. As a result, the increased R&D gives rise to increased student tuition fees. Within the budget structure, undergraduate students pay a similar share of the costs as graduate students to support R&D in their university.

In sum, public funding for higher education is declining in economic crises, but the costs of research and global competition are increasing. In addition, national policy to increase investment in R&D accompanies high financial burden for the university's operational budget. To complement financial shortage, universities

tend to adopt student tuition fees (e.g., European countries) or increase tuition fees (USA, UK, Japan, Korea, and many other countries) to pay for the increased expenditure. The increase of tuition fees is a sensitive policy issue in many countries. In this context, the division of education programs for each undergraduate and graduate course is recommended, so that the undergraduate programs focus more on education, while the graduate programs focus more on research.

7.3 University as an Institution of Teaching

7.3.1 University Teaching Across Systems

The following discussion briefly introduces the current university education systems in six selected countries—USA, UK, Australia, Germany, Japan, and Korea. The data for this discussion have been extracted from an international comparative study of the CAP. Although the CAP data do not directly measure education systems, academics' perceptions represent education systems to some extent. Other than the perceptual data, it is quite difficult to extract education practices in reality.

There are distinctive features across systems in their academic units, teaching content and focus, instructional methods, academics' preparation for teaching, contact with students, and preparations. Table 7.1 shows how these differ across systems. In general, the USA, the UK, and Australia are at one end of the continuum and Germany, Japan, and Korea are at the other. The differences between systems are quite similar to the typology developed by other higher education scholars—e.g., Clark (1983), Ben-David (1977), and Cummings (2003). The German system of higher education has been focused on research since the establishment of Berlin University in 1810. The German model was imported by the Japanese imperial universities in the late 1800s, and the Japanese model was implanted into Korean universities during the colonial period.

The German system, including the Japanese and Korean systems, emphasizes research and puts less focus on teaching. For example, these systems place more emphasis on discipline-based content and less on values and ethics in a general sense in their classroom discussion. Instructors rely heavily on lecturing and less on individualized teaching. Academics spend less time preparing their class teaching materials and they do not pay much attention to curriculum development. In addition, they do not frequently communicate with their students. Although there is not a complete alignment, Table 7.1 represents the general tendency of the German system and its brother systems in Japan and Korea. Because the systems emphasize research, a higher percentage of the academics in these systems hold Ph. D.'s and a lower proportion of them have had experiences in practical fields other than academic jobs (professor or researcher).

Table 7.1 Comparisons of university education for different countries

	USA	UK	Australia	Germany	Japan	Korea
Academic units	Flexible	Flexible	Flexible	Subdiscipline-based	Subdiscipline-based	Subdiscipline-based
Focus of content	Practical knowledge > 70 % Values and ethics > 70 %	Practical knowledge < 70 % Values and ethics > 70 %	Practical knowledge > 70 % Values and ethics >70 %	Practical knowledge > 70 % Values and ethics < 70 %	Practical knowledge < 70 % Values and ethics < 70 %	Practical knowledge > 70 % Values and ethics < 70 %
Preferred instructional method (over 70 %)	Lecturing Individualized	Lecturing Individualized	Lecturing Individualized	Lecturing	Lecturing Individualized	Lecturing
Class size	Less than 50 students	50–100 students	Over 100 students	50–100 students	50–100 students	Less than 50 students
Training course for teaching	Over 50 %	Less than 50 %	Over 50 %	Less than 50 %	Less than 50 %	Less than 50 %
Course preparation: participating in course material and curriculum development activities	Materials dev. > 70 % Curriculum dev. > 70 %	Materials > 70 % Curriculum dev. > 70 %	Materials > 70 % Curriculum dev. > 70 %	Materials > 70 % Curriculum dev. > 70 %	Materials < 70 % Curriculum dev. < 70 %	Materials > 70 % Curriculum dev. < 70 %
Interaction with students: out of class/electronic communication	Out of class > 70 % Electronic > 70 %	Out of class > 70 % Electronic > 70 %	Out of class > 70 % Electronic > 70 %	Out of class < 70 % Electronic < 70 %	Out of class > 70 % Electronic < 70 %	Out of class > 70 % Electronic < 70 %
Qualification of professors	Ph.D. > 70 % Practical exp. > 30 %	Ph.D. < 70 % Practical exp. > 30 %	Ph.D. < 70 % Practical exp. > 30 %	Ph.D. > 70 % Practical exp. < 30 %	Ph.D. > 70 % Practical exp. < 30 %	Ph.D. > 70 % Practical exp. < 30 %

Data source: The Changing Academic Profession (CAP)

Note: The values are the average percentages of academics that agree or strongly agree with the survey items

On the other hand, the US and UK systems, including Australia, share similarities. The US systems emphasize finding a balance between teaching and research, and teaching for undergraduate education and research for graduate education. They teach liberal arts and emphasize values and ethics in a general sense in their classroom. Professors use individualized teaching methods as well as lecturing, are well prepared for their classroom teaching, and communicate with their students out of the classroom. The academics in the US systems, including the UK and Australia, are more likely to have had experiences in fields other than academia and a smaller proportion of them hold Ph.D.'s compared to their peers in the German system.

7.3.2   University as a Teaching Institution

This section focuses on how to restructure the university as a social institution of teaching. A brief overview of the historical development of teaching and research shows how the university has developed its functions of teaching and research. This section proposes a way to restructure the university as a teaching institution by reforming university systems.

Two Layers: Undergraduate Education and Graduate Education

The university was considered as a place for higher learning and a university degree was considered to be the final degree for intellectuals (Clark 1983). University graduates used to be specialists in their discipline areas in European higher education. Although European countries have long had advanced degree programs, it is quite different from that of the USA. Advanced degree programs in Europe used to be based on seminars rather than coursework, which is the standard format of US universities. On the other hand, graduate education has been regarded as a place for professional training and to educate intellectuals in the USA.

Historically, undergraduate education was not considered a lower layer of graduate education in the USA (Ben-David 1977). Instead, graduate education was used as a means to establish the German research university model in the USA, where graduate education focused on research and training professionals and academic researchers. When the Johns Hopkins University was established in 1876, it started with graduate programs only, and, in that respect, it stood out from other US universities. Since the establishment of Johns Hopkins, many other universities have added the research function as a form of graduate education, and undergraduate education has gradually become a preparatory course to pursue graduate education (Ben-David 1977). The relationship was relatively natural in the USA, where undergraduate education was based on liberal arts and graduate education on discipline knowledge and professional training.

On the other hand, disciplinary education and professional training was completed at university level (diploma level) and liberal arts education at upper secondary education in Europe. The Abitur in Germany and the Baccalaureate in France are the final assessments to test student achievement in liberal arts (Cummings 2003). In Europe, the hierarchy between upper secondary and university education was clear, but the hierarchy between first university degree and advanced degree was somewhat different from the distinction between upper secondary and university education (diploma level). The linkages between "upper secondary," "university," and "advanced degree (PhD)" education is challenged by adopting the American notions of bachelor's (undergraduate), master's, and Ph.D. since the Bologna Process in 1999.

A university education used to consist of advanced disciplinary knowledge leading to professional jobs, and was considered the highest intellectual training available in European countries. It was available to a very limited number of upper secondary school graduates. However, in massified higher education, university education should be repositioned between upper secondary and advanced degree programs. The university education (currently, bachelor degree program) might cover liberal arts (at an advanced level) and disciplinary knowledge (at an introductory level). These realignments are important in the non-American higher education systems, where the mission differentiations between undergraduate and graduate education are not clear. In the non-American higher education systems, academics who are in charge of undergraduate education teach disciplinary knowledge to their undergraduate students. In these contexts, realigning the mission differentiation between undergraduate and graduate education is a critical task.

Undergraduate Education as a System of "Education"

The core discussion point for this section is the question of how to position undergraduate education (bachelor programs) within the whole education system. Undergraduate education lies between upper secondary and graduate education. In massified higher education such as in the USA, university education focuses on the liberal arts, which are not completed during upper secondary education. Although college students are in their major disciplines, many students major in more than one discipline and the disciplinary training focuses on introductory levels rather than on in-depth knowledge. This type of education is considered a period of exploration to prepare for professional training during the graduate programs, such as medical school, law school, and business school.

The US approach appears more aligned with the stages of student development in post-massified higher education. The US approach is also supported by how to learn and teach knowledge in the era of knowledge explosion. As has been discussed, it is not recommended that the university teach undergraduate students deeply on specific disciplinary knowledge, but, instead, focus on transferring ways for students to search and use knowledge proactively, and on building student competency. Massified higher education is not designed to train for professional jobs or to teach disciplinary knowledge to undergraduate students. US education

enables teaching-efficient professors to focus on undergraduate courses and research-productive professors to concentrate on graduate programs. The division of labor between teaching-efficient and research-productive professors enables US higher education to be competitive globally, even though US higher education is highly massified (e.g., Shin and Kehm 2013; Trow 2005).

The division of labor possibly lowers college costs and may provide an efficient education service. The approach is more cost-effective because professors teach more courses when their main job is defined as teaching and they are evaluated on their teaching quality (Shin 2011b). Academic units are more flexible in the USA than the discipline-based systems, so that colleges can organize courses depending on student demands and course characteristics. The costs for administration and instruction can be economized as well by saving the cost of conducting research, which is not necessarily required for undergraduate education. Although professors who mainly teach undergraduate courses conduct research, their research might be relevant to "education" in terms of its content or its implications.

Restructuring of Undergraduate Education

As discussed, the US systems as well as those in the UK and Australia are well placed to educate undergraduate students. In addition, these systems reflect their effectiveness in the global rankings too. On the other hand, the German systems are relatively less focused on undergraduate education (or first degree education) and are less well represented in global research competition. In terms of research, there is a serious language barrier for non-English-speaking countries and the bibliometric data overestimate the contributions of systems with strong empirical research traditions in certain countries, such as the USA, the UK, and Australia (e.g., van Raan et al. 2011). Low-quality teaching cannot be blamed on these factors however. The following implications are based on our discussions for restructuring undergraduate education.

First of all, undergraduate education might be organized separately from graduate education. I suggest that the curricula should be restructured and reorganized according to students' developmental stages and be taught by teaching-efficient professors. In the massified systems, undergraduate education should be more flexible in their academic units, and their curriculum should be based on the liberal arts and be taught at the introductory level of major areas, rather than detailed disciplinary knowledge. In addition, instructional methods should be more student-centered.

Second, undergraduate education might be considered as a part of normal education, and the logic underlying the funding of undergraduate education should be similar to that for upper secondary education. This would ensure steady financial security from public expenditure for undergraduate education without fluctuations during economic cycles. In addition, the class size for undergraduate education should be flexible, determined by class content, instructional method, student motivation, and so on. A flexible class size will enable universities to lower costs and decrease student tuition fees.

   Third, undergraduate courses should be taught by teaching-efficient professors who are talented teachers. Current systems, especially the German system and its brother systems, are mainly focused on hiring research-productive academics, but this policy does not benefit undergraduate students. I also recommend that university administrators develop different types of faculty evaluation systems (e.g., teaching-focused or research-focused) and encourage professors to choose one of the tracks, depending on their academic orientation. In addition, universities are recommended to place emphasis on field experience as a faculty hiring criterion.

7.4   Conclusion

In the modern university development in the USA, both teaching and research are well coordinated by the dual organizational format of undergraduate and graduate education. The combination of teaching and research may be the main reason why the US university has maintained its global status for so long. However, on the other hand, some other higher education systems are struggling with balancing teaching and research. The problem is even more serious in the developing higher education systems, e.g., in many Asian higher education systems, although these countries are rapidly growing in their tertiary enrollment and academic productivity. Nevertheless, these universities are actively involved in the global ranking competition, which leads to a strong research orientation. Considering the decoupling of teaching and research in the post-massification stage, the strong research orientation causes enormous problems for university "education," especially for undergraduate programs.

   As a way of combining both teaching and research in a university, this chapter discussed how to restructure the university by realigning undergraduate and graduate education. The chapter proposed to assign teaching-efficient professors to teach more undergraduate courses and charge lower tuition fees for the undergraduate students, so that the cost transfer from graduate to undergraduate students can be prevented. Further discussion is needed on how to situate undergraduate and graduate programs differently and a thorough understanding of the distinctive differences and characteristics of these two layers will be crucial in order to offer practical suggestions.

   In this regard, our future research will seek to understand the different characteristics of undergraduate and graduate students, e.g., their demographics, psychological development, and social relationships. Further, we need to understand the differences in the characteristics between academics, based on their preferences for teaching, research, or service. This empirical research will provide theoretical and practical grounds for redesigning undergraduate and graduate education differently, based on students' sociopsychological characteristics, as well as professors' preferences and their competencies.

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Chapter 8
University Research: The Social Contribution of University Research

Simon Marginson

8.1 Introduction: Research and the University

The university is a conglomerate organization that combines many roles and functions. Clark Kerr (2001) famously dubbed it the "multiversity," which immediately poses the question as to what holds the university together and what might be at its core. (Kerr's answer to the first question was "the university president." He was a university president, first at Berkeley and then of the University of California system. His answer to the second question, anticipating postmodernism, was "there is no core.") However, within the balance of functions that comprise the conglomerate, research seems to grow each time we look.

The argument of this paper is that university research has acquired six distinct social roles. We can identify six separate but cojoined sets of research-related practices. Each set of practices is associated with (often largely informal) regulatory activities. Each set of practices is also attached to differing normative discourses about research—discourses often misleading as guides to fact or action, but formative of research and university cultures. There are certain tensions between the different roles, but research is central to both the internal organizational sociology of the university and its external social relations. These social roles of research in universities, which will be considered in turn, are as follows:

1. Research as the function differentiating universities from other educational and social institutions.
2. Research as the function that signifies the culture of the modern university and unites the academic professions.
3. Research as the function that differentiates and rank orders the academic professions.

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4. The research function as a determinant and signifier of brand value in national and global university competition.
5. The research function as one key (in extreme cases, *the* key) to economic innovation and, hence, as a key to economic growth and competitiveness.
6. Research as the source of open-source knowledge and creativity.

All of these roles have long antecedents, but their respective importance—the character of the mix and balances between them—varies over time. It is sensitive to the larger political, economic, and social context in which higher education sits, and to which it contributes. This includes the balance between internal and external elements—the research role evolves on the basis of both internal evolution, for example, disciplinary specialization and organization, as noted by Clark (1996), and it also evolves, shifts, and changes on the basis of the external social shaping and requirements of higher education, such as the advance of global standardization and integration, changes in the nation state and in the policy expectations of and systems in relation to higher education.

An historical note Before these social roles of research are defined and discussed, it should be noted that, while the European university has always had multiple missions, in the 1,000-year history of European universities and the 3,000-year history of university-like institutions that takes in India, China, and the Muslim world, scientific research—though not scholarship—is a recent development.

Like the modern university as a whole, contemporary research functions date from the nineteenth century. In 1810 in Germany, Wilhelm von Humboldt (1970) made an argument for a new University of Berlin. He wanted to combine received wisdom with "objective scientific and scholarly knowledge," including scientific inquiry designed to push forward the frontiers of knowledge (p. 243). His "Idea of a University" was a teaching/research institution in which professors were free to teach and to inquire as they wished, students were mature self-motivated persons, and received authority could be questioned. "Science and scholarship do not consist of closed bodies of permanently settled truths," he stated (p. 244). "One unique feature of higher education institutions is that they conceive of science and scholarship as dealing with ultimately inexhaustible tasks: this means they are engaged in an unceasing process of inquiry" (p. 243). Knowledge was often central to the university before this. The difference now was that it was provisional, open to continuous criticism, change, and evolution.

There are questions about whether the implementation of these ideas in Germany was derived primarily from Humboldt. Ash (2006, p. 246) argues that some of the practices associated with the German research university arose prior to the University of Berlin and others later, and the generic "Humboldt model" as such was largely the creation of government-driven university modernization in Germany at the beginning of the twentieth century. Myths, of course, can be powerful, and in the twentieth century, the Humboldt model was mobilized to support the predominance of the professoriate in university affairs, the teaching–research nexus, and the status of basic or pure research, vis-à-vis applied research. Regardless of the antecedents of the model, it took some time for German ideas about the role of

research and critical inquiry to be diffused beyond Germany. There was resistance in Britain. J. H. Newman (1982), in *The Idea of a University*, argued that the university was a teaching-only institution, with no role in research. It was focused on knowledge, yes, but with "the diffusion and extension of knowledge rather than its advancement" (p. xxviii). Newman believed that most major intellectual discoveries emerged from outside the universities. He polemicized against the idea of a teaching and research nexus. "To discover and teach are distinct functions; they are also distinct gifts, and are not commonly found united in the same person," argued Newman.

The research university reached Britain and the rest of the world more directly from the USA than from Germany. Beginning with the graduate school model developed at The Johns Hopkins University, where nearly all the faculty had been German-trained (Fallon 2007) in the last quarter of the nineteenth century and early twentieth century, the research mission was installed in American institutions. In the US context, especially in the land-grant institutions, research—in contrast with the Humboldt model, there was something of a bias to the applied side—was often associated with the service mission and with economic development and innovation (Scott 2006). These associations with research have now become common to innovation systems in many countries. After World War II, Vannevar Bush developed the famous argument about basic research in science as the "seed corn" of useful discovery and technological advance. This resolved the tension between basic and applied research by advancing the notion of strategic basic research. Research was to be controlled autonomously by faculty, but there was an understanding that its ultimate rationale lay in innovations applied to human betterment and American national interest. The seed corn argument supported a great expansion of government-funded research, much of it sponsored by the federal defense department, or nuclear-related research funded by the energy department, or NASA research related to the space race, all driven by Cold War rivalry.

By the early 1960s, pure and applied research occupied a pivotal role in Clark Kerr's (2001) vision of the multiversity. Kerr noted that a small number of American universities dominated federal research funding. In 1960, federal research funding provided 15 % of university income, with 57 % going to the leading six institutions (pp. 40–41). Nevertheless, the research ethos had become more widely established in universities, and the research-related spirit of continuous criticism and development had become part of their organizational culture. "Knowledge," stated Clark Kerr, "has certainly never in history been so central to the conduct of an entire society" (p. 66). The American research university, he said, "has demonstrated how adaptive it can be to new opportunities for creativity; how responsive to money; how eagerly it can play a new and useful role; how fast it can change while pretending that nothing has happened at all..." (pp. 34–35). Kerr correctly predicted the transformation of worldwide higher education along the lines of the model of the American research university (p. 65). The last century has seen the diffusion of university science and the research university model throughout the world, but not quite everywhere. For example, the research role of leading universities in Russia is still problematic. Russia has not at all completed the

transition from the Soviet model of a zero-sum division between separate government research institutes and teaching-focused universities (Smolentseva 2007).

Much of the diffusion of the role of the university in research science is very recent, especially in East Asia. University research was initially dominated by the English-speaking countries, Western Europe, Russia, and then also Japan. There are now 48 nations or systems in which more than 1,000 science papers are published each year in recognized global journals, compared to 38 such nations or systems in 1995—an increase of 26.4 % in 14 years. Most such papers are from universities, though government research labs are important in some countries. Diffusion of the research role is not complete. In the majority of sovereign countries, the output of research science remains small or negligible. However, it continues to spread. The next zones of accelerated research performance may be Saudi Arabia and the Gulf States, which there have been marked recent investments in capacity. Iran has already seen a major jump in research output (NSB 2012).

8.2   Research as the Function Differentiating Universities from Other Educational and Social Institutions

In many (though not all) countries, research has become closely associated with the use of the title "university." The underlying logic is the creation of a bounded university field in Bourdieu's (1993) sense of field, or to be more strictly accurate in the terms of that argument, the creation of a pole or subfield within the larger field of higher education. The associated discourse is that of the research university. Social organizations such as universities depend on "identity-centering" boundary markers that differentiate themselves from all other social institutions. When those boundaries are blurred, the organization is in trouble (Considine 2006). Claims related to knowledge might be invoked to define universities, and sometimes are, but many knowledge-related functions take place outside universities and non-university knowledge-building is increasingly fostered in digital spaces (Sharrock 2007). Research is a surer marker of identity, and one that is more prestigious. Claims for the research role are claims both for inclusion within the prestigious part of the university field and for differentiation from teaching-focused institutions such as liberal arts colleges, vocational training institutes, and, in some nations, teaching-only universities.

The regulatory activities go to the ordering of the definition of "university" or "research university" on the basis of law or convention—in some countries, it is illegal to claim the title "university" without a recognized research role—and other moves defining the field of higher education and the character of research universities, such as classification and mission statements. University web pages are another informal regulatory practice. Web pages often promote academic drift by claiming a larger role in research than is warranted by the university's activity

and capacity. Nevertheless, this reinforces the association between the research mission and the external identity-building activities of universities.

That association is not watertight. The field boundaries of the university vary by country. While research in the form of published science has a standard global character, there is variation on the question of teaching-only universities. Further, universities are not the only social organizations that are defined in terms of the research mission. Government laboratories and institutes play a part in many nations, and are especially important in Russia (as previously noted), China, Korea, France, and Germany. Nevertheless, in all these cases, the government is now actively fostering the research mission within universities. The existence of government research institutes no longer diminishes the association between universities and research to the extent that it once did. In that sense, the comprehensive research university is near universal; a tendency reinforced by the facts that the research training function is largely centered on universities, as is both the editing of academic journals and the bulk of published science.

8.3 Research as the Function That Signifies the Culture of the Modern University and Unites the Academic Professions

This is the internal identity-building function of research, counterpart to its role in constituting the external field boundary. It has deep roots and is especially important in forming and demarcating the academic professions and the internal organizational cultures of universities. The underlying logics are research as universal labor and research as an output economy. The associated discourses are those of the teaching–research nexus, and academic freedom and creativity. These discourses play a major role in university life. The corresponding and equally important regulatory activities include doctoral training and the formal requirements of faculty in job performance, appointment, and promotion.

Government and institutional regulation associated with this function of research emphasize cross-field aggregated collections, such as publication counts, in which all fields are given the same nominal status, and there is no differentiation by the quality of journals. In performance management, the standard expectation is that all tenured or tenurable staff should be research-active, and all are respected as potential researchers, even if they are not currently research-active. The collegial and serendipitous culture underpinning this function of research is summed in Oakeshott's statement that research is "a conversation that does not need a chairman [sic], it has no predetermined course . . . and we do not judge its excellence by its conclusion" (Davis 2010, p. 50). Research is a common project of inquiry with no end and, thus, no essential applications or uses. Notions of a research mission universal to the institution are often invoked to support claims to university status and inclusion within the field (see the previous section on function 1). More

generally, the normalization of research as universal faculty activity signifies the completion of the transformation into the research university launched in the nineteenth century in Germany and the USA. As such, it is symbolically important (even while being unachievable!), signifying the full modernization of a national university system.

However, this notion of research, and also the notions of research in the discourse of the teaching–research nexus, tend to be shaded by the notion of scholarship. In this context, non-refereed conference papers might be held to constitute sufficient proof of research activity by faculty. Indeed, in no comprehensive university, including Harvard, do all full-time faculty hold current research grants. This comprehensive and egalitarian understanding of the research function differs from that fostered in excellence discourses and comparisons and management technologies that rank order on the basis of research quality (see the following two sections relating to functions 3 and 4). Social function 2 is closer in sympathy to the mass teaching mission, with its emphasis on universal inclusion, than are those functions of research that emphasize hierarchy, selectivity, and exclusion.

Nevertheless, in some national systems, there are signs of growing differentiation between the faculty role in undergraduate teaching and the research-focused work of the faculty at the graduate level or in the graduate school. This split was always inherent in the American model, though in the USA, it often became expressed more in differentiation between first degree colleges and research institutions, rather than within institutions. More widely, the need to lift research performance so as to push up the rankings is now fostering an increased emphasis on research-only and largely research-only faculty labor.

8.4   Research as the Function That Differentiates and Rank Orders the Academic Professions

This is the elitist and hierarchical function of research within universities, where research activity—more strictly defined than under function 2 as established publications and grant-based projects—is used for differentiating vertically between individuals and also between fields and academic units, and enabling fine-grained systems of performance management and certification. It is the other side of the universal, uniting, and egalitarian role of research among faculty, and, as noted, it has become much more important in the era of the new public management (NPM), which imagines research in terms of production economics. The underlying logic is research as a competitive status economy. The associated discourse is that of excellence. Regulatory activities include the technologies of research performance measurement, the competitive ranking of individual and unit performance within universities, and internal university systems of funding and appointment or promotion linked to status-creating research performance.

The logic of the elitist, exclusive, and highly managed research function 3 is radically in tension with comprehensive egalitarian and bottom-up function 2. In ordering the academic professions, the two functions are opposed at every turn. Yet, they also coexist, as necessary opposites in the ordering of faculty. As Readings (1996) pointed out, the vacuous meaninglessness of the term "excellence" enables it to function as the common denominator of research across fields—nominally preserving the inclusive and egalitarian character of research function 2, while valorizing also the function 3 technologies of differentiation in terms of generic research management (Wechselblatt 2002). It is here that inclusion and differentiation of faculty function as necessary opposites. It is not "excellence" that is common to the disciplines, but the management of them. But function 3 is more than a management plot because it too has deep roots in academic cultures. The one unambiguous driver of career advancement in research universities is success at the highest level of research. "Highest" means both the most prestigious and the most competitive level of performance, as in research grants, and academic publishing status is assigned on the basis of ranked performance. In practice, this means that status and the associated rewards (grants and infrastructure resources, promotion, recognition) are distributed in a highly stratified fashion. In research funding, the distributional picture is clouded by inequalities between disciplines due to the uneven spread of commercial research opportunities and the unequal prestige of fields themselves, so that stratification is not entirely merit based. However, the point is that the amplitude of vertical distinctions made on the basis of research performance is not wholly generated by the instruments of measurement. A persistent pattern in intellectual fields is that a small number of people made a high proportion of the recognized major contributions (Murphy 2010).

8.5 The Research Function as a Determinant and Signifier of Brand Value in National and Global University Competition

Research science, as manifest in rank-ordered measures of university performance, is especially determining of the value of institutional brands in global competition, and, to an increasing degree, their standing in national competition as well. Research performance also feeds into the value of national system brands in a globally competitive environment in which governments operate as "competition states" (Cerny 1997). The determination of value in competition might be the most important function of research in universities, sociologically speaking. The underlying logic is research as a competitive status economy. The associated discourses are those of excellence and quality. Regulatory activities include university research counts and ranking—largely informal but very powerful—and government programs that evaluate and rank universities, disciplines, and units according to measured research performance.

Universities are located in—among other spaces that they inhabit—national and global status markets. Status is a relative or positional concept. Universities are engaged in positional competition (Hirsch 1976) with each other. In this competition, the status of higher education institutions is "the perceived quality of that producer's products in relation to the perceived quality of that producer's competitors' products" (Podolny 1993, p. 830). Here, positional competition is shaped by the structure of positions. "A producer's position in the market affects the relative opportunities open to that producer in comparison to those available to its competitors" (Bourdieu 1993, p. 830). Hence, the most important factors in determining market position are the identity of the actors and their status rank order, not the standard of their outputs (Aspers 2009). The status or brand power of an institution is valued for two reasons (Podolny 1993, pp. 830–831). Status is an end in itself; for example, students and graduates draw personal value from attending elite institutions; and status is a signal of perceived quality. Also, in research universities, university status, the value of the individual university brand, is primarily determined by research performance (e.g., Dill 1997; Horta 2009). Research determines status that is seen to signify quality. Stellar research performance helps to sustain the reproduction of elite status by attracting both high-scoring students and high-achieving faculty, and the resources they bring, further augmenting research outcomes, and so on.

The relationship between research and status has been much reinforced by the technologies of university ranking. Prominent global rankings are either wholly based on research, such as the Shanghai Jiao Tong Academic Ranking of World Universities, or include research as a sizeable component (QS World University Rankings) or a majority component of the index (Times Higher Education). Status is also augmented by selective student entry, but research reputation is now necessary for continued selectively at the national level, except in the small liberal arts college sector in the USA. Research is especially essential to global status.

Studies of student choice find that most students prefer a high-status research university to a lesser status institution with better teaching (Hansmann 1999; James et al. 1999). In this context, it is unrealistic to talk of higher education as a competition based on institutional "quality" or student satisfaction, unless "quality" means the market power of university brands. The publication of comparative indicators on graduation rates, student–staff ratios, library facilities, and surveys by students and graduates cannot change this. The comparison that matters is rank-ordered league tables. These settle all questions of value. Here, there is no information asymmetry between producer and consumer, as there is in relation to, say, learning quality. "By having a stable social structure of identities with positions fixed in relation to each other, which make up a status hierarchy, the market overcomes the problem of asymmetry" (Aspers 2009, p. 116). League tables of research output matter more than league tables of student satisfaction. Research is integral to brand value, whereas student satisfaction is not. Even the foreshadowed OECD data on comparative student achievement—while it will have its own power—will not dislodge the centrality of research in status.

Global competitive ranking plays a primary role in dictating not just the global hierarchy of individual institutions, but also the hierarchy between national research and innovation systems, and, therefore, also the hierarchy between different intellectual cultures. As is now well and widely understood, global ranking both drives standardization on the basis of an English-language monoculture and model of science and secures the status dominance of the leading universities in the English-speaking world where that scientific capacity is concentrated. This process is described by Zha (2009): "Competition for scarce resources"—in this case, the scarce resource is status—"causes institutions to become more similar because the uniform environmental conditions of competition bring forth similar responses. Consequently, there is a convergence of institutional function structures elsewhere"... "During the integration process, a hierarchical order begins to emerge, as organizational integration implies standardization, which measures institutions by one single set of criteria and tends to define them by rank or by the score they obtain compared to other institutions. The integrative regime then moves towards a hierarchical regime. In an integrated hierarchical system, research qualifications are usually the essential condition for access to resources and prestige. This has essentially become a worldwide phenomenon" (p. 459). And, further:

> In an integrated hierarchical system, research qualifications are usually the essential condition for access to resources and prestige... Consequently, the research-intensive universities become dominant players in the international arena, while the teaching-focused institutions are fundamentally mandated to meet domestic and local needs... In this process, if the more developed countries have experienced to a large extent normative pressure, the developing countries have experienced "mainly coercive and mimetic pressure" (Vaira). (p. 463).

There has been a multiplication of rankings based on composite indicators (e.g., SJTUGSE 2012; HEEACT 2011) or single measures (e.g., Leiden, CWTS; SCIMAGO 2012) of research performance. These vary in the extent to which they factor in quality measures such as highly cited researchers, papers in leading journals, or the ratio of highly cited papers to total papers; or focus instead on paper quantity. The role of these instruments in status valuation makes them especially potent and we can expect much development of the industry in the measurement of research publication and citation, reinforcing this function of research.

8.6   The Research Function as One Key to Economic Innovation and, Hence, as a Key to Economic Growth and Competitiveness

Research in science and technology is positioned as key to innovation, growth, and competitiveness. This includes both commercial research and research as a public good. Here is a typical understanding of this social role of research, from an Australian Government report on the innovation system:

> Research in the public and private sectors creates new ideas which fuel innovation, while skilled workers drive innovation by turning ideas into new products, services and processes for the benefit of the economy and society. (Australian Government 2010, p. 2)

The underlying logics are research as a condition of economic production and value-creation in other sectors, and research as a generator of, and commercial market in, intellectual property. The associated discourses, which are ubiquitous, are those of innovation and the knowledge economy, and a subset of those arguments focused on university "engagement" with industry and community. Regulatory activities include research funding programs designed to foster links between universities and innovation in industry, programs focused on engagement and region building, and assessments of university and research performance that are based on the alleged "impact" of research. Nevertheless, the impact of research—especially basic research—is difficult to measure exhaustively because the effects tend to be longer term and positive outcomes are normally dependent on other conditions associated with innovation. For example, even the creation of commercializable research does not, in itself, guarantee industry will find the necessary capital investment and take the risks.

Despite this, the government can be expected to persist with measures of impact as these technologies enable states to strengthen their control over the relationships between universities, industry, and government. In the last analysis, the positioning of research as a branch of the economy and key to competitiveness is primarily a device for securing and maintaining state management of science. In that respect, the innovation discourse and its social function 5 practices are specifically in tension with the collegial notion of research subject to academic freedom that is sustained by social function 2. More generally, there may be some tension between the focus on applied research suggested by function 5 and the valuing of basic research—in quite different ways—that is engineered by the collegial function 2 and the brand building of research in social function 4.

The innovation argument, which also shades into the creativity argument (below), has several antecedents (Peters 2009). For example, in economics, Denison (1962) modeled education and research as the "X-factor" that explained the residual in the long-term growth of the US economy. Denison stated that the residual was large, explaining over 40 % of growth, and assumed that research was the main component. Romer (1990) and others reinvented economic growth models to encompass continuous technological innovation. Porter (1998) included research within the factors affecting the long-term competitiveness of nations. The role of research in innovation and competitiveness has also been powerfully shaped by the growing relative importance of knowledge-intensive production and trade, and conditioned by the ubiquity of information and communications technologies (ICTs). Since the early stages of the Internet, universities and research institutes have been relatively highly networked.

Within innovation systems, universities take the main role in basic research, and at a time when public funding to support university teaching is often problematic, there is little debate about the need for public investment in research, though there is

debate about how and how much to invest. Nations vary in their patterns of investment in university research, but the overall secular trend is for increasing investment. In many but not all countries, the rate of increase in spending on research in universities appears to have been advanced following the beginning of global university ranking in 2003. In some of these cases, spending has also become more concentrated on leading universities. Here, the dynamics of the innovation function coincide with the dynamics of brand competition. Social functions 4 and 5 tend to articulate and support each other. The role of research in innovation systems also underpins both the management of research as a universal aspect of academic labor (function 2) and the targeting of investment on the basis of performance (function 3). The growing emphasis on research impact makes function 3 more important than function 2.

8.7   Research as the Source of Open-Source Knowledge and Creativity

Universities are principal generators of freely accessed knowledge across the range of disciplinary fields (Webometrics 2012), a role that, again, has been enhanced by their takeup of ICTs. This social function of research in universities is associated with a range of activities, from publicly disseminated "open science" via academic publishing (OECD 2008), to the role of universities in the expanding blogosphere, to university contributions to the arts, to the fostering of concentrations or precincts of creative workers across fields. Its underlying logic is research and its dissemination as public goods. The associated discourses are those of open-source knowledge and exchange, and creativity. Regulatory activities are less well developed than in relation to the other social functions of research, but some measures of research output and impact enter this territory.

Unlike the innovation function—where the ultimate index of value is the contribution of research to measured economic growth, except, perhaps, in research on medicine and ecology, where welfare concerns are uppermost—the functions of open-source exchange and creativity do not exclude the arts, humanities, and the humanistic social sciences. In this function of research, also, there is likely to be more emphasis on the role of research, especially social research, in gathering evidence on uncomfortable problems, interrogating society, and speaking truth to power. Here, there are tensions between the practices of university research as open-source knowledge flows and the more instrumental and reproductive functions of research in the innovation economy (social function 5), especially commercial research. There are also tensions within social function 5 between differing uses of research, such as, on the one hand, public goods research in ecology or medicine, and, on the other hand, the development of commercial intellectual property for mining or pharmaceutical companies.

How much of this open-source function of research is university based? Universities that harbor their own role in the validation of knowledge, excluding as much knowledge from circulation as they include, are not perfect vehicles for the open-source movement. Much open-source research, especially much critical scholarship and more creative activity, takes place outside universities. The literature on "hotspots" of creativity (e.g., Florida 2002) emphasizes the social and economic milieu of creative work beyond the universities. Here, universities, as concentrations of research activity and career opportunities for creative people, are seen as contributors to the pool of talent, to its mobility and organization, and to cross-field stimulus. Examples often mentioned are the proximity of Stanford and Berkeley to Silicon Valley, and Harvard/MIT to the Boston corridor. These are arguments by association that rarely get to the bottom of whether the university was a generator of the entrepreneurial activity, or functioned as a necessary but insufficient condition, or had a looser role.

8.8   Discussion

This outline of the six social functions of research makes it possible to explore the actual (and potential) harmonizations and tensions between these functions. In matrix form, the relationships between them is shown in Fig. 8.1.

Research as the function differentiating universities from other educational and social institutions, social function 1, is compatible with research as the unifying culture across the academic professions, and by defining the field of university research activity, it frames the competitive status market in higher education. It has no necessary implications for the functions of research in differentiating the academic professions and the role of research in innovation.

Research as the function that signifies the culture of the modern university and unites the academic professions, social function 2, is compatible with the functions of research in the innovation economy, and it is in necessary tension with the opposing social functioning of research as the differentiating factor in the academic professions. Both rank ordering and egalitarian inclusion, both difference and sameness, are essential to the ordering of university faculty.

Research as the function that differentiates and rank orders the academic professions, social function 3, is strongly compatible with research as the defining value in status competition between universities. Both involve status ordering. Their respective discourses of meritocratic competition are closely overlapped.

As noted, research as a determinant and signifier of brand value in national and global university competition, social function 4, draws its definition from the field boundary (social function 1) and is strongly confirmed by the status ordering of academic faculty within institutions (social function 3). It is also closely compatible with the innovation economy functions, for example, where these emphasize global competitiveness. It is in obvious tension with the egalitarian ordering of the academic professions in social function 2. As noted, the function of research in

	1 Research as border of field	2 Research unites faculty	3 Research stratifies faculty	4 Research as brand value	5 Research innovates economy	6 Open source creativity
1 Research as border of field		MUTUAL SYMPATHY		MUTUAL REINFORCE		TENSION
2 Research unites faculty	MUTUAL SYMPATHY		TENSE but NECESSARY OPPOSITES	TENSION	MUTUAL SYMPATHY	SOME MUTUAL SYMPATHY
3 Research stratifies faculty		TENSE but NECESSARY OPPOSITES		STRONG MUTUAL REINFORCE	MODERATE TENSION	TENSION
4 Research as brand value	MUTUAL REINFORCE	TENSION	STRONG MUTUAL REINFORCE		STRONG MUTUAL SYMPATHY	STRONG TENSION
5 Research innovates economy		MUTUAL SYMPATHY	MODERATE TENSION	STRONG MUTUAL SYMPATHY		TENSION BUT OVERLAPS
6 Open source creativity	TENSION	SOME MUTUAL SYMPATHY	TENSION	STRONG TENSION	TENSION BUT OVERLAPS	

Fig. 8.1 Relationships between the six social functions of university research

economic innovation (social function 5) draws support from brand competition. At the same time, it is framed in the terms of a universal function of universities and, thus, tends to be more compatible with social function 2 than 3.

Research as the source of open-source knowledge and creativity exhibits a greater or lesser level of tension with all of the other social functions of research in universities, except for research as a signifier of faculty commonality (2).

The outline of the six social functions of research also raises questions about the contextual factors that have shaped university research. In the last 20 years, communicative globalization has tended to elevate the importance of some functions, including social functions of research 4, 5, and 6 that relate to status competition, the role of university research in innovation and economic growth, and its role in the open-source knowledge environment. The NPM intensifies competitiveness in higher education—again, augmenting status competition (social function 4) - drives the technologies of performance management and multiplies the means of differentiation of academic work (social function 3), and favors an intensification of the relationship between university research and innovation (social function 5). The NPM explicitly elevates function 3 (academic hierarchy) relative to function 2 (academic college) and rearticulates global convergence as status competition.

More generally, the six roles of research have differing points of origin. Arguably, the social function of research as a boundary marker (social function 1) has been shaped from inside the research university as part of its processes of self-definition and identity formation, even though the specific acts of boundary making must be validated by external authority, usually government. The social function of

research in defining the unitary culture of the academic professions, and its social function in differentiating and ranking that same profession (functions 2 and 3), also originate largely from within universities. The function of university research in open-source knowledge (function 6) has mixed origins, both internal and external, though it is now primarily sustained by Internet technologies developed outside the sector. The social function of research in the innovation economy (function 5) is largely a state-developed discourse foisted on universities from outside, albeit with their often enthusiastic collaboration.

University ranking technologies—research as the index of value in the university status market (social function 4)—partly originated from media companies outside the sector, are supported by public enthusiasm, and are valorized by states that explicitly arrange higher education as a field of competition and construct individual student engagement in higher education as a process of investment in private returns. These moves have made the issue of brand value crucially and generally important. At the same time, research universities also exhibit endogenous desires to compete and hierarchize themselves. The strongest institutions have a vested interest in more intensive competition, which carries little threat to them (elite universities are rarely displaced from their leading role) and helps them to sustain their advantage. Some ranking technologies also come from inside the sector, including those of Shanghai Jiao Tong and Leiden University. In the status market, the external drivers of the research mission coincide with internal drivers. It is not surprising that the status market is now strongly embedded in the contemporary university.

Lastly, this account of the social role of research throws some light on the relationship between research and teaching in the research university. Given that time is zero-sum, there are obvious tensions between these two mega-functions of contemporary universities—between enhancing research activity and enhancing teaching in a mass higher education system. In the end, it is teaching time per student that misses out. There are also tensions between the role of teaching as personal, social, and moral formation of persons, and the more bounded role of research in specific inquiry. It is only in the research training process that the role of research in subject formation is acknowledged, though that role is profound, shaping researchers more deeply than most forms of teaching.

But what are the practical points of junction and potential synergy between teaching and research? There are limited direct overlaps: in research training, though this is mostly categorized as research only; and in research-informed teaching. The systems for defining academic labor and managing academic research performance (social functions of research 2 and 3) provide mechanisms for balancing teaching and research. However, the strongest nexus is through the status-building role of research (social function 4). As noted, research feeds into the brand value of the university degree. Hence, it determines both the value of the teaching/learning opportunity for the student, and, later, the value of the taught degree that she/he takes into the labor markets. This is the true nexus between teaching and research and, arguably, the primary factor in holding together the disparate conglomerate activities of Kerr's "multiversity."

8.9   Conclusions

Research in higher education carries out a multitude of social functions, but this complexity does not exceed the grasp of observation and reason. This paper has identified six distinctive social functions, while acknowledging that there are points of overlap and of internal tension between these six functions. The main point is that there is little to be gained by discussing research in higher education exclusively in terms of one or another function or associated discourse, such as academic freedom or rankings or the innovation economy. Such "single-issue" approaches, often mobilized for normative purposes, tend to confuse discussion.

The six social functions are not fixed in stone and the balances and relations between them are constantly changing. In the last two decades, the dominance of neoliberal and NPM policies and programs has been associated with a decline in the organizing power of the collegial function of research, as a universal signifier of faculty labor (though this function remains strong) and the growing potency of practices associated with research as the differentiating factor in academic labor, research organized by the competition state as a source of innovations and economic competitiveness, and research as the index of value in interuniversity competition. Though globalization is neither in itself neoliberal, competitive, nor national, the particular combination of neoliberal practices and global convergence that characterizes this period has elevated both the competition state and global research competition to unprecedented importance in society. These functions, especially status competition, fragment and localize other social functions of research, including its collegial face and open-source potentials.

In today's enhancement of five of the six functions of research (the exception is the collegial function), there are signs of research overreach. There must be doubts about whether the centrality of research is merited, especially its default role in global status competition. The normative issue raised by the multiple character and pivotal importance of research is whether and to what degree research values and valuation should enter into judgments about the university's role in the education of students, including both knowledge transmission and valuation. The question "what is a university" is raised anew. So far, these doubts have been impotent in the face of the research juggernaut, though the growing fragmentation of teaching/research forms of faculty labor might, in the end, prove to be a Pyrrhic victory for the research mission in universities, as it tends to undermine the conditions that have, so far, supported the rise of research.

As the rising social functions of research are both partly (status) or largely (innovation) external to the university, the net result of these shifts is also to bear down upon the internal life and self-reproductive capacity of the university as an institution. It is in this sense that the university might be losing its way. But it is too easy to slide into reflexive pessimism, perhaps the dominant strand in conversations about the future of the university.

The university appears to us as a flabby and raddled beast; like so much of contemporary modernity, it recalls the time of the late Roman Republic, a grand

tradition that is now struggling to survive, shot through with cynicism, with public values stymied by private appetites and reduced to a kind of crude egotistical display. Yet, it still whirrs incessantly and reaches for the stars, fecund and full of life. Always full of multiple potentials, always communicative, and, suddenly, now enlarged to the level of the world. It is not yet time to give away the university and the social functions of its research.

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Chapter 9
University Service: Conceptions and Enactments of University Service in the Knowledge Economy: Case Studies from STEM Faculty in the USA

Jenny J. Lee, Blanca Torres-Olave, Aurelia Kollasch, and Gary Rhoades

9.1 Introduction

Service has long been considered one of the foundational responsibilities of public universities in the USA, along with teaching and research. Hence, faculty work has long consisted and been evaluated in terms of service, although research and teaching are more heavily weighted. The nature of service has, in some regards, been more varied and less clear than the nature of research and teaching. While research is easily determined by the number of publications, journal rankings, impact in the field (i.e., citation index, journal impact indicators), and teaching has come to be evaluated in terms of student evaluations and enrollment, service is more difficult to define and assess. Service is sometimes referred to as "almost anything outside teaching and research" (Weerts and Sandmann 2008, p. 92). Furthermore, service is typically considered secondary to research and teaching, sometimes even referred to as the "third mission" (Roper and Hirth 2005), "our lost middle child" (Brazeau 2003), and "the swampy lowlands" (O'Meara 2002a).

For all the changes in higher education, the university service function remains foundational to the public mission of US universities. For example, as indicated by the institutional association representing such institutions, more than 100 land-grant universities are engaged in "public service missions of educating students, seeking new knowledge, and helping to solve problems locally, regionally, nationally and beyond" (APLU 2012). While service, in its broadest form, may arguably include research and teaching, it is also considered a separate component that may involve serving in local, state, national, or international committees, professional

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associations, public outreach, and more. What research and teaching do not always encapsulate, however, is the university's public responsibility in extending its knowledge and services to the local and state context. Such a local and state role, historically in agriculture (land-grant universities typically have strong professional schools of agriculture, traceable to their origins in the late 1900s) and more recently in a wider range of economic and social arenas of development, makes for an interesting contrast with continental European universities, which have been central players in nation building.

Despite continuity in the significance of service and involvement in local and state communities, there are some indications that, with the rise of academic capitalism (Slaughter and Leslie 1997), the orientation and nature of service have changed—e.g., from service for free to service for a fee (Lee et al. 2005). The new knowledge/learning regime has involved new circuits of knowledge production in higher education, and a blurring of boundaries between the public and private sectors. In this chapter, we explore the extent to which these changes have translated into changing patterns of service.

The changes that are likely to come with academic capitalism and a market logic that shapes academic work are heightened with the pressure on institutions to generate more of their own revenues. The current economic downturn has shifted faculty work from producing public to private goods. We explore the extent to which that plays out in faculty service. As state appropriations in the USA continue to decline in relative terms and in terms of per student allocations, and as operational demands increase, universities are under increasing pressure to generate their own funds, beyond what states allocate. These alternative revenue streams might include increasing tuition fees, expanding fee-for-service programs, seeking industry partnerships, and emphasizing grants in determining research pursuits, to name some. In addition to increasing financially profitable activities and partnerships, core functions have also diversified towards entrepreneurial and technological development, altering the identity of universities as "flexible, economically responsive institutions" (Bird and Allen 1989, p. 583).

In short, faculty as a workforce and faculty roles are also being reshaped. As universities are downsizing the number of full-time tenure-track faculty (AAUP 2012), there remain fewer tenured faculty to handle internal administrative duties, such as governance and committee participation (Lounder et al. 2011).

With the preceding considerations in mind, this chapter briefly reviews the history of university and faculty service, and then provides case examples of how service is being reconceptualized in the new knowledge economy. There are three major conceptions of service in both the literature and our data. The first is that service consists primarily of activities that support institutional structures, i.e., committee work at the departmental or institutional level. This is a view put forward by many of the faculty. Second, service is also outreach to the community. This view is historically based but is becoming less evident as market interests are pervading faculty work. Finally, service is being framed as building university partnerships, often with economic and revenue-generating goals in mind.

9.2   Literature

The onset of university service in the USA commonly refers to the late nineteenth century, with the passing of land-grant and cooperative acts. By the 1800s, higher education emphasis expanded beyond educating the relatively few to benefiting a broader range of students in more practical and applied areas of study. The Morrill Acts of 1862 and 1890 were instrumental in the process. Four-year land-grant universities were established to serve the state and its citizenry. These acts provided federal land to the states and endow "land-grant" colleges towards the purpose of widespread education in agriculture, science, and engineering as a means towards economic prosperity. Since then, the Hatch and Smith–Lever Acts led to the creation and funding of agricultural experiment stations and cooperative experiment services, which, more importantly, formalized the role of the university in bettering the state and nation.

With the industrial revolution, including massive developments in transportation, manufacturing, and energy, came the rise of universities and the development of graduate education. By the late 1800s, graduate education was beginning to be established, further propelling specialized studies and strengthening disciplinary units within the institution. Following World War II and the eventual growth of the postwar economy, the National Science Foundation (NSF) was created in 1950, which provided significant federal funds toward scientific research. With the increasing emphasis on research has come some change in, and in some cases, declining emphasis on, service (Roper and Hirth 2005). Faculty loyalties to their disciplines began to take precedence over identifications with their institutions and local concerns, thereby appearing aloof from public life (Hollander and Saltmarsh 2000). With faculty emphasis and rewards on research and teaching, a divergence between the academy and public service emerged (Roper and Hirth 2005).

With the 1980 Bayh–Dole Act, which encouraged universities to patent government-funded research and then earn royalties based on the licensing of research findings to private industry, came the rise of the entrepreneurial university (Slaughter and Leslie 1997). The identity and logic of universities changed "from centers of knowledge to complex businesses with products to market" (Roper and Hirth 2005, p. 10). Since the 1990s, the conception of university service increasingly shifted from altruistic one-way giving to the local community (i.e., outreach and extension) for its taxpayer support, to more research-based scholarly "engagement," whereby universities engaged in a two-way relationship with society (Boyer 1995; Roper and Hirth 2005; Weerts and Sandmann 2008). While traditional forms of service exist, private partnerships are the new and emerging path of service. Economic development is now central to higher education in all forms of faculty work. However, while that pattern has been studied in the case of research and teaching, it is relatively unexplored in the case of service.

Service has traditionally been mentioned in almost every institution's mission statement, but less commonly has it been internally and externally clearly defined or fully incentivized (Holland 1997). Universities and faculty members are

renegotiating their conception of and commitment to service. In their review of mission statements, Weerts and Sandmann (2008) found that institutions tended to frame service as a transfer of knowledge to the public. Whereas the notion of public used to refer to state citizenry, it has, since the 1990s, expanded to include the global society. But while research brings prestige to a university, the institution has little to gain in their rankings from faculty who devote themselves to service (O'Meara 2002b).

Typical university and faculty service/outreach includes activities both internal and external to the university, and may involve partnerships with the community and industry. In this chapter, faculty service is used interchangeably with faculty outreach to better capture the extended scope of this type of activity. Internal service includes university or departmental committee work and handling of internal administration, while external service includes outreach, consulting, and service to one's professional association. While industry partnerships typically involve funded research, faculty members may engage in coordinating events, providing training, and lending expertise as a consultant. In addition to these examples, there are other forms of service that overlap with faculty teaching and research (Brazeau 2003).

Research on the topic of faculty service is limited but demonstrate positive regard for service, although it is not a priority compared to research or teaching. The latest national data of college faculty indicate that faculty at all types of institutions, on average, allocate the vast majority of their time to research (74 %), then teaching (28 %), and a much smaller fraction of time to service (12 %) (NSOPF 2005). In a survey of 4-year college faculty, 37 % of faculty devote no time to community service and 49 % allocate 1–4 h on this activity (DeAngelo et al. 2012). When asked to rate the value of their activities, 66 % of the respondents noted service as "very important" or "essential," while 71 % rated the same for research and 98 % for teaching.

Despite limited time allocation towards service activities, faculty tend to strongly support the idea of the university's public service mission. Among all 4-year college faculty surveyed, 85 % reported that they "somewhat" or "strongly" agree that colleges have a responsibility to work with their surrounding communities to address local issues. The same percentage believe colleges should encourage students to be involved in community service activities. Further, 71 % "somewhat" or "strongly" agree that colleges should be involved in solving social problems (DeAngelo et al. 2012).

Past research also differentiated faculty attitudes towards different forms of service. Moreover, Blackburn et al. (1991) found that faculty tend to report much less personal interest in internal administration (i.e., "serving on a campus committee, being involved curriculum revision, chairing a committee of your unit, and solving a unit problem") (p. 411) compared to research, but do engage in considerable effort to this undervalued activity. And when comparing public and professional service, faculty tend to refer to public service as service to the profession over the local region (Weerts and Sandmann 2008). Overall, such findings suggest that faculty support the idea of service, but tend to devote their service activities to professional associations and internal administration over service to the community.

Numerous reasons may account for a lack of affective commitment to civic engagement over other faculty duties. One is faculty members' greater commitment to a particular academic specialty that may not easily translate to benefiting overall society. Another is that faculty are socialized in institutions and professions that do not prioritize and, in some ways, discourage public engagement. Further, there are limited rewards and recognition for service compared to research and teaching when it comes to tenure and promotion. Further still, there is a prevailing (though unsupported) view that service comes at the expense of research, and that too much attention to service may jeopardize academic careers (Checkoway 2001; O'Meara 2002b). In other words, service is "discretionary time" (Checkoway 2001, p. 137). Moreover, salaries are negatively associated with faculty time in service in all 4-year institutions (Fairweather 1993). Further, faculty are rarely hired for service or held accountable to their service. And, in some cases, untenured faculty may avoid or abandon community engagement out of fear of job loss (Weerts and Sandmann 2008). The importance of the disincentives noted above is evident in Weerts and Sandmann's (2008) finding that faculty tended to be involved with community engagement if it yielded monetary rewards, special recognition, or enhanced their research or teaching.

Moreover, faculty have strong disciplinary affiliations that often take precedence over institutional loyalties (Lee 2004, 2007). Particularly in research universities, "cosmopolitan" faculty (in contrast to "locals") tend to seek recognition from their disciplinary over institutional peers, which then often translate to institutional promotion and rewards (Gouldner 1957). In the case of the USA, such shared disciplinary values tend to cut across the academic profession, beyond institutions. As such, it is not uncommon for faculty to change their institutional affiliation several times throughout one's career, but maintain, and often even increase, their professional status. The disciplinary recognition and rewards, however, are solely based on one aspect of their tripartite work—their research.

Despite the strong disciplinary cultures that continue to exist, institutions continue to shape faculty values and behaviors (Lee 2004, 2007). Universities have played an active role in promoting and supporting faculty entrepreneurialism over traditional public service/outreach, thus potentially reshaping the values of faculty across all disciplines. They have done so by providing space, human resources, venture capital, and formalizing curriculum with new entrepreneurial requirements (Bird and Allen 1989). Yet, sometimes what constitutes service is difficult to delineate. For instance, the dividing lines between faculty research and service become blurred when considering the university's role in spurring regional development. Faculty research commercialization may indirectly benefit state citizens in spurring the local economy via private industrial growth. In this case, linking research with entrepreneurialism, often in the form of knowledge transfer, has been classified as the "third mission" of universities, beyond education and basic research (Laredo 2007). In the current shift towards economic interests, service has been reconceptualized as private growth and has become an increasingly important university function.

Much work beyond the traditional faculty tripartite roles is unconsidered and undocumented; consulting is an example of this. Whereas there is evidence that faculty who engage in significant consulting activities in the community are more productive researchers and better teachers than those faculty who do not engage (Checkoway 2001; Lee and Rhoads 2004), the particular role of faculty consulting is still underexplored. Nevertheless, its existence speaks to the important linkages between industry and the academy, sometimes leading to more formal research partnerships, business ventures, and product developments (Bird and Allen 1989), particularly in the basic science and applied science fields (Lee and Rhoads 2004). More than ever before, universities are trying, mostly unsuccessfully, to become "incubator organization[s]" to spawn new business (Bird and Allen 1989, p. 587), again with implications for traditional conceptions of faculty work. Despite the possible blurring of faculty work, a national study of university faculty revealed a significant negative relationship between using funds for research and commitment to teaching (Lee and Rhoads 2004). Entrepreneurialism likely holds negative consequences for traditional service as well.

In the USA, as is evident in the data we report in this chapter, these entrepreneurial efforts do not follow the anticipated model of Mode 2, or context-driven, problem-solving, and transdisciplinary research. Part of the conception is put forth by Gibbons and his colleagues and identifies the emergence of fluid organizational structures that emerge and then disappear around specific problems, in contrast to the fixed, discipline-based departmental structures of Mode 1 research (Gibbons et al. 1994). The institutes and centers analyzed in this chapter constitute more fixed structures, coexisting with discipline-based academic departments. The flexibility lies more in the new categories of non-tenure-track faculty, and in new interstitial units between academic units and the external world, than in fluid organizational structures. Part of our analytical focus in this chapter is on whether and how institutes and centers, like universities, intersect with the external world in terms of service.

Faculty perceptions about service and partnerships are not uniform. Campbell and Slaughter (1999) found that faculty who work with industry tend to believe that collaborations with industry "should be considered part of the public service aspect of academics' responsibilities," and that any profit (private or university) were in the "public's interests," whereas faculty who did not have such relationships did not share such views (p. 324). There was a similar divide of opinions about university–industry profits being in the public's interests when comparing business faculty with those in the social sciences and fine arts. Moreover, Baez (2000) has argued that, for faculty of color especially, service is an important form of critical agency in changing educational and social structures of inequality. And there are many examples of such community-minded faculty service in the literature (Antonio et al. 2000; Bellas and Toutkoushian 1999; Kiyama et al. 2012). In these cases, the internal commitment to social change drove faculty commitment to service, sometimes even at the expense of other professional activities.

An emergent form of university and faculty outreach is charter-building activities with the local business community. In such cases, faculty get involved

with building the preferential access to employment and training for their students. For instance, a study of public community colleges and for-profit and private occupational colleges noted that the latter were more likely to build preferential access to employment (charters) by forming relationships that ensure employers of a dependable supply, type, and quality of students (Deil-Amen and Rosenbaum 2004). For the purpose of this study, chartering is mostly maintained and enhanced by reciprocal relationship-building activities between faculty and external agencies. It depends on trustful and authoritative information exchange that values relationships and will not risk losing them for short-term gains. This type of service activity on the part of faculty is realized without any revenue generation.

By contrast, there may also be entrepreneurial activity reflecting a market-driven approach in which activities and structures are established for the purposes of generating revenues. In this chapter, we explore the extent and mechanisms of each.

9.3 Methodology

Multiple case studies sought to explore how service is conceptualized at the institutional and individual levels. The research sites for this study were three public research universities (all university names are pseudonyms): (1) Midwest University (MU), (2) Midwest Central University (MCU), and (3) Pacific West University (PWU). MU and PWU are internationally renowned universities, more globally oriented, whereas MCU is a considerably less prestigious, regionally oriented university. All three are relatively large universities by US standards, with enrollments ranging between 28,000 and 41,000 students. All were established in roughly the same time period: the two Midwestern universities at the end of the nineteenth century, and PWU in the early twentieth century.

After reviewing numerous institutional websites, three universities were selected for three reasons. First, each of the universities' websites stresses the importance of community relations and recognizes a need to serve the communities. This was important given our interest in service generally, and particularly in the extent to which that service consisted of intersections with external communities. Second, the three institutions are comprehensive in scope, and represent three types of large research universities—an elite land-grant university (PWU), an elite non-land-grant university (MU), and a regional research university (MCU). Lastly, all three have large and active research centers in life sciences, physical sciences, and engineering fields, which is the focus of our work, ensuring sufficient populations from which to select participants.

Our interview sample consisted of 19 in-depth, semi-structured interviews. Participants were drawn from life sciences, physical sciences, nanosciences, and engineering research centers at each of the three university sites. Our focus is on centers, not traditional academic departments, because of our interest in newer, more fluid structures and sites of academic work. Our interviewees were restricted to faculty, but we included non-tenure-track faculty because of our interest in

changing and newer forms of academic staffing and academic production. We want to understand how newer structures of academic work translate into forms of service and connection to the community in a new, knowledge-based society. Furthermore, we purposely selected STEM-based centers. While there is ample evidence that faculty entrepreneurialism occurs across all academic disciplines, past research suggests that they mostly occur within science and applied science fields (Lee and Rhoads 2004).

9.4 Findings

From the institutional profiles and interviews, we can observe some major trends in how service/outreach is conceptualized at the institutional and individual levels. Our results highlight interesting patterns of continuity and change in the construction of university service, often within the same category of institution and employee. In other words, different constructions of service work coexist alongside one another. In this chapter, we concentrate on two key findings.

First, we found considerable differences in the ways in which the interviewees talked about their service, including in terms of how they perceived it in relation to their research and teaching. Some participants articulated a segmented perspective about their service, as compared to others who articulated an integrative orientation. Faculty who held a segmented view of service saw it as mainly associated with administrative, maintenance responsibilities that they perform internally, within their institution, or externally, for their profession. Moreover, these faculty described their service as being separate from their research or teaching activities. By contrast, faculty who held an integrative view of service saw this work as inextricably connected to their teaching and research. Moreover, these faculty tended to devote more time to service-related activities, to be more likely to see this work as more meaningful, and to engage in community-oriented service that went beyond their organization and discipline.

A second major finding concerns a distinctive form of service that appears to be connected to the emergence of more entrepreneurial activity in public universities in the past several decades. A number of faculty we interviewed described service/ outreach activities that are very much analogous to active "chartering" efforts undertaken by colleges to establish important connections with particular groups in the community. In some cases, those activities were entrepreneurial in terms of having implications for revenue generation.

9.4.1 The "Segmented" View of Service

The "segmented" view of faculty service meant that service/outreach took mostly administrative forms and was described as not being directly connected to research

or teaching. When asked what forms service takes in their academic activities, a majority of the interviewees mentioned that service consists primarily of activities that involve the maintenance of institutional and professional structures. Within the university, the dominant form of such service is committee work. External to the university, a common example of such service was serving on editorial boards of academic journals.

These participants indicated that there is very little overlap between service work and their teaching and research. They considered service as, for the most part, independent from teaching and research. A physics professor at MCU offered a typical response to this effect: "I certainly try to bring in aspects of contemporary physics research into teaching, so there's a certain amount of cross talk there. But I wouldn't say that there's a significant overlap [with] service in any way" (Hirschi, Professor, MCU-Physics). Similarly, a research scientist at the MU's Transportation Institute provided the following answer to the question, "Are you required to do service activities in your position?": "Ah, yeah, the service activities are—like committee work. Yeah. I feel like those are kind of necessary things I have to do and they don't really benefit my research, or my teaching" (Bingham, Research Professor, MUTRI). As exemplified in the latter quote, faculty sometimes considered service a required duty that yielded little benefit to their professional advancement.

Although these faculty members viewed service as work that was necessary to maintain the organization and/or their profession, they did not express any real investment or intellectual effort in service work. It did not appear to be particularly meaningful to them. Some saw service as a "necessary evil"—a requirement or load that they had to carry out within the institutional structures, and, in some ways, a distraction from their real work of research and (to a lesser extent) teaching. Thus, there was little creativity or innovation in this realm, as service was considered mindless, unimportant work.

Such views were held by faculty at the three institutions across all ranks and types of appointment. The Transportation Institute at the MU is a case in point. The institute is home to a large number of non-tenure-track research scientists. As research scientists, these individuals are not expected to do any teaching, but they are expected to do service. "Part of what we get judged on is service. So for instance I'm an associate editor of a journal—that's service. I serve on committees at MUTRI, so I do those sorts of things. And that does count towards promotion" (Eby, Research Scientist, MUTRI). Service activities at the institute take the form of committee participation in the institute, the university, or in external entities such as academic and professional associations, journal boards, or conferences (e.g., as organizers). In some cases, student advising and mentoring were also cited as examples of service work (whereas others categorize such activities as teaching). But for these faculty, there are few to no service activities that involve the immediate community or region (individuals may pursue such endeavors; they are neither encouraged nor discouraged by the institute).

Some subtle differences exist in the segmented group regarding the extent to which they see overlaps between their service work and their research and teaching activities. For example, for some participants, committee work does intersect with

research as a way of maintaining the structure that supports the research. A physics associate professor at MCU expressed this view: "There's certain committees that I've served on at the university level that dealt with, say, internal funding for research. I guess you might say that at some level connects to what I do, as far as research is concerned" (Tycner, Associate Professor, MCU-Physics). An assistant researcher at PWU estimated that "90% of my activities are research, the other 10% involve helping with different activities for the day-to-day maintenance and management of the facilities [at my institution]" (Reed, Assistant Researcher, PWU-Nano). For these participants, the main aim in committee participation is to contribute to the internal organization of the institute, as well as to build up each faculty's portfolio in preparation for tenure/professional review.

Most interviewees who subscribed to the segmented view of service were quick to point out that service is not connected to research. Still, a common pattern among these participants was to categorically state the divorce between research and service at the outset, but then to proceed to provide examples in which service and research do overlap somewhat. These instances were constructed as exceptional and temporary, as in the following example of a faculty member who contradicted his own perspective on the overlap between service and teaching:

Interviewer   To what extent do teaching, research, and service overlap in your work?

Participant   Um [pause]. So, service doesn't really overlap—service overlaps right now with teaching in that we're trying to change the curriculum, in the curriculum committee. So I have that overlap there. The research doesn't overlap with service… there is some overlap with teaching. (Mueller, F, Associate, MCU-Chem)

Similarly, a research scientist who had said that service has little impact on his teaching and research mentioned that his service activities include membership in statewide and national committees on driver safety. "There have been a couple of occasions when I was asked to be on committees outside of the university because of my expertise on certain areas of research methodology, but it's usually the transportation safety stuff" (Bingham, Research Professor, MUTRI). Although this research scientist sees research as disconnected from his service, his participation in this type of advisory board is certainly linked to his research expertise. It may be that, in this regard, some adherents to the segmented view of service are expressing a deeply held conception of service as undesirable and lacking importance. That may lead them to downplay the extent to which service is linked to other scholarly activities, which is an important indication of professional values. Application of their work to local practice may be perceived as degrading their first professional priority and identification—their research.

The segmented view of service is understandable, even predictable. That is how service is framed in the way it is evaluated in universities. Indeed, in this regard, our findings are consistent with the literature on faculty rewards and recognition (Checkoway 2001). As pressure increases to do more grant work and be better at

teaching, what gets squeezed out? The answer is the investment of time in and commitment to service.

Indeed, a common theme in the interviews was the growing importance of research at the expense of teaching and, more pressingly, service. One adjunct professor at PWU blatantly stated that the reality of research universities in the USA is that "research [comes] first, teaching second, and service to the community and the university third" (Maida, Adjunct Professor, PWU-IoES). Another professor at the same institution mentioned that, over time, "somewhat more credit is given to teaching, but not very much to service at all." He made a connection to the need to bring extramural funding and the growing focus on research, to the detriment of teaching, but mostly of service work:

> The fact is that even to this day advancement depends on your scholarship, the quality and quantity of your scholarship, and how much extramural funding you bring in is a very important metric for advancement as well, which can have both positive and negative aspects to it. That's the reality in an era where the funding of the university has fallen to 15 percent by the state. Basically we're becoming a private university and we need to bring in tremendous amounts of extramural funding; so that is increasingly emphasized (Winer, Professor, PWU-IoES).

In fact, none of the interviewees expressed any external pressure to increase any participation in outreach or community-related service.

The pattern of faculty reducing time devoted to service as they and institutions increasingly emphasize research was evident even at the regional teaching and service-oriented university in our study. An associate professor of chemistry commented that, "From what I hear from especially the time before I came, I think the service has gone down a little bit." This shift involves moving some of the service responsibilities to more senior faculty. "What the new chair is trying to do is to give [new faculty] a little less exposure on the committee side and put the older people, you know, that already have tenure, experience, and give them a bit more time on the committee work" (Mueller, F, MCU-Chemistry). This is a multifaceted phenomenon. On the one hand, there is an institutional pressure to conduct more research, even in institutions historically committed to teaching and service (MCU). That burden reflects a longstanding historical pattern of aspirational academic drift (Rhoades 2007; Riesman 1959; Tuchman 2009) and, yet, it also reflects the increasing pressure and aspiration of generating new revenues through external research grants.

Such a pattern of academic drift is a function not only of academic administrators' aspirations, but also of the aspirations of the faculty, some of whom, particularly those in the sciences, support this transition. New faculty are hired and encouraged to prioritize grant-funded research. Even institutions without a history of research productivity may hire new faculty, particularly in STEM fields, based on their research prowess and potential to generate grant revenues.

In short, then, for these faculty members, there is a zero-sum game operating in regard to research and service. Some faculty who had a segmented perspective of service, nevertheless, believed that their teaching overlapped with research (Brazeau 2003). But such a meaningful intersection did not apply to service.

9.4.2   The Integrated View of Service Work

In contrast to the segmented view, other participants saw service as an integral aspect of a public institution and, often, as very much connected to their teaching and research. The integrated view of service suggests that the nature of academic work is such that the three core functions (teaching, research, and service) are interconnected. Notably, faculty with this perspective identified some types of service work, such as sitting on committees, similar to those identified by faculty with a segmented view. The difference lies in the way such work was interpreted in their scholarly lives. For example, when asked to what extent teaching, research, and service overlap in his work, the director of a nanotechnology center at PWU said:

> Oh, very much. I mean, that's really all what we do in laboratories, basically to teach students and postdocs... The special thing here is the proximity of our Institute is next to Science, Engineering, Medicine, Public Health, Neuroscience, and Psychiatry, so part of the exciting thing here is bringing everybody actually together to work together.... So when we do teaching and generally, and closely tied research and then service – you know, my own service involves the journal, which ties nicely to my work and it broadens my own knowledge and where the field is. I work with the federal government in terms of grant reviews and advising to the Office of Science and Technology Policy that also is another place for me to learn something in addition to contributing back ideas when I review manuscripts for other journals (Weiss, Director, PWU-Nano).

In contrast to many who held a segmented view of service, this participant not only possesses an integrated view of his work, but also demonstrates noticeable enthusiasm and conviction across all his activities.

Some of the adherents to this integrative view of service indicated that it is, at times, challenging to tie service to other areas of their work. A physics professor at MCU said that, because of his disciplinary affiliation, it is not always possible to link service to research or teaching: "There's not a lot of physics involved in, you know, the library committee work and that sort a thing." However, one way in which he tried to tie service with his academic work was through organizing public lectures. "To me... it's a lot a fun to bring interesting people here, talking about interesting things that the public might be curious about. So that's, that's a kind of service that you can do that overlaps pretty strongly with your professional work" (Jackson, Chair, MCU-Physics). According to this professor, such service is a "fun" aspect of his job, but ties in closely to his scholarly expertise.

For some faculty members who took the integrated view of service, the latter took on a dimension of translating science into public policy. Although, at the institutional level, public policy creation as a type of service work was highly visible at MU and MCU, this orientation to service work was articulated particularly strongly at PWU and MU. For example, at PWU, faculty associated with the Environmental Institute spoke of trying to influence environmental public policies as an important component of their service work. An adjunct professor stated that he does advocacy work by "working with lawyers trying to implement policy, and so we have some donors but we're primarily grant driven; write grants, get grants,

and do things" (Longcore, adjunct, PWU-IoES). Another professor in the same institute provided an extended description of his advocacy work, and how it relates to his teaching and service activities, in terms of the case-based approach to teaching. As such, he tries to incorporate "both the science and policy aspects of my activities in the air pollution field from the past 40 years into my classroom work, into my mentoring of graduate students." Students are encouraged to think not only about the egregious effects of exposure to pollutants, but also about the societal, economic, and institutional barriers to addressing environmental problems:

> I used the battles we've had that I've been involved with over the years in trying to reduce vehicle emissions and other kinds of emissions in the [region where school is located]. I've used my own experiences in trying to translate science to decision makers and try always to be giving both past and current examples this role that I think a scientist has in the environmental and sustainability area of trying to interpret what the basic research means or the applied research means for making appropriate decisions to reduce air pollution impacts, in my case, on vulnerable populations (Winer, Professor, PWU-IoES).

This advocacy orientation of translating scientific knowledge into public policy (not just of informing policy) can also result in major initiatives to impact policy. A professor of ecology was a founding member of a non-governmental organization (NGO) based in Washington, D.C., whose mission is to improve the scientific basis of environmental decision-making. The NGO, which has an annual budget on the order of 3–4 million dollars, holds annual conferences on a wide range of topics, such as food security and environmental health. For this faculty member, the creation of such an organization was an outreach effort to "deal with my feeling about we need to have a society that's more literate about science, particularly on environmental issues" (Hubbel, Professor, PWU-Ecology). That orientation of increasing scientific literacy is, in some ways, quite consistent with initiatives in the NSF to support efforts to educate the public about science, though it also has an advocacy, to shape public policy orientation, as well.

Faculty perspectives about service may be influenced by their interdisciplinarity. For example, the above examples come from faculty working at an environmental research institute, whose disciplinary training is in ecology, environmental sciences, and related fields of study. At the same time, this orientation has a more generalized focus on science than on a particular scientific subdiscipline.

Yet, it is not only the scientists in the institute in question who articulated this view. An adjunct professor at the institute, who is an anthropologist by training, made the connection between his view of service and his disciplinary affiliation. This professor stressed that, "as an anthropologist, you don't just take from people to move up in the hierarchy. You're giving back." A central aspect of this scholar's work is community-based participatory action research, an approach to conducting research that seeks to effect meaningful impact or change. The ethics of this approach stipulate that community members and researchers must be involved in the entire research process—from defining the problem to publishing the findings. In this way, researchers cannot remain outside the community but must, instead, become a part of it. Over 15 years "of tremendous outreach and advocacy," this

adjunct professor has built a network of nonprofit organizations ranging from community-based, resident-focused organizations, to professional organizations. His strategy to building these networks relied heavily on emphasizing the service aspect of his work. "We didn't want to go in there as researchers, we wanted to go in there first and do service and now we're beginning to be seen as a partner rather than coming over the hill and basically turning them into research subjects." He then transfers his research and service activities into his action research courses at the Institute of Environment and Sustainability. "So that works, so there's my teaching, there's my research. . .. It's all connected" (Maida, adjunct professor, PWU-Public Health).

The community-based and oriented research that is articulated by faculty in the above institute is also promoted at the institutional level by the university in which these faculty members are employed. That suggests some sort of organizational effect on or pattern to faculty orientations to service. Many of these initiatives come from the School of Public Health, which is the unit where this professor holds his adjunct appointment. The School of Public Health houses a Community Health Promotion Program that supports community service projects to benefit poor and underserved communities. Moreover, community-based research is also a central component to other university initiatives. For example, the university offers a number of minor programs that stress this type of scholarly work, including a civic engagement minor, Urban and Regional Affairs Minor, program evaluation, leadership, labor issues, peer mediation in K-12 settings, legal issues, immigration issues, research on education, and healthcare issues. The institution also provides a number of community-based research/travel grants for undergraduate students. Through various mechanisms, then, a university can foster and encourage patterns of service that involve an integrated approach.

9.4.3 Chartering and Entrepreneurship

A second major finding about service is the emergent types of activities that seem to reflect important aspects of academic capitalism (Slaughter and Leslie 1997; Slaughter and Rhoades 2004) as higher education institutions intersect in various ways and through various mechanisms in new circuits of knowledge production. Two patterns emerge from the data. One we characterize as "chartering" (Deil-Amen and Rosenbaum 2004), by way of faculty forming connections to facilitate the placement of students in training activities and in the workplace without financial gain. A second is entrepreneurship driven by market forces that foster relationships with community industries to generate revenues.

Much of the service/outreach work carried out by the interviewees consisted of activities aimed at securing job placement and/or training for students. Instead of simply relying on the human capital and credentialing benefits of a college degree, faculty and institutions may actively cultivate relations with employers, essentially negotiating a charter that legitimizes their students. For example, part of the service-related activities of a computer science professor at MCU involved

maintaining relationships with different companies in the region. The primary purpose of these linkages was to provide work opportunities to students. The professor works closely with a public utility company that hires many of his graduating students. This type of work involves careful consideration of the external partners' needs. "I contact them and they contact us. We talk about what we could do to help strengthen our program and strengthen our students' backgrounds to meet the company's needs."

Expressing the tensions of academic capitalism and the blurred boundaries between public and private sectors and purposes, the professor spoke of "a fine line" between catering to the company's needs and "design[ing] my students so that they can work at [public utility company]." Yet, the company's feedback was invaluable to ensure that the students received the necessary training to secure jobs upon graduating. This relationship and others like it, therefore, goes "back and forth" in an ongoing negotiation of who public universities are serving, the extent to which it is the interests of employers, students, and society.

A chemistry professor at the same institution described another type of service involving partnership work. Specializing in chemistry education, she has established networks with various constituencies in ways that bring together her teaching and service. "In my methods classes, I have the students who wanna become teachers. Often we go out into the local schools and do practice lessons with their own student—with their students." Likewise, as the regional organizer of an international chemistry Olympiad, she works with area teachers to find students interested in participating. For this activity, she also works closely with a volunteer who works in the chemical industry. "It's, you know, people who are interested in getting more involved with outreach with students in local schools" (Tomasik, Assistant professor, MCU-Chemistry). These two examples exemplify a chartering model of service/outreach in which faculty establish and navigate networks of employment or training for their students by forming relationships that ensure private and public employers of a dependable supply of graduates.

Although the examples provided were of tenure-track or tenured faculty, this particular intersection between chartering and service is also found among non-tenure-track faculty. So, the bridge-building function, although certainly carried out by tenure-track faculty, is not confined to them. Just as non-tenure-track faculty engage in segmented and integrated forms of service, we also found research scientists, adjuncts, and administrators engaged in chartering (as well as entrepreneurship) service. Indeed, adjuncts and research scientists spoke of being heavily involved in service activities—some of which took the form of student advising, lectures, and conferences with an important teaching component.

However, despite the extent of their service/outreach, in some cases, non-tenure-track faculty receive little or no credit for this important work, either by the institution or by tenure stream faculty. That may be particularly true when service does not take the form of committee work. A physics professor at MCU offered this view of adjuncts' and postdocs' academic responsibilities: "The temporary faculty. . . have a pretty heavy teaching load, and they will occasionally come to department meetings, but they don't have committee responsibilities, they don't have other service responsibilities; it's pretty much just teaching" (Jackson, MCU, Physics).

Depending on the type of appointment held by non-tenure-track faculty, there were some differences in terms of service expectations. For example, at MU, research scientists, but not adjunct faculty, are expected to carry out service activities. In fact, at the Transportation Institute, the annual staff review includes a section on service. As with tenure stream faculty, service takes the form of participation in institute or university committees: "We are expected to do service; part of what we get judged on is service. So for instance I'm an associate editor of a journal... I serve on committees at [the institute]. And that does count towards promotion" (senior research scientist).

Another type of service/outreach that relates to chartering is activity that involves faculty brokering relations among various groups and units within the university, as well as between universities and external constituencies and entities. For example, one research scientist who had a particularly strong record of conference organizing observed that this type of service activity is highly beneficial to his work. According to this participant, organizing conferences has a variety of uses. "[T]hey create a linkage between myself and the rest of the university, because I actively seek out speakers from other parts of the university to present their research at the conferences. They [also] help me make contacts with students." Although, as a research scientist, this interviewee does not hold teaching responsibilities, his service work actively puts him in contact with students who might be interested in doing research with him. More importantly, the conferences, which feature numerous industry representatives, are free to the staff, faculty, and students at the MU. This setup allows this participant to foster connections between faculty, students, and industry, which can, in turn, lead to different research and work opportunities.

One of the interesting aspects of the above activity, which sets it apart from entrepreneurial service, is that the direct aim is not revenue generation. Thus, the conferences are free to various parties. Rather than utilizing the conference as a revenue generator, the purposes of the conference are driven by partnering and chartering purposes.

Thus, adjunct faculty (as well as tenure stream faculty) can also act as important brokers in partnering and chartering. An adjunct faculty member at PWU mentioned that the extent of his service expectations at the institution is limited to attending faculty meetings and serving on a curriculum committee. However, his teaching appointment involves running an environmental science practicum for senior students. The practicum requires students to spend a term in a lecture and lab environment, and an additional two terms working on a project for off-campus clients. The latter part of the practicum calls for a great deal of interaction with businesses, nonprofit organizations, and government agencies in which the students will be placed.

> I solicit all of the clients, select them; there is usually about twice as many as projects we can do. And then I coordinate all the project advisors who range sort of from very advanced graduate students to full professors. I advise a couple of groups myself, make sure everybody is else is on time through the winter and spring, and then give them some career advice and send them on their way.

The importance of such external connections is considerable. So much so, that this interviewee considers the fostering of these relationships as his main

contribution to the institution. The practicum "is a good way to introduce companies to what the institute does. And [when] we're looking for corporate sponsors, I'm basically serving as a gateway drug to the institute by inviting them to apply to be a client for the practicum" (Longcore, adjunct, PWU-IoES).

In a way, the partnering and chartering work brings these academics close to the kind of interstitial work described by Slaughter and Rhoades (2008). Interstitial organizations are intended to facilitate the interaction and intersection of higher education, state, and market organizations. Faculty and academic units in the science and engineering units have been important drivers in the creation of interstitial units (Slaughter and Rhoades 2008).

One of our interviewees was the director of such an interstitial unit in environmental science. Although her work is very research driven, she estimated that up to 85 % of her time is spent in what she called "outreach partnering" efforts, especially with state and federal agencies such as the U.S. National Park Service. Her work involves "understanding what these agencies are doing, helping to develop a research agenda and prioritize, making connections, better understanding who does what within the university." An outreach component of her work is the organization of public lectures in coordination with state partners. "We have this big international conference... we participated in a science festival that the park service had that was geared toward K-12 kids" (Federico, Executive Director—PWU La Kretz Center).

While interstitial work is often assumed to connect the university with the external commercial world (Fisher and Atkinson-Grosjean 2002), the "chartering" work described here seems to have more diversified aims, including but not limited to linking students to potential employers and creating goodwill towards the institution.

A second form of distinctive partnering activity is entrepreneurship. Yet, the extent to which faculty engage in entrepreneurial activities is limited, and varies considerably. For some of our participants, entrepreneurship grew out of other non-entrepreneurial service activities. For instance, an associate professor who specializes in chemistry education mentioned an instance in which her teaching and service work took an entrepreneurial turn. As a doctoral student, this interviewee was part of the education and outreach group within a large center specializing in nanotechnology. As part of her work in the center, she developed an online course in nanotechnology for K-12 teachers. After completing her doctorate, she continued collaborating with researchers at the nanotechnology center, while expanding the online course she created. The course also serves as a platform for her to conduct research on online learning environments in chemistry education. "I survey the teachers in the course [to] see what the best way of representing the material is. And then ultimately I assess them a year later to see if they have used what we gave them in the course" (Tomasik, Assistant professor, MCU-Chemistry).

The entrepreneurial aspect of the course is that it is offered through the university's professional education program—an academic unit that prepares teachers and other school professionals to work in K-12 settings. This program,

which is independent from the institution's school of education, focuses on online learning. Being able to offer her course through this professional education unit has been beneficial financially to the unit, although it has been more expensive to the students. It has also enabled the course to reach a wider audience. "Before I got here, [the course] was offered through [the participant's alma mater], and they did not have sort of a separate online division that we could offer it through, and it just was a lot more expensive." In contrast, the professional education program at her current institution "has a lot of networks, a lot of advertisements throughout the whole country. . .. So we're able to recruit a lot of people for the online courses that way." The unit is a quintessential example of an interstitial unit developing in an academic capitalist knowledge/learning regime.

Although the interviewee was glad that her course was so successful, it was interesting that her knowledge of how her work was used by the institution was rather vague. "I hear there's many different MCU sites across all of the country. . . I'm not familiar with it I'm sorry." When the interviewer asked for more details about the reach of the professional education unit, the participant said, "When I've met with the [unit] representative, they [said the unit is] mainly stationed here on campus, but they talk about having—I guess they call them 'campuses' all across the country. And it sounded like it was very far reaching."

The above example provides an interesting window to the different ways in which the service work of individual faculty can be capitalized upon by an institution seeking to generate revenue from that activity. For the chemistry professor, developing her online course was a way of integrating the research, teaching, and outreach work she began as a doctoral student. For the institution, unbeknownst to the faculty, it was an opportunity to capitalize on a faculty member's intellectual property. The university took a service activity and injected an entrepreneurship dimension to it by making it part of a fee-for-service program (the professional education unit generates about $13,000,000 in tuition revenue annually).

The discrepancy between how individual faculty and institutions conceive and carry out service/outreach work is noteworthy. The faculty we interviewed seemed to think of for-fee projects more as consulting, not as service. Indeed, most interviewees had clearly distinct categories for "consulting" and "service" work.

By contrast, however, for the institutions, there was no distinction between service and making money from the activity. Indeed, universities have shifted from service-for-free to fee-based services. For instance, on its website, MCU frequently called attention to the many venues through which faculty and students reach out to the broader community. One of the most prominent examples was the "community connections" program, an online database that provides a list of faculty and staff members who are available to provide expertise services to the community. Available expertise ranges from arts and diversity training to health services and geographic information systems. Faculty and staff who offer their services through this directory specify their area of expertise and availability, as well the remuneration system for the services provided. The MCU website emphasizes that these and similar services offered by the institution are available for a fee (though at a lower cost than in the private sector). Similar clearinghouses

to locate institutional for-fee services were also foregrounded as part of the outreach activities of the other two institutions analyzed.

Although in the examples mentioned above the institution appears to be the main driver of initiatives that blur the distinction between service and entrepreneurial activity, some faculty are involved in similar endeavors. For example, the director of an energy institute spoke about the connection between service and entrepreneurialism. This faculty member mentioned that sitting on the advisory board for high-tech startup companies is not only a tacit requirement for faculty in his field of study, but also an important component of his outreach work:

> There's a lot of community outreach that we do, but that comes more with territory of being the director of the institute. For example, sitting also on advisory boards for several entities.... I'm also on the advisory board for the high-tech startup companies. I'm the cofounder and also part owner of two high-tech start-ups, which is now almost an expected norm, at least in the Engineering College, that faculty transfer their know-how into business development and help launch operations (Schwank, Professor, MU-Phoenix).

The above interviewee also elaborated on what he saw as an increasing institutional expectation for both faculty and students to be involved in entrepreneurial activity. "Many of our students [are] heavily involved in entrepreneurial activities. Our university has very interesting and successful programs in entrepreneurship." As an example, he mentioned an "entrepreneurial boot camp" cosponsored by his institute, the university's college of engineering, and a local utility company. "We are mentoring teams of students who have essentially some ideas for new technology and helping them build a business plan and to get mentored by venture capitalists and also by professors at the university." After 6 months in the program, the ultimate goal is to help students launch a company. "Then, the university is actually inside venture capital to help these students get off the ground." According to the interviewee, this type of entrepreneurial activity constitutes "a totally different look at undergraduate education. . .. [T]hat's certainly a new development that I've seen evolving in the last 5–6 years." The above situation illustrates how blurred the lines between service/outreach and entrepreneurship have become.

9.5   Conclusion

As higher education has changed, so have conceptions and enactments of faculty members' service. The changes apply both to institutions and to faculty members themselves. Much has been written about academic capitalism's impacts on the research and (less so) educational activities of faculty. Very little consideration has been devoted to service.

It is clear in research and teaching that academic capitalism has impacted the daily work activities, expectations, and conditions of work for faculty. Indeed, it has changed the very meaning of faculty. What, then, of faculty's service work?

As with research and teaching, it is clear that, in some important regards, elements of previous and/or competing knowledge regimes continue in conceptions of service. The most prominent example of this is faculty's committee work. Across

all settings, and even across different segments of the faculty, committee work is both common and most commonly recognized as service.

In addition, it is evident that the most common forms of service continue to be focused on the organizations and professions in which faculty are situated, more than in the communities in which they are situated and constituencies they are serving. Faculty engage in service for their academic unit, university, and discipline. And many construct that work as segmented, distinct, and largely isolated from their research and teaching.

Nevertheless, a number of faculty adopt an integrated conception of service. They speak to ways in which that work intersects with and informs their research and/or instructional activity. For these faculty, service tends to be seen as more meaningful. And they tend to invest more time in service than do faculty with a segmented perspective.

Two other types of service work emerged from the data. Both involve partnerships and new circuits and networks of activity and knowledge production. One form, which we have called chartering, involves faculty establishing connections with private and public employers, by way of linking students (especially as graduates) and employers. Although such linkages certainly benefit the university and help to secure employment for students, the direct, short-term aim is not revenue generation. By contrast, a second form of service is entrepreneurship, in which revenue generation is foregrounded in the brokering activities of faculty. That aspect of service/outreach work, however, tends to be promoted less by faculty than by institutions, through new, permanent, interstitial units growing in number and staffing. In addition, various categories of non-tenure-track, contingent faculty are engaged in such entrepreneurial "service/outreach" activity. Both of these patterns speak to the prominence of academic capitalism organizationally, as opposed to the Mode 2 conception of Gibbons and colleagues. And both augur the emergence of very different forms of service with different, and ironically in some ways, narrower ranges of beneficiaries than before, in a global economy.

9.6 Implications for Research and Practice

The findings of this study have implications on how faculty service is conceptualized and enacted. In regards to future research, faculty service is an underinvestigated area of faculty work in comparison to research and teaching. More studies that can further illuminate the many different conceptions of service that are held by faculty are necessary to clarify how faculty might be recognized and rewarded for such duties. While faculty service in relation to their professional associations and field, such as serving on editorial boards and elected positions, may heighten one's personal reputation and expand his/her networks, service in relation to their local community and department may have less professional payoffs but may be equally, if not more, impactful. Nevertheless, the latter aspects

of service can be more arguably tied to the university's service function and, thus, deserves recognition.

As faculty appear to be engaged in private partnerships more than ever before, entrepreneurial activities are now a significant and growing area of faculty service. Whether consulting, for example, is service remains debatable, but more research should clarify what exactly constitutes service and whether service should include anything that does not relate to research or teaching. The question of whether a fourth category of faculty work related to entrepreneurialism and fundraising might be considered.

Our research found that faculty who engaged in service that was directly related to their research and/or teaching found more value in their work compared to those who identified their service as being unrelated to their professional agendas. While serving on university and departmental committees are necessary for shared governance within the institution, encouraging faculty to identify greater connections between their intellectual agendas and university work is recommended. While making such linkages might be easier in some fields than in others, all faculty should be encouraged to participate in at least some service that they not only find interesting, but also meaningful.

Perhaps the areas of service that were not only scant but may be most threatened are local outreach and other nonprofitable service activities. We recommend identifying ways that faculty can be encouraged and rewarded for their service to assisting disadvantaged communities and other groups that depend on volunteerism to sustain their operations. Sharing existing faculty expertise and partnering with administrators are two possible ways that faculty can be involved without simply adding more to their already demanding workloads.

In conclusion, the future of the university's role in societal development will highly depend on how faculty service is conceptualized. At its current trend, private agendas and entrepreneurial interests will largely shape faculty service, with diminishing attention to local, nonprofitable needs. While faculty service is linked to research and teaching, it's important to acknowledge that research and teaching are also increasingly market driven. Thus, close attention must be paid to the university's distinctive service contributions, particularly for local groups that may be benefiting less as universities become increasingly entrepreneurial.

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Part III
The University as a Social System
at the Crossroads

Chapter 10
Possible Futures for Higher Education: Challenges for Higher Education Research

Ulrich Teichler

10.1 Introduction

Higher education research, as a rule, informs both the small academic community as well as the interested policymakers and practitioners about the recent past of higher education. Research has a wealth of methods to observe what has happened, but it takes time to design a research project, to get the necessary resources, to collect information, to analyze and interpret the findings, and to disseminate them through publications and other means. Researchers are accustomed to reporting about the findings of some years earlier, as if they were just recent, but they would like to be even faster in acquiring and spreading knowledge. A timespan between an event and a systematic account of it cannot be avoided, but the author is convinced that reflection about possible futures of higher education will eventually lead to more timely research and reporting of the research results.

Over the years, the author has made three major efforts to consider the possible futures of higher education and the tasks of higher education research. As there was a timespan of about a decade between these activities, a short account also might illustrate a change of approaches and themes.

The first activity of that kind was called "The Changing Nature of Higher Education in Western Europe." It was an external expert presentation at the first meeting between representatives of the first post-Apartheid government and their experts with the leaders of the South African universities in 1994 held in order to discuss "The Future Role of Universities." The following themes were addressed by the author:

- The philosophies of higher education,
- Patterns of the higher education system, and
- Access and admission to higher education.

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It was pointed out that a bewildering variety of higher education systems in Europe hardly allowed a country willing to undertake major reforms to note a clear line of converging trends in advanced countries. Rather, higher education policies have to take into account three perspectives and find an appropriate solution: (a) to choose a functional perspective and ask whether some developments are most timely, modern, and successful, and can be viewed as a model worldwide; (b) to accept an idiosyncratic view, according to which specific philosophies and contexts of higher education in a given country might be indispensible and a strength in its own right; (c) to take a political view according to which one does not want to be programmed by tradition or fashion, but, rather, does want to shape higher education deliberately according to a specific vision of what is desirable. The starting place is the choosing of a specific balance between these perspectives (Teichler 1996a).

The second presentation was named "The Future of Higher Education and the Future of Higher Education Research," which was a keynote speech at the 24th Annual Forum of the European Association for Institutional Research (EAIR) held in Prague (Czech Republic) in June 2002. The European association, which had chosen the US term "institutional research," even though policy-related research of that kind within institutions of higher education had not developed in Europe, was an appropriate arena for the discussion of futures of realities and the future of research.

The major themes addressed in the 2002 presentation played a substantial role in subsequent years:

- Expansion of higher education and its possible consequences,
- Diversification,
- System steering and institutional management, and
- Professionalization in higher education.

The author argued that future-conscious higher education research is needed in order to anticipate future problems and themes of debates, and start generating knowledge relatively early. In this way, one would address themes already being publicly debated, but would also seek to identify issues not frequently discussed but likely to be major issues in the future (Teichler 2003).

Finally, two presentations were made in 2010 and 2011: as a keynote speaker at a conference of the Consortium of Higher Education Researcher (CHERIF) in cooperation with the association of academics at Finnish Universities of Applied Sciences (KEVER) held in Helsinki (Finland) and at the 2011 forum of the Southern African Association for Institutional Research (SAAIR) in Cape Town (South Africa). In these presentations, the need for higher education research to reflect on the future of research planning was expressed (Teichler 2011, 2013). The subsequent analysis draws substantially from these recent presentations.

10.2 The Need for Higher Education Research to Identify Problems in Advance

Reflection on the future of higher education is a customary activity of *higher education researchers*—often among themselves and often in interaction with policymakers and practitioners in this area. This might come as a surprise because research is strong in analyzing past and, at most, present, but only speculative when addressing the future. It is worth considering the importance of reflecting on the future before we embark in that area.

Obviously, higher education research often embarks on reflections on the future of higher education. In the dialogue with higher education policy and practice, higher education research, as a rule, plays the following roles: (a) problem identification and explanation, (b) consultancy and advice in decision-making processes, (c) regular monitoring of developments in higher education, and (d) evaluation of the impact of decisions taken and measures implemented by the decision-makers in the higher education system. In playing these roles, *higher education research primarily pays attention to the recent past*.

But higher education research has to reflect on the possible future directions of the discipline and its context prior to the public's awareness of the issues, because research needs some time to identify the problems and their causes. Only if higher education research starts doing this *well in advance of public awareness* will it be prepared for the moment when public debate eventually looms (cf. the overviews on higher education research in Clark and Neave 1992; Teichler 1996b; Teichler and Sadlak 2000; Begg 2003; Meek et al. 2009).

Moreover, higher education research has to be forward-looking, because *higher education shapes the future life and the future activities* of university graduates in general, as well as of those persons who will be teaching and conducting research within higher education in the coming decades. As the graduates will be professionally active for three to four decades and as it takes at least a decade to reform curricula and teach the first generation according to those new curricula, we might argue that higher education research should ideally be in the position of looking ahead about 50 years. But we know that the prediction of the future tends to be targeted at shorter periods and become fuzzier if long periods are addressed. We believe, therefore, that looking ahead even two decades is already quite courageous.

In sum, higher education research has to be forward-looking in order to be socially relevant. The author has pointed out, on various occasions, that research on higher education varies dramatically in its relationship between systematic academic knowledge and practice (Teichler 1996b, 2005). This notwithstanding, not only institutional research and policy research in higher education, which might be directly linked to decision-makers, but also academically based higher education research enjoying academic freedom is expected to be socially relevant: the latter is not established at universities as part of the historically grown academic spectrum (as, for example, philosophy and history), but, as a rule, in relatively new units created for the purpose of bridging theory and practice.

10.3   Examples of Forward-Looking Activities Undertaken by Higher Education Researchers

Addressing potential future developments of higher education is not a recent phenomenon. Many years ago, a higher education researcher formulated a long-term model of the development of higher education that was cited more often in the field than any other concept put forward by higher education researchers. In the late 1960s and early 1970s, Martin Trow, social scientist at the University of California at Berkeley (USA), proposed the model of "elite higher education," "mass higher education," and "universal higher education" (Trow 1974; see Burrage 2010). He argued that the typical features of "elite higher education"—a close link between teaching and research, a strong theoretical emphasis, a consistently high intellectual caliber, and a preparation for top positions in society—are likely to shape higher education as long as it serves at most 15 % of the respective age group. When expansion moves beyond 15 %, "mass higher education" will emerge as a second sector, thereby serving the talents, motives, and career prospects of the additional students in a targeted way, while protecting the functions of elite education. When, eventually, student enrolment surpasses 50 %, a third sector of "universal higher education" will emerge alongside "elite higher education" and "mass higher education." Trow formulated his ideas at a time when only a few countries had surpassed 15 % and most economically advanced countries still had enrolment rates below 15 %. And he remained cautious in delineating the differences between "mass higher education" and "universal higher education," because the latter seemed to belong to such a distant future.

It should be noted that Trow has often been misunderstood. He did not talk about a "mass higher education era" because he did not consider "mass higher education" to be a substitute for "elite higher education," but, rather, to become a second sector with a specific character which also served the preservation of the "elite higher education." He expected an increasing diversity of higher education systems in the process of expansion.

Various higher education researchers from European countries cooperated from 2005 to 2008 in a project called "Higher Education Looking Forward" *(HELF)*. The *European Science Foundation* (*ESF*), an association of major national research promotion agencies and national coordinating agencies of public research institutes in various European countries, had concluded that "forward-look" projects are a promising way to explore the possible futures of technology and society, as well as possible futures of research in the respective areas. In 2005, the ESF invited scholars in the areas of humanities and social sciences, for the second time, to suggest a priority area for a forward-look project. Higher education researchers received grants for a project on higher education. The results of the project were published in the special issue "The future of higher education and the future of higher education research" of the journal Higher Education in September 2008 (Brennan and Teichler 2008; cf. also Brennan et al. 2008). The European higher education researchers raised the following salient future issues:

- What concepts of "knowledge society" will shape the future discussions, and what kind of developments are to be expected in society with respect to the utilization of knowledge as compared to internal knowledge developments in the system of higher education and research?
- How will higher education in the process of expansion change its role in relation to social equity and related notions of citizenship, social justice, social cohesion, and meritocracy? Will there be an increasing divide between winners and losers of higher education expansion, or will efforts succeed in reducing social inequities with the help of education?
- Will higher education move towards more comprehensive functions both by widening the activities beyond knowledge production and dissemination, as the discussions about the "third mission" of higher education suggest, and by including more "stakeholders" into the decision-making processes, or will higher education consider such movements as a "mission overload?"
- How will the steering of the higher education system change as the consequence of future challenges: will governments play an even stronger role than in the past, will there be a coexistence of strong governmental and university strategies, will market forces play a stronger role, will autonomy of institutions of higher education increase, or will another mix of steering occur?
- What will be the future structure of the higher education system? Will national higher education systems in the process of expansion become extremely stratified, as, for example, the discussion about "world-class universities" and rankings suggest, or do we note moves towards a relatively "flat hierarchy" and towards a variety of "profiles" of the individual universities?

In response to the HELF project, the ESF decided to fund, in cooperation with various national research promotion agencies, a programme for the support of higher education under the name "Higher Education and Social Change in Europe" (EuroHESC), whereby research consortia were to be funded in the period 2009–2012 on higher education and knowledge society, governance in higher education, and on the academic profession. So, the future scenarios turned out to be a successful start for research in that area.

The Organisation for Economic Co-operation and Development (OECD), the major intergovernmental organization of economically advanced countries, often starts "think tank" projects in which representatives of governments, scholars, and other experts cooperate in analyzing the current situation and in discussing possible futures. In the project "Higher Education to 2030" (see OECD 2008, 2010), experts analyzed and developed future scenarios about three themes: "demography," "technology," and "globalization," i.e., contextual changes for higher education. In addition, the OECD discussed changes of governance and management in higher education as ways of handling such challenges; in this framework, the OECD (2006) presented "four future scenarios for higher education": (a) "open networking," (b) "serving local communities," (c) "new public management," and (d) "higher education inc." The OECD study, obviously, suggests that the *configuration of*

governance and management has an enormous impact on the structure and function of higher education.

Policymakers and practitioners have been quite active in recent years in reflecting on the future of higher education and in setting targets for future developments. In this context, they encourage "experts," including higher education researchers, to participate in those reflections and in examining the impact of such future-oriented policies. This was visible, for example, in the latter half of the 1990s, when many conferences, special issues of journals or books comprising a collection of essays had titles such as "Higher education in the 21st century." This also played a role—to take another example—in supranational higher education policies in Europe in the late 1990s. The ministers in charge of higher education in most European countries signing the Bologna Declaration in 1999 aimed to establish similar patterns of study program and degrees across Europe, thereby declaring that a "European Higher Education Area" should be realized by 2010. When it became clear in 2009 that some of the aims linked to this structural reform were likely to be largely achieved and the majority of the aims to a lesser extent (see Kehm et al. 2009; CHEPS et al. 2010; Curaj et al. 2012), the ministers set even higher targets for 2020 as regards one of the major objectives, namely, the increase of intra-European mobility. Similarly, in 2000, the governments collaborating in the framework of the European Union called for a substantial increase in the public and private expenditures on research up to 2010—their target date for a "European Research Area" to be realized.

10.4   Towards Interesting and Meaningful Future Scenarios

Futurology is often viewed as boring and too focused on the present situation. This is due to the fact that visions of the future are often overwhelmed by the current scenario and by current trends. Future scenarios often unconsciously assume that we are at the "end of history" and can, at best, expect a trend which is an extrapolation of the past. When we look back to the beginning of industrialization, we note forecasts that an enormous increase of horses would be needed to cope with the growing demand for transportation; actually, other "horse powers" emerged instead, and horses became a small segment in the leisure world in the economically advanced countries. Do we fall in the same trap now in predicting that universities in the future will have larger and larger administrations in order to cope with more and more demanding managerial tasks?

Obviously, we can overcome this predictable approach to the future by considering various possible models of the relationships between past, present, and future. And there is no need to be confined to a limited range of models. In sorting the logic of the multitude of arguments about the future of higher education, we can establish quite a list of varied models of scenarios:

- The "continuity of trends" and "consolidation of recent policies and measures" scenarios: in the future, we are likely to have somewhat more of those phenomena which have recently showed a growth trend;
- The "breakthrough" scenarios: we succeed in counteracting problems in the past by convincing interventions that, eventually, will lead to a bright future;
- The "Great Expectations and Mixed Performance" (Cerych and Sabatier 1986) or "the glass is half empty and half full" scenarios: any efforts at improvements, such as the most recent ones, will have a certain degree of success, but, as a rule, do not achieve their ambitious goals;
- The "past was beautiful" and "back to the past" scenarios: recent changes and reforms have gone in a wrong direction; returning to the past will help to reconsolidate higher education;
- The "changing fashions" or "circular developments" scenarios: certain issues are in the forefront of public discourse for a period; they tend to be forgotten and substituted by old or new themes, after some changes have been made which cannot be viewed as the real cure of the problem;
- The "endemic crisis" scenarios: each higher education reform creates its typical problems; for example, if one tries to strengthen the research quality through indicator-based rewards, one creates both a weakening of teaching and biases of research according to the indicators chosen; therefore, the critical observer can easily predict the next crisis or crises programmed by current measures;
- The "completely new," "innovation," and "surprise" scenarios.

This list might be incomplete, but it might remind us that we have at hand a repertoire of various models which we can employ when reflecting on possible future states.

It makes sense to embark on a discussion of possible future development by *starting off from recent trends and issues* in order to ask what their "fate" will be in the long run. In the first decade of the twenty-first century, the following trends and issues are most frequently discussed:

1. Expansion and growth of higher education,
2. A growing expectation of the visible relevance of higher education ("knowledge society/economy"), possibly comprising a pressure for increased instrumental approaches in teaching and learning (cf. the discussion in Teichler 2009),
3. A growing multi-actor decision-making setting (rather than a "managerial" university),
4. Increasing assessment activities (evaluation, accreditation, indicators, rankings, etc.) and assessment-based decision-making, and, in this context, a growing "output," "outcome," "impact awareness,"
5. A growing "professionalization" of the actors in the higher education system (managers, higher education professionals, and scholars),
6. A trend towards internationalization and, possibly,
7. A growing incorporation of higher education into a system of lifelong learning.

For higher education researchers, it is helpful to *consider future developments in cooperation with actors* of the higher education system as well, because other actors and experts can enrich the scope of future scenarios. As will be discussed below, higher education researchers might put emphasis also on those kinds of future scenarios which the policymakers and practitioners are less likely to mobilize.

It seems to be preferable as well *not to concentrate completely on a single dimension of future development*. For example, one cannot understand issues of the structural diversity of higher education without addressing issues of the knowledge system, curricula, and work tasks. One cannot analyze issues of knowledge and curricula without taking into consideration the views and activities of the academic profession and of the students. Analyses of governance remain isolated phenomena if they are not linked with analyses of the function of higher education (see the lists of key dimensions of higher education in Teichler 1996b; Tight 2003).

In referring to the abovementioned possible scenarios, the author suggests that higher education researchers should initiate *future scenarios with a critical and compensatory thrust*. We know that the policy actors and practitioners in higher education are inclined to consider "trends and consolidation," "half full and half empty," and "back to the past" scenarios. As a counterbalance, higher education researchers should concentrate on endemic tensions as well as on just recently emerging and possibly surprising perspectives.

10.5 Quantitative-Structural Scenarios

10.5.1 *Expansion of Student Enrolment*

When we discussed trends in higher education in the past, we most frequently referred to a certain phenomenon: the expansion of higher education in terms of student enrolment. Many economically advanced countries experienced a substantial increase in the 1960s and early 1970s; in some countries, however, there was a stagnation of enrolment figures during the 1970s as well during the 1980s. Since about the mid-1980s, however, expansion has been seen again in the majority of economically advanced countries.

In talking about the expansion of higher education, we need some precision in regards to definitions in order to choose appropriate data:

- First, we have to define what we mean by "higher education," and we have to decide whether we want to opt for this or other terms. For example, as already pointed out, Martin Trow kept the term "higher education" when he talked about the stages of elite, mass, and universal higher education. In contrast, the most popular term in the public debate has been, for a long time, "university education," which referred in Europe to institutions equally serving teaching and research. Since about the 1960s, the term "higher education" has dominated

the international discourse; it comprises institutions with study program of a certain theoretical ambition, irrespective of whether the program are closely linked to certain professions or not (this corresponds to ISCED 5A in the terms of UNESCO). Since the 1980s, various international organizations have advocated using the term "tertiary education" (e.g., OECD 1998), whereby other tertiary education program (ISCED 5B) are—according to the UNESCO definition—"generally more practical/technical/occupationally specific" than higher education program.

- Second, we have to decide how to measure expansion. We note mostly the frequent calculations of rates. In comparative analyses, one often notes three rates: (a) entry rates or new entrant students rates of the respective age group, (b) enrolment or participation rates defined as the number of students divided by the population of the typical enrolment age, e.g., 20–24 years, and (c) graduation rates of the respective age groups (see, for example, OECD 2009; UNESCO 2009).

In combining Trow's stages with the preference of international organizations for tertiary education, a look at enrolment rates shows that *mass tertiary education* had already been reached in the European and North American countries around 1960 and *universal tertiary education* in the early 1990s. In Latin America, mass tertiary education was reached in the 1980s and universal tertiary education can be expected around 2015, if the trend continues. In East Asia and the Pacific, mass tertiary education was reached around the year 2000, and universal higher education is expected to occur approximately one decade later than in Latin America. In Africa, these stages are likely to be reached substantially later. Clearly, the stages of expansion vary dramatically in the various regions of the world.

The OECD (1998) predicted in the late 1990s that tertiary education entry rates of about three-quarters will be customary in the twenty-first century in economically advanced countries. Thus, *those not studying in tertiary education eventually will be a residual, obviously disadvantaged minority in society*. Most experts assume that the expansion of higher education will continue in the future. Two key issues are addressed most frequently in discussions about the future expansion of higher education: how will the relationship between higher education and the world of work change? How will the configuration of the higher education system change?

10.5.2   Higher Education and the World of Work

In the 1960s and 1970s, a lively debate about the *relationships between higher education and the world of work* emerged in economically advanced countries in the wake of substantial higher education expansion, which was *contradictory* from the beginning and remained contradictory until now:

- On the one hand, the expansion of higher education is depicted as beneficial: those with the highest level of educational attainment continue to be highly rewarded economically and socially, and there is a clear positive correlation among countries between graduation rates and economic success.
- On the other hand, concern has increased about "mismatch," "overeducation," and "inappropriate employment": that an increasing number of graduates end up in positions in employment that are lower than one would consider suitable for a higher or tertiary education graduate.

Most *economists* in economically advanced countries explaining the relationships between the expansion of higher education and graduate employment believe in the existence of *strong mechanisms supporting a balance* between the demand for a qualified workforce and the supply of graduates. Growing demand for an increasing number of highly qualified persons was seen as a pulling factor for the expansion of higher education. If supply surpasses demand, a decline of income advantage was likely to occur—and as a consequence, a reduction of the willingness to study and, thus, a decline of entry rates. And if "mismatches" on the labor market turn out to be persistent, causes for market imbalances are sought and recommendations made to counteract those imbalances.

Most *sociologists*, however, have argued that *an imbalance on the graduate labor market is endemic in the long run*. I have explained it in the following way (Teichler 2009): the status of a person in a traditional society was handed down by parents and determined by gender, while education was, at most, an attribute for some socially select groups. With the advent of industrialization, a new relationship between learning, competence, and work on the one hand and status distribution developed. Social advancement was promised to those successfully enhancing their competence, and the social inequality was justified as mirroring the varying competencies and the achievements of the individuals. The more open that educational success becomes for almost everyone and the more likely educational achievement is rewarded in society, the more persons will strive for success in higher education, even if the distinctions between education levels and the positions in employment contract. Consequently, the supply of highly educated persons beyond demand results. A stagnation of the quantitative development of higher education would not even have been likely if there was a stagnation of typical graduate jobs.

However, this *supply beyond demand has not caused such serious problems for the graduates* in recent decades, as some warning of a so-called overeducation claimed—at least not in economically advanced countries. Rather, additional graduates mostly found mid-level positions where their competencies were generally useful. A substantial proportion of graduates contributed actively to an "upgrading" of these positions, both in status and in the "enrichment" of the work tasks.

There are no signs that this contradictory situation will disappear in the foreseeable future, nor signs of a move towards a crisis. It would be of interest, however, and obviously an important task of higher education research to observe the

dominant trends of "adaptation" towards such an endemic high supply of graduates. In the past, we have often observed different modes of complex adaptations occurring concurrently, but, certainly, their composition could change in the future:

- "Overcompetition": The shortage of attractive occupational rewards does not discourage studying, but, on the contrary, can reinforce competition for scarce high-level positions. In such a case, the "rat race" for success might have negative consequences on the socialization of learners, on the substance of learning, and the life curves of intensive learning and recovery from exhaustion.
- "Relevance of minute educational differences": The more persons are highly educated, the more marginal differences in the reputation of higher education institutions or in the achievement of students may go in determining occupational differences. This can lead to an increasingly vertical stratification of the higher education system in the view of the persons involved, even though the differences might be small in substance, and to increased imitation behavior on the part of the universities who are not at the top of the hierarchy ("academic drift").
- "Increase of adaptive behavior": Students might become so preoccupied with their desire for professional success that they seek any opportunity to be successful. This may lead to their adapting themselves to the assumed wishes of their employers that any kind of creative, innovative, and critical thinking gets lost. Some experts argue that the frequent use of such words as "employability" indicate a "utilitarian drift" in higher education.
- "Revival of non-meritocratic criteria": The more similar the educational achievements of graduates become in the process of higher education expansion, the more important become those criteria for occupational success—ironically—that are not achieved, e.g., status and power of the parents, behavioral style, biological differences, etc.
- "Collapse of the reward system": The smaller the actual differences in educational achievement become, the smaller the rewards might be at the end of such a process. Finally, differences of income and status might be viewed as so small that the effort for educational success is no longer viewed as worthwhile. This might lead to substantial losses of learner motivation and diminished quality in higher education.
- "Dominance of postindustrial values": The more education expands beyond the immediate demands, the more graduates might be free to harbor "intrinsic motives," as well as motives beyond economic success, e.g., societal change, a better environment, and improved occupation–life balance, etc.
- "Upgrading and job enrichment": The jobs themselves change as a consequence of the high competence of the job holders. They find ways to utilize their skills in jobs previously held by non-graduates, thus, contributing to a flattening of the hierarchy of the job pyramid as far as the substance of work is concerned.

These scenarios make it clear that old notions of "match" and "mismatch" on the labor market are constantly challenged. They also underscore that occupational

motives might change substantially over time. Most importantly, they draw our attention to the less privileged graduates from higher education: what is happening to the "mass" and "universal" graduates?

10.5.3 Diversity of Higher Education Systems and the Popularity of Rankings

In addressing the consequences of these trends and policies for the patterns of the national higher education systems, we come across a lively debate about the *diversity of higher education* (cf. Teichler 2007b). In this framework, most attention is paid to *vertical diversity*, i.e., the extent to which study programmes, disciplines, individual higher education institutions, or types of higher education institutions differ according to "quality," "reputation," and possible impact on the future career status (e.g., income and position) of graduates. As a result, perspectives might vary whether we move towards a flatter or a steeper vertical diversity:

- In looking at the overall educational system and the overall employment system, we might argue that, in the process of expansion, the gap of cognitive competence between the fifth decile and the second decile of an age group is certainly getting smaller, when the former moves from vocational training outside higher education towards a bachelor degree, while the latter moves from a bachelor degree to a master degree.
- In looking solely upon the higher education system, however, we might conclude that the motives, competencies, and job prospects of students become more vertically diverse in the process of higher education expansion.

In any event, *we cannot be surprised to note that smaller differences* than those of the major levels of educational attainment (graduating from higher education or embarking on employment with a secondary education background) *become increasingly more important* as determinants in the process of higher education expansion. For example, grades or "personality" might play a more important role in the job search. This has to be expected irrespective whether vertical diversity in higher education grows, remains stable, or declines. We might argue that one could expect a steeper symbolic vertical diversification of higher education – no matter whether actual quality differences grow, remain constant, or shrink.

In recent years, we observed a dramatic increase of so-called *rankings*, i.e., a growing number of publications comprising vertically sorted lists of universities—overall or according to specific disciplines. What had existed for decades in some East Asian countries and, to some extent, also in the USA, has spread globally in the last two decades, and much attention is now paid to global lists of "world-class universities" (cf. the overviews and critiques in Sadlak and Liu 2007; Marginson and van der Wende 2007; Kehm and Stensaker 2009; Shin et al. 2011).

It should be noted that the quantitative growth of such rankings is certainly not caused only by this tension between the dramatic expansion of higher education and less impressive increase of traditional graduates' jobs. We also note an increasing belief that privileged research resources should be concentrated within a few top universities. Moreover, there is an increasing trust in fierce competition as a source of quality in academia. Finally, the view is spreading that the "wealth of nations" might come to depend on successful competition in the race for top talent in research and elite occupational positions in general.

The producers of such rankings lists—journalists, consultants, and some higher education researchers—often *claim that they just care for transparency* and that this is useful for any "customer," for rational political decision-making in the support of higher education, and as an information basis for healthy competition among higher education institutions and scholars. A closer look, however, reveals that the producers and advocates of ranking are *missionaries of a specific and controversial concept—or we might say: ideology—of higher education*, according to which: (a) *vertical diversity is highly relevant*, while horizontal diversity—varied substantial profiles—is negligible, (b) a *steep vertical diversity* is beneficial for the overall quality of the higher education system, and (c) the *best talent and the highest resources should be clustered in a few universities*, because the quality of scholars, research units, and study program depend primarily on a *homogeneous institutional environment* and the *physical vicinity of highly talented peers*.

A glance at the publications of the rankings' proponents shows that they are—as a rule—typical representatives of the above-characterized *Zeitgeist*: the strong belief that the future of societies depends on the development of top knowledge and that fierce competition is a successful driver of academic quality.

There are good reasons for a *critique of the ideologies spread by the proponents of rankings*. A glance at countries with fierce competition for enhancing or preserving a rank shows that "overcompetition" undermines potential virtues of higher education. High local concentration of talent seems to be a carryover from a much earlier period, but seems to be outmoded in an age of worldwide virtual communication. Homogeneous academic environments are not necessarily the most creative ones. Academia and society need horizontal diversity in higher education nowadays more than ever before.

But what does this mean for higher education research? We could argue that the public dispute about the virtues and dangers of a steep vertical diversification of higher education reinforced by rankings is really an ideological war and that improved evidence with the help of higher education research would hardly have any impact; as a consequence, higher education research should focus its limited resources more strongly on issues of higher education where the actors are more likely to take evidence seriously. Or should higher education research *hope that good research might succeed in "undermining" highly ideological confrontations in the area of higher education?*

10.6 Functional Scenarios

Two "functional" themes—knowledge generation, preservation, and dissemination, as well as the role these activities play within and beyond higher education—are quite popular in debates about the future of higher education. First, there is discussion as to whether knowledge becomes more "utilitarian" and what such changes imply, and, second, what the meaning of the trend towards increasing internationalization of higher education means. The following discussion will be limited to these two themes.

10.6.1 A Continuous "Utilitarian Drift" of Higher Education?

Terms such as "work society," "achievement society," or "leisure society" suggest that a certain feature—in this, case work, achievement, or leisure—has become or is on the way to becoming the most central feature of society. The term "knowledge society" suggests that knowledge becomes highly important or even the major driving force in society. But there is a flip side to this: the more relevant knowledge becomes for society, the more higher education is *expected to demonstrate its relevance for society*, in this case, to produce knowledge which promises to be useful for society.

There are many voices complaining that the basic character of the university is getting lost, namely, the search for previously unknown knowledge and, thus, possibly for knowledge which we, only afterwards, can classify as useful, irrelevant, or even dangerous. We are told in the name of the "knowledge society" that *research* should be so much "finalized" to certain purposes that the "innovation" at the end of the process is more or less predictable from the outset. Research priorities attract money to research where economic growth seems to be the most likely outcome. Many advocates of the knowledge economy are proud that basic research might eventually trigger applied research and even lead to practical innovations such as a doubling of fuel injection in cars, a reduction in credit card cheating, and a more efficient way to identify explosives carried in or on the bodies of air passengers. However, research continues to be viewed as helpless vis-à-vis the big crises of mankind and nature.

Similarly, "employability" has become a catchphrase in Europe and elsewhere when we talk about reforms of study program. The term is misleading in various respects (cf. Teichler 2009). In labor market research and labor policies, "employability" calls for undertaking measures for those who can barely cope with organized work at all. Moreover, this term refers to the means of getting jobs, salaries, vacations, etc.—i.e., not to the relationships between curricula and work tasks. But the frequent use of the term is revealing: many universities draw the conclusion that they should do whatever they can do to maximize the future

employment opportunities of their students. If we listen to the most ardent advocates and the most pronounced critics, we note that they have a common understanding of the term: "employability" means that study programmes have to be subordinated to the presumed needs of the employment system. The author has argued that a term such as "professional relevance" of study would be more appropriate: such a term highlights the necessity of reflecting in curricula, teaching, and learning the likely consequences of study in the graduates' future work and other life spheres, but calls for an open search of solutions rather than hinting at the direction for solutions.

There is a third element of "utilitarian drift" in higher education. The strategies of the universities are expected to be driven by *competition*, and the students and academics are supposed to be increasingly steered by incentives and sanctions. The underlying ideal is that managers, academics, and students should behave like a "homo oeconomicus," an "economic animal," a "status seeker," or, in the language of David Riesman, as an "outer-directed personality." Intrinsic motivations might not completely fade away, but they seem to be viewed as secondary these days.

In contrast to these critics of a loss of a traditional character of the university, *we could consider the prevailing trends as natural*. If systematic knowledge gets increasingly relevant for society and economy, as the terms "knowledge society" and "knowledge economy" suggest, we should expect the emergence of strategies to make systematic knowledge even more useful than just relying on the trend. If a study programme no longer serves only the managerial and professional ranks of the top $10-15$ %, professional preparation is more often viewed as primarily serving professional routine rather than a skeptical questioning of the usual rules and tools. And if economic progress is viewed as resting increasingly on useful knowledge, academics resembling "economic animals" will be considered to be the most suitable species.

As a consequence, a "utilitarian drift" in higher education can be viewed as irreversible. The question remains, however, as to whether this is a trend which destroys anything that does not fit into the mainstream. We could imagine that there will be some "Humboldtian-free zones" for research without predetermined ends in the otherwise "finalized" research world. And we could imagine that, in a process of diversification, some universities proudly present their mission to *socialize students for both proper professional functioning according to the usual rules and tools, and to be skeptics and critics*. Some universities might be proud to help their students to become proactive members of society or "change agents."

10.6.2 *Internationalization of Higher Education*

Higher education is, in many respects, not constrained by borders. The knowledge system in various disciplines is completely or partially universal. Search for new knowledge all over the globe is seen as a "must" in the academic world. The international reputation of academics is usually seen as a good indicator of

academic quality. And many scholars adhere to cosmopolitan values. However, the regulatory systems shaping the governance of higher education, the curricula and degrees, the academic careers, the funding of higher education, and many other features of higher education tend to be national.

The internationalization of higher education seems to be a matter of procedure in some respects, but has remained exceptional in others. International globe-trotting for research-related purposes expanded with the affordability of national and international air flights. An increasing number of publications coauthored by academics from more than one country suggests that international research cooperation is on the increase. Growing numbers of internationally mobile students are often referred to as the most obvious indicator of the internationalization of higher education. But, for several decades, the growth in the number of foreign students has paralleled the overall growth of student numbers, with the rate of foreign students remaining fairly constant at about 2 %. The international professional mobility of academics is by no means rare, but the mobility rates of academics have remained more uneven in economically advanced countries than has international student mobility. Finally, temporary international mobility for teaching purposes remains a marginal phenomenon (cf. the overviews in de Wit 2002; Altbach 2007; Teekens and de Wit 2007; Teichler 2007a; Knight 2008).

A close look reveals that the internationalization of higher education might be held together organizationally by international offices, as well as possibly by international vice presidents and international committees within universities, but it is shaped by two contrasting principles. On the one hand, we note a wide arena of *vertical knowledge transfer*. One seeks newer and qualitatively superior knowledge abroad, or knowledge is exported from the top to the less favorable layers of higher education in other parts of the world. Student "degree mobility," i.e., mobility for a whole study program, from low-income and medium-income countries to advanced countries, as well as "brain drain" of academics, is the most visible phenomena of this principle; adaption to the advanced country is expected in order to maximize knowledge acquisition. On the other hand, there is the arena of *horizontal mobility and cooperation*. Learning from contrast by partners of equal terms is viewed as a source of academic creativity. Schemes of short-term student mobility (e.g., ERASMUS), junior researchers mobility (e.g., Marie Curie), and the cooperation of researchers from different countries of the European Union are the most visible flagships of this principle.

The Bologna Process in Europe is a typical example of this coexistence of activities and of the division of principles: convergent systems of the study programmes and degrees ought to be established in order to increase the attractiveness of higher education in Europe for students from other parts of the world (inward mobility primarily for degree study) and in order to facilitate intra-European student mobility (reciprocal mobility of a semester or a year). In contrast, some Anglo-Saxon countries put prime emphasis on the former principle, i.e., the combination of "knowledge export" and "people import."

"Internationalization" has been a theme in the public discourse in recent years, by and large viewed favorably. Moreover, we note that there are more future

predictions in existence regarding internationalization than regarding other key issues of higher education. A future growth is often predicted, notably of student mobility from middle-income countries to advanced countries.

But there are other factors which might sound a note of caution. The more "virtual mobility" expands and the more curricula take care of "internationalization at home," the less the need might be felt for "physical mobility," which can be viewed as a relatively primitive and costly mode of knowledge transfer. The value of "learning from contrast" might lose its importance, because daily life internationalizes in more or less every respect and because national higher education systems converge as far as the substance of teaching, learning, and research are concerned. Further, the international openness of the academic system might decline the more universities are driven by "knowledge economy" imperatives. Finally, the future of the internationalization of higher education will be strongly influenced by the worldwide political pattern: do we move towards "globalization," a "global village," increasing national competition for international influence or even hegemony, or towards increasing international conflicts?

10.7   Organizational Scenarios

There are two organizational themes that have been on the agenda in recent years and which can be expected to play a role in the future. These are the systems of governance and decision-making, and the systems of assessment of the processes and results of research and teaching. Although there are some others which might play an important role, e.g., the professionalization in higher education and the funding of higher education, the subsequent discussion will focus on these two themes.

10.7.1   Multi-actor Decision-Making

In previous decades, there have been many *attempts to find the best model of governance and decision-making*. Although professors were likely to claim that a university based on academic freedom in the pursuit of knowledge and collegial decision-making would be the best, one could note an erosion of trust as regards to the collegial university. Governmental planning and decision-making experienced a revival in the process of the expansion of higher education, but, soon, a crisis of trust with regards to governmental planning emerged. In the 1960s and 1970s, some economically advanced countries established participatory models of decision-making, which had already existed for some time in Latin American universities, but this model faced a crisis as well and a loss of public trust. This would also adequately summarize the experiences in Europe up to the 1980s.

The American higher education researcher Burton Clark (1983) depicted higher education decision-making differently in the 1980s. According to his "triangle of coordination," the state, the market, and the "academic oligarchy" were the main powers. As an American, he took the power of the university president so much for granted, that he even did not name it as the fourth corner in this context.

In the 1990s, calls were widespread for concurrent simplification and efficiency gains in the management of higher education. No matter whether terms such as "new public management (NPM)" or the "managerial university" are preferred, clearer patterns of responsibilities and a greater power of key actors were longed for.

One does not have to be a prophet, however, to predict that the crisis of trust in the *managerial power* will be equally visible as soon as the prior crises of trust in the preceding decades as regards to the predecessor model. First, more power does not guarantee more creativity about the future of higher education, Second, we have not really moved towards less complex settings of coordination, but, on the contrary, to more complex settings—in the language of Clark, towards a *heptagon or octagon of coordination*, where, additionally, managers, participatory actors, external stakeholders, and boards have come into play. Moreover, various actors try to be players three times: as members of collegial or participatory modes, as citizens through governmental influence, and as "stakeholders" putting their stamp on higher education.

Given the low predictability of quality and innovation in higher education and the growing relevance of systematic knowledge for society, as the terms "knowledge society" and "knowledge economy" suggest, one should not be surprised to find a continuous substitution of one fashion of "optimal steering" of higher education by the next. What will be the next model? What will it promise? And why might it be short-lived again?

10.7.2 *Increasing Assessment Activities*

When, in the mid-1980s, a national *evaluation system* of study program was introduced in the Netherlands, many experts believed that this could be a convincing model for improvement through reflection. The combination of self-reporting and peer review site visits suggested a thorough but feasible procedure. The emphasis on advice for improvement combined with a relatively soft control function seemed to serve the reflective university. And an "evaluation culture" seemed to be acceptable in such a framework, i.e., a permanent reflection not only of the subject matter on the part of the academics, but also on the potential effects of one's activities. This was certainly a parting from the Humboldtian idea, i.e., the expectation that the academics' concentration on the subject matter itself would yield the best results, but the new type of the reflective academic and of the reflective university was widely viewed as compatible with the traditional missions of the universities.

In the mean time, universities are *flooded with varied assessment activities* (cf. the overview in Cavalli 2007). Already before the first systematic evaluation systems were established, the work of the academics was assessed frequently if they wanted to be professionally mobile, to have research grants, or to publish their research findings in prestigious publication outlets. Evaluation was a step further from occasional assessment, mostly initiated by the persons themselves who ought to be assessed, to periodic (regular timespan), systematic (based on a publicly stated methodology), and comprehensive (covering all persons, program, or institutions) assessment.

In recent years, there has been a *multiplication of systematic evaluations*: research evaluations, institutional evaluations, internationalization evaluations, accreditations, audits, performance assessment of staff as a basis of promotion, and resource allocation, etc. Second, we note the enormous *spread of "Mickey Mouse" assessments*, i.e., indicator-based funding, "university rankings," etc. The latter are not only shocking as far as efforts of measuring the highest academic quality in such a superficial way are concerned, but they are also closely linked to either subversive or outspoken intentions to change the character of higher education, as has been pointed out above, e.g., to create a more steeply vertical diversity of the higher education system and to penalize high-quality academics who are not located at the famous universities.

It is difficult to imagine that these assessment activities will persist in the future, because they *absorb so many resources*. The extremely simple measurement of academic achievement with indicators and rankings has popular appeal in that it seemingly uncovers the usually hidden quality gaps and is so much out of the control of those playing responsible roles in the higher education system that its persistence seems likely; yet, one cannot imagine that such measures survive in the long run as legitimate tools for steering sophisticated knowledge production.

Rather than indicating future scenarios of assessment, we have chosen to formulate a few questions:

- Is the loss of working time devoted to teaching and research as a consequence of the increase of time bound by reporting for accountability, applications, reporting for being evaluated, evaluating others, etc. compensated by the corresponding increase of productivity, or is academic productivity increasingly undermined by an assessment inflation?
- How does higher education cope with the dramatic dichotomy of precision and accuracy in our search for truth within the individual discipline on the one hand and, on the other, the relatively primitive measures of quality assessment in higher education and research?
- Are assessment and incentive measures successful in fostering "quality," or do they promote "overhomogeneous" aims and criteria?
- What safeguards "healthy competition," and what leads to "destructive competition?"
- Will the faking of research results and the faking of statistics and reports on higher education remain acceptable, or will it become so endemic that we have to multiply the measures of control of the research and the independent data collection?

Certainly, the wave of evaluation and indicator construction has caused a major change which might be called *a growing "output," "outcome," or "impact" awareness*. One no longer believes in the truth of "just do it" leading to creativity. Rather, an evaluation culture has emerged. Academics can no longer exclusively concentrate on the substance matter of academic work, but we also reflect concurrently: What do I do? Why do I do it in that way? What is the expected consequence? Could I improve it? One cannot imagine that these features of an evaluation culture will disappear in the future.

10.8   Concluding Observations

Higher education research is a very peculiar kind of research. It examines *the views, the activities, and the work context of highly intelligent and reflective persons*. Many of these persons—scholars, students, as well as administrators and policymakers in this domain—have very elaborate actors' theories. Many are convinced that they know the problems they are exposed to, that they understand the causes of the problems, and that they are in the position to develop and pursue concepts for improvement. Not surprisingly, the high level of intelligence and reflections reinforces their views that they "know"—and, thus, might not need higher education research.

Higher education research is *very successful in calling into question and demystifying the actors' theories in higher education*. Therefore, higher education research is often perceived as a threat by the actors in the higher education system—even if some of them pay lip service to the claim that evidence-based policies and strategies in higher education would be desirable.

Higher education research is expected to be relevant, i.e., to provide analyses that are eventually helpful for improvement. But higher education research—as other fields of behavioral and social research as well—is most successful in calling into question the appropriateness of the theories, while ideas for improvement might be inspired but seldom deducted from analysis. *Higher education researchers who work in the academic sphere* can survive this state of affairs, because they do not necessarily have to draw practical solutions. However, many higher education researchers tend to draw practical solutions which cannot be deducted from their analyses. The analytical work undertaken by *institutional researchers* is more closely linked to decision-making; they might even be tempted to emphasize the immediate practical value of higher education research, thus, "selling" the certainties higher education research delivers and hiding the uncertainties caused by the deconstruction of many actors' theories.

Certainly, it is helpful for the quality of the analytical work of academically based higher education researchers, and even more so for the work of institutional researchers, if they are freed occasionally from the pressure to transform analytical insights immediately into improved solutions. *Future scenarios* are a good domain for this purpose: nobody would expect future scenarios to deliver perfect analyses

and perfect practical answers, but future scenarios can be *stimulating as well improving the conceptual basis of analyses and to increase the fantasy needed in the search for improvements in higher education*. Future scenarios make it easier to accept the fact that in-depth knowledge, as a rule, raises even more questions than it provides responses, and that researchers, who try to flee into the havens of simplistic knowledge in order to have more responses than questions, might be the wrong advisors for efforts towards improvement.

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Chapter 11
Balancing the Scholarship of Teaching and Research, and Faculty Evaluation Systems

Akira Arimoto

11.1 Introduction

Teaching and research are core functions of the modern university among the four functions of research, teaching, service, and administration and management. The relative weight between the four functions has moved from teaching in the medieval university to research in the modern university, and the service function was highlighted in Kerr's conception of the "multiversity" (1963). The relative weight between the four functions is also reflected in faculty and institutional evaluation systems. Often, the evaluation leads to rewards to individual faculty and a university. When teaching is highly regarded in evaluation systems, teaching-efficient academics have a high reputation and are rewarded; when research is regarded highly, the opposite is the case. Accordingly, the relative weight between teaching and research depends on evaluation and reward systems.

Academic scholarship emphasizes balanced dimensions of academic activities—since Boyer (1990) proposed four dimensions of academic scholarships. Scholarship is a kind of norm or ethos which usually defines academics' consciousness and behavior related to academic work. Accordingly, in the academic society, where it is normal for research to be highly regarded, the research paradigm has considerable effect on academics' consciousness and behavior. On the other hand, in the academic society, where teaching is highly regarded, the teaching paradigm affects academics' perceptions and the institutional systems. However, in reality, scholarship and reward systems do not necessarily have the same common value, so there are often some discrepancies between them.

In the post-massification of higher education, the ideal scholarship emphasizes teaching and learning in the classrooms. However, policymakers and universities emphasize research because knowledge production is considered an engine of

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economic development, and the quality and quantity of the produced knowledge are considered indicators of institutional competiveness. The issue is how to balance different dimensions of scholarship at the same time, and how to facilitate balanced scholarship through the evaluation and reward systems. Based on these considerations, this paper attempts to shed light on this theme by an analysis based on the Carnegie International survey of the academic profession in 1992 (Altbach 1996; Arimoto and Ehara 1996) and the Changing Academic Profession (CAP) survey on the academic profession in 2007 (Arimoto 2008, 2010a).

11.2 Scholarships of Teaching and Research

11.2.1 The Functions of Knowledge

The knowledge function is likely to be given greater prominence in the emerging knowledge society. Knowledge has various faces, which enable various definitions. As Maurice Kogan observed, there is a large distance between hard and soft knowledge (Kogan 2007). In hard knowledge, CUDOS (communality, universalism, disinterestedness, and organized skepticism) works as an ethos of science, as discussed by Merton (1973). On soft knowledge side, the social relation of knowledge is thought to be working more strongly than on the side of internal knowledge, as shown in Kuhn's paradigm theory (1970) and M. Mulkay's scientific community theory (1977).

There are several functions and dimensions of "knowledge," such as discovery, dissemination, application, and control, or research, teaching, service, and administration and management. Among these functions, research and teaching are considered to be the two most significant vehicles of academic work in the universities and colleges (Clark 1983; Arimoto 1996; Arimoto 2006, 2007). Society is now changing from "society 1" (traditional society) to "society 2" (knowledge society), and, so, it is important in "society 2" to pay attention to the function of academic discipline as advanced knowledge so as to increase a large stock of knowledge creation and export. Both research and teaching are at the core of the academic discipline.

Shinbori (1973) first used the term "academic productivity" as a modification of "scientific productivity," originally used by Merton (1973) in the field of the sociology of science. The academic productivity includes both research productivity and teaching productivity, so that research productivity and teaching productivity are its two vehicles in the academic community. They belong not only to the general academic work but also to the specific academic work, cultivating a frontier of scholarship. Research and teaching activities normatively control academic discipline and, also, are a social mechanism which can be observed from a series of academic lives (Becher 1989; Becher and Trowler 2001).
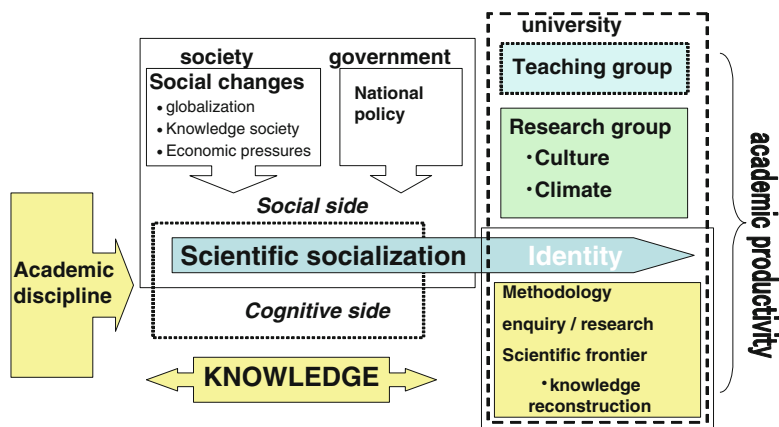
Fig. 11.1 Knowledge functions

As Fig. 11.1 shows, in the process of scientific socialization, academics are influenced by society (e.g., social changes) and by their cognitive side (e.g., knowledge). The wider social change includes internationalization, economic pressures, legislation, and national policy. The cognitive change includes information technology, specialism and subspecialism, and new knowledge and techniques (Biglan 1973; Becher 1989). As Becher and Parry pointed out, there are social and cognitive sides in the academic discipline (Becher and Parry 2007). On the social side, each discipline has its own research group, culture, and climate, and on the cognitive side, every discipline has its own inquiries, methodology, research method, and scientific frontier, conducting knowledge construction manifestly and latently.

Academics are influenced in their disciplines through the scientific socialization process, such as the selection of research themes, attainment of research technology, and resources (finance and human resources). In addition, they are also influenced by academic culture, climate, and learned research styles in each discipline (Parry 2007). Through these processes, academics gradually form their own social identities intrinsic to the disciplines which accompany the manifest and latent functions. They can usually obtain formal knowledge by reading textbooks, articles, and papers written by scientists, researchers, and scholars inside and outside their own discipline, while they cannot obtain tacit knowledge without a tangible face-to-face communication with these scientists, researchers, and scholars. Tacit knowledge is kept in the brain of the outstanding scientist before publishing it in a journal, often expressed in an esoteric manner by way of precommunication within an invisible college, or a small circle, of the other excellent scientists, such as Nobel Prize laureates, elite scientists, and their students.

Just like academics are forced to change their identities in accordance with social change, knowledge is also forced to change its characteristics in the changing social environment. The production of knowledge shifts from the traditional discipline-based one to the post-traditional type, as Gibbons and colleagues have pointed out

(Gibbons et al. 1994). The scientific community, including the graduate schools, is a place of inquiry for expanding the frontier of knowledge, and it continuously encourages knowledge reconstruction, resulting, in reality, to a process of scrapping and rebuilding an individual discipline. The phenomenon of knowledge reconstruction is a diastrophism in the frontier of knowledge development. In other words, knowledge is developed in the COE (Center of Excellence), in which creativity is exercised on the basis of discipline as advanced knowledge (Ben-David, 1977).

11.2.2   Teaching and Research in the Modern University

In universities and colleges, faculty members' work is based on their academic knowledge, especially their disciplinary knowledge. Academics conduct activities such as research, teaching, service, and administration and management using their disciplinary knowledge. Through these activities, they contribute to the development of disciplines, of universities and colleges, and of their societies.

Teaching and research are the two so-called vehicles in the academic work. The former monopolized the university for several centuries from the birth of the medieval university to the rise of the modern university, where sciences and research were institutionalized systematically into the university. The old-type academics taught students aged 14 years when entering the university, whereas in the modern university, the students' enrolling age is typically 18 years. In the medieval universities, the ideal academic was a "good teacher," as shown in the expressions "pastoral care of undergraduates," "learned teacher," and "scholar and teacher." They were expected to take care of students as "in loco parentis" and "osmosis process" (Rashdall et al. 1936; Halsey and Trow 1971; Ross 1976; Arimoto 1981, p. 58).

On the other hand, the academics were expected to take part in research, like the scientists and researchers in the modern university. The disciplines which were established by the scientific revolution started in the seventeenth century. At this time, an academic career with research involvement in addition to teaching began to emerge in order to train graduate students for an academic career (Brubacher and Rudy 1969, p. 183; Light 1974). This new type of academic career was found in the American university model, which is a modified model of the German university. As a result, the academic profession was developed first in the USA by establishing the graduate school system, which conducted both research and teaching, although this idea was first found in German universities but was conducted at the undergraduate level before the introduction of the "graduate tier."

Accordingly, the modern university became an output of innovative action in an attempt to integrate teaching (which was institutionalized in the medieval university) and research (which was institutionalized in the modern university). Wilhelm von Humboldt proposed such integration as a useful vision for the modern university (von Humboldt 1910; Clark 1983, 1995). "His idea of combining both teaching and research in one institution that guided him in establishing the University of Berlin in 1810 (today's Humboldt University) and the structures he created for this

institution became the model for universities not only in Germany but also in most Western countries" (Stanford Encyclopedia of Philosophy 2012).

Of course, not everyone supported the Humboldtian model for modern universities. "The view that the adoption of the Humboldtian model is the key to understanding the evolution of the modern University in Europe and America has been severely modified by recent university historians" (Anderson 2010). Of course, the German university model is one of the important models affecting the development of modern universities. The British university model emphasized character building and moral training through collegiate life, and the French university model emphasized separating teaching and research. These models were also influential in the development of universities (Anderson 2010). However, one cannot deny that the German model is particularly important, even though there are other competitive models, such as the British, French, and American models.

It is, therefore, difficult to determine whether the Humboldtian ideal has actually been realized or not in the modern universities worldwide during the two centuries since its introduction (Ushiogi 2008).

11.2.3 Integration of Research and Teaching

A university is a place for inquiry as well as a center for learning, as based on the idea discussed by Burton R. Clark in his book *Places of Inquiry: Research and Advanced Education in Modern Universities* (Clark 1995). From an international comparative perspective, he dealt with the formation and development of graduate schools as places of inquiry in five countries (Germany, France, the UK, the USA, and Japan), and discovered that the original intention of the integration of research and teaching was successfully implemented in the US system through separate tiers of undergraduate and graduate levels. The USA created its own model by adding the graduate school to the top of the German model. On the other hand, the British and French systems, which had built on their traditional models, were unable to introduce the German model in a simple manner. Other systems worldwide were not necessarily based on the German model, but also attempted to modify it for their own cultural reasons. For example, in the case of Japan, the French, British, American, and German models were imported in a "window shopping style" and adopted accordingly over a period of time. For instance, the French model was at the early stage of becoming a modern university, the German model was at the second stage, and the American model was at the third stage.

In this context, it is important to pay attention to how well the relationship between the national system and emerging scholarship is integrated in the modernization process of a university with regard to the research and teaching nexus.

Idealistically, research as the discovery of knowledge and teaching as the dissemination of knowledge are required to have a tangible mutual interaction in academia. In this context, the argument proposed by Boyer (1990) in his book *Scholarship Reconsidered* is deeply related to the idea of Wilhelm von Humboldt.

As Ushiogi (2008) has argued, the integration of research and teaching has become indispensable since the modern university was instituted in the early nineteenth century. It must be more than a laboratory that is confined to research and it must be more than a school that is confined to teaching.

The university is expected to pursue the integration of research and teaching, because it is a place of inquiry that aspires to academic productivity consisting of both research productivity and teaching productivity. In spite of increasing expectation for integrating research and teaching, it is interesting that the university is apt to plunge into differentiating between the two functions, mostly because of the disintegration of research and teaching by introducing the graduate school on top of the undergraduate tier. The institutionalization of the graduate tier promoted a research paradigm, but teaching and research is becoming less integrated at the undergraduate level.

Considering these circumstances, we have to consider how best to build a vision of the future university while integrating research and teaching in the increasing knowledge society, as well as the post-massification of higher education. In the knowledge society, the research function is emphasized more and, simultaneously, the teaching function is highlighted because college students are less qualified than before and tertiary enrollment is increasing in most countries. Currently, 50 % or more of the 18-year-old cohort is expected to access higher education. As a result, both teaching and research should be closely interrelated in an academic institution to correspond to the knowledge society and the post-massification of higher education.

In an age of the research paradigm dominance, scholarship tends to be regarded as research itself, and, in fact, this tendency has been strengthened continuously since the institutionalization of the modern university. According to the CAP data, academics perceive that "scholarship is best defined as the preparation and presentation of findings on original research." Seventy-three percent of the academics in the advanced countries agreed to this statement and 60 % from emerging countries. Many academics that are affected by the research paradigm are apt to think that scholarship is related to original research. Conformity to this notion is greater in some countries, such as Norway, Hong Kong, Korea, Japan, Canada, the Netherlands, and Malaysia.

In this circumstance, however, teaching should not be underestimated, as Boyer argued (1990). How to construct new scholarship is necessary in terms of integrating research and teaching. Glassick et al. (1997) proposed six standards of scholarship in which academics practicing the "scholarship of teaching" experience symmetry between teaching and research through the common elements of clear goals, adequate preparation, appropriate methods, significant results, effective presentation, and reflective critique (Glassick et al. 1997; Trigwell 2011).

In the post-massification era, academics should pay more attention to teaching. At the same time, a reconsideration of the teaching and learning process is recommended because there is a growing need from the ever more diversified student population in the current universalized higher education sector. Student learning becomes a core concept in the new scholarship and how to integrate these

Fig. 11.2 Image of scholarship in transition
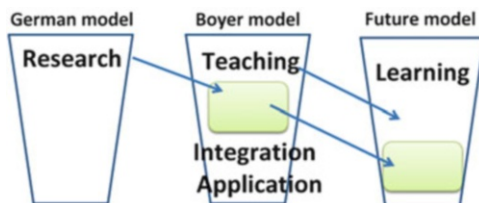
dimensions—research, teaching, and learning—is at the center of higher education research (Arimoto 2005; von Humboldt 1910; Nicholls 2005). Figure 11.2 presents an image of scholarship in transition, showing how the German model emphasizes research, the Boyer model emphasizes teaching, research, integration, and application, and the Future model weights learning, teaching, and research. This type of new scholarship should be further discussed and developed at both undergraduate and graduate tiers.

11.3 Recent Trends of Teaching and Research Orientation

11.3.1 Global Convergence on Research Orientation

If new scholarship is widely spread throughout academia, theoretically, academics may have a greater balance between teaching and research. But what is actually occurring in reality? In this regard, it is interesting for us to note the result of the CAP survey. The CAP survey was conducted in 2007 with the participation of 19 countries (18 countries and one region, Hong Kong). There are two groups—advanced and the emerging countries. The former consists of 13 countries (Canada, the USA, Finland, Germany (DE), Italy, the Netherlands, Norway, Portugal, the UK, Australia, Japan, Korea, and Hong Kong), while the latter consists of six countries (Argentina, Brazil, Mexico, South Africa (ZA), China, and Malaysia).

A greater teaching orientation (teaching > research) is recognized in the following six countries: the USA, Brazil, Mexico, South Africa, China, and Malaysia. Among the advanced countries, only the USA is in this category (teaching > research); all the emerging countries except Argentina are in this category. This raises the question as to whether there is any positive relationship between research orientation and academic productivity, especially research productivity. The CAP data show articles published in an academic book or journal by country (arithmetic mean) for 3 years. The average numbers in advanced countries (7.2) are higher than those in emerging countries (4.7). The number of publications is higher than average in six countries, and they are Korea (10.6), Hong Kong (9.5), Japan (9.2), Italy (8.6), Germany (8.2), and the Netherlands (7.7), which are all advanced countries, and in emerging countries, there are two, China (8.5) and Argentina (5.1). Among the eight countries with a high research orientation (Norway, Italy,

Table 11.1 Increase and decrease of research orientation by type, country, and year (%)

Type	Country	1992	2007	Increase & decrease
Latin	Mexico	3	4	+8
	Brazil	3	4	+10
	(Average)	36.	45.	+9
Anglo Saxon	U	5	4	-7
	Austral	5	6	+17
	H	5	6	+9
	Kore	5	6	+12
	U	5	6	+11
	(Average)	53.	62.	+8.4
German	Germany	6	6	-3
	Japan	7	7	-2
	Netherlands	7	5	-19
	(Average)	71.	63.	-8
	Total Average	55.6	59.2	+3

Data source: The Changing Academic Profession (CAP)

Japan, Australia, Canada, Korea, the UK, and Finland), only three (Korea, Japan, and Italy) are in the high publication category, while the remaining five countries (Norway, Australia, Canada, the UK, and Finland) are not. Clearly, there is not necessarily a positive relationship between a high research orientation and high article publication.

Research orientation seems to be the predominant trend over the past 15 years. Table 11.1 reveals three types of combination with regard to research and teaching orientations in 1992: the German type with involvement in research orientation, and which consists of three countries (Germany, Japan, and the Netherlands); the Anglo-Saxon type with involvement split between a research and teaching orientation, and consisting of five countries (the USA, Australia, Hong Kong, Korea, and the UK); and the Latin American type with a teaching orientation, and represented by two countries (Mexico and Brazil) (Arimoto and Ehara 1996).

A comparison of the data is available for the ten countries which participated in both the Carnegie survey in 1991 and the CAP survey in 2007. The average of these ten countries increased by 3.6 % from 55.6 % to 59.2 % over the past 15 years. Table 11.1 shows that, (1) six countries are the German type with more than the total average—Japan (71 %), Australia (69 %), Korea (68 %), the UK (67 %), Germany (63 %), and Hong Kong (63 %). However, Germany and Hong Kong are close to the Anglo-Saxon type because their percentages are a little higher than average. (2) The Anglo-Saxon type consists of one country, the Netherlands (56 %). (3) The Latin American type consists of three countries—Mexico (43 %), the USA (44 %), and Brazil (48 %). The ratio between the research-focused type (German), equally balanced type (Anglo-Saxon), and teaching type (Latin American) shifted from 3:5:2 in 1992 to 6:1:3 in 2007.

	Teaching			Research		
Table 11.2 Hours spent in a typical week on teaching and research in 1992 and 2007 by country (mean)	1992	2007	Total	1992	2007	Total
USA	18.7	21.1	2.5	16.5	12.4	−4.1
Germany	16.4	15.6	−0.8	19.2	15.6	−3.6
UK	21.3	18.3	−3.0	13.0	12.1	−0.9
Japan	19.7	20.3	0.6	21.3	16.7	−4.6
Korea	23.1	21.1	−2.0	17.1	18.1	1.0
Hong Kong	19.0	19.8	0.8	13.6	12.1	1.2
Brazil	29.1	20.1	−9.0	12.6	9.0	−3.6
Mexico	16.9	21.3	4.4	11.2	9.1	−2.1

Data source: The Changing Academic Profession (CAP)

11.3.2 Hours Spent on Research and Teaching

As described, a research orientation has increased in most of CAP participating countries. Using other data to confirm this trend towards convergence, it is useful to know how much time was really spent on research and teaching. How many hours did academics spend on research per week according to the 2007 survey?

The CAP data reveal that the total number of hours spent on research per week in 2007 was 14.6 h in the advanced countries and 10.6 h in the emerging countries, while they were 16.8 and 11.9 h, respectively, in 1992. The total number of hours spent on research decreased in both advanced and emerging countries in 2007, by 2.2 and 0.3 h, respectively, although academics in the advanced countries are still spending more on research than those in the emerging countries.

As Table 11.2 shows, the eight countries which participated in both surveys changed their research hours over the 15-year period as follows: Japan (−4.6), Germany (−3.6), Korea (+1.0), the USA (−4.1), the UK (−0.9), Hong Kong (−1.5), Brazil (−3.6), and Mexico (−2.1). In other words, academics in all countries except Korea (+1.0) decreased the research hours. More notably, academics in Japan (−4.6) and the USA (−4.1) decreased their research hours by more than 4 h per week.

On the other hand, the total amount of teaching hours (arithmetic mean) in 2007 was 18.6 h in advanced countries and 18.8 h in emerging countries, and these hours were fairly high in six countries (Mexico, the USA, Korea, South Africa, Japan, and Portugal). The changes of teaching time in eight countries are as follows: Japan (+0.6), Germany (−0.8), Korea (−2.0), the USA (+2.5), the UK (−3.0), Hong Kong (+0.8), Brazil (−9.0), and Mexico (+4.4). Brazil reported the greatest decrease in teaching hours, the UK and Korea less of a decrease, and Mexico and the USA increased. Other countries remained almost same over the study period.

Comparing differences between research time and research orientation, the data show that both orientations increased in Korea. Both teaching time and teaching orientation increased in the USA, while research time decreased.

11.3.3 Compatibility Between Research and Teaching

The CAP survey in 2007 included a question about compatibility between research and teaching, asking respondents to indicate their views on the statement "teaching and research are hardly compatible with each other." As previously discussed in this paper, academics' emphasis on a research orientation was increased over the 15 years in many countries, especially in advanced countries. In this context, emphasizing research may result in a de-emphasis of teaching functions. According to the CAP data, the proportion of academics who agreed with the statement that "teaching and research are hardly compatible with each other" is 25 % in advanced countries and 20 % in emerging countries. The proportion of "hardly compatible" is highest in Japan (51 %), followed by China (42 %), Finland (38 %), Germany (33 %), Malaysia (30 %), and Australia (28 %). Conversely, in some countries, few academics agreed with the statement: Argentina (6 %), Brazil (7 %), Korea and Mexico (11 %), the USA (12 %), Norway (14 %), and Italy (14 %). This result shows that, to a great degree, they agree that there is compatibility between the two.

11.4 Evaluation and Reward Systems: Global Rankings

Increasing research orientation among academics worldwide is connected to the evaluation and reward systems in the academic world. The research paradigm has had a close relationship with the top research universities and higher education institutions regarded as COEs. Intense competition is apt to occur among research universities seeking to be recognized globally as a COE. This phenomenon is related to the global rankings stressing a research orientation, as well as an institutional reward system weighting research more than teaching. In a reward system which stresses research more than teaching, academics prefer to focus on the pursuit of new knowledge, present a paper in an academic meeting, and be published in academic journals. The mechanism of "publish or perish" supports this kind of mindset. Academics who publish articles in prestigious journals are rewarded as eminent researchers in the pyramid of the academic community.

In the emerging knowledge society, the knowledge function tends to strengthen the research orientation. Knowledge is becoming a key component in economic and social production as the social phenomena show—knowledge enterprise, academic rankings, academic competition, etc. Throughout the world, an increasingly knowledge-based economy has brought unification in a common global academic marketplace, where academia has been compelled to change from a "knowledge community," in which Merton's ethos of CUDOS (1973) is working, to a "knowledge enterprise," in which the traditional ethos is no longer the ideal (Arimoto 1987).

This reconstruction of knowledge has proceeded together with a rationalization of academic organization, so that the head-hunting of eminent academics, brain drain and gain, stratification between haves and have-nots, and the Matthew effect

Table 11.3 Percentage distribution of 120 physicists by quantity and quality of published research

Quantity	High	Low
High	Type I (+, +) 33	Type II (+, −) 12
Low	Type III (−, +) 18	Type IV (−, −) 37

have become familiar occurrences. In the 1920s, university rankings were institutionalized for the first time in the USA, which lead to the world as a competitive academic marketplace. University rankings have gradually evolved since then to where the rank order of academics as well as academia is publicized worldwide, forcing both institutions and academics to become committed to higher competitiveness (Arimoto 1981, 2010) (Table 11.3).

As described above, many research universities have developed a COE at the international as well as national level, in order to attract eminent academics from elsewhere to enhance academic productivity, especially research productivity. Who are eminent academics? In the sociology of science, Cole and Cole (1967) presented the relationship between the "quantity" and "quality" of the research papers produced by the 120 physicists. Based on the combination of "quantity" and "quality," they generated four types of physicists:

- Type I (+, +) is the prolific physicist who produces an abundance of papers, which tend also to be fruitful (i.e., often used by others in the field)
- Type II (+, −) is the mass producer who publishes a relatively large number of papers of little consequence
- Type III (−, +) is the perfectionist who publishes comparatively little, but what they do publish has a considerable impact on the field
- Type IV (−, −) is the silent physicist

The percentages of these four types are as follows: Type I (33 %), Type II (12 %), Type III (18 %), and Type IV (37 %). It is interesting that there are as many as 37 % of the silent type of physicists. If we use this typology, a category of eminent academics is perhaps related to two types, such as Type I and Type III, which contain a total percentage of 51 % (Cole and Cole 1967).

This is a case study of 120 physicists and, probably, there are various kinds of that results we will obtain as we carry out case studies in the fields of sciences other than physics. For example, in their survey of the top 50 institutions in various fields in the USA, Johns et al. (1982) found that 82.8 % of the staff achieved a high level of productivity quality, while in the non-high-ranking institutions, the proportion fell to 44.3 %. It is also interesting that only 9.9 % belong to the "silent type" in the top ranking departments, whereas 35.7 % belong to the silent type in the non-high-ranking departments. Research universities attracting these academics are likely to be situated in major centers of scientific inquiry and, consequently, at the top of the ranking in the world academic community.

In addition, a series of studies found that the flow of scientific information moves principally in a one-directional path from the major to the minor centers of scientific inquiry. For example, as Cole and Cole (1967) pointed out, "This view of the communication network maintains that the leading journals of physics are controlled by the same group of men who control the top-rated departments. The journals more readily publish papers by members of the in-group and their students, and they tend to cite the work of others in that group" (p. 390).

In fact, research universities are usually positioned at the top of the ranking systems. For example, according to the 2010 London Times' university ranking, all universities ranked in its top ten are research universities in the USA (Harvard, Caltech, MIT, Stanford, Princeton, UCB, and Yale) and the UK (Cambridge, Oxford, and Imperial College London) (London Times 2010).

Among these top ranking universities, American research universities seem to occupy leading positions. For example, in the 11 universities through 2009 with ten or more faculty members who have been awarded a Nobel Prize in chemistry, physics, physiology/medicine, or economic sciences, Harvard University is easily the world leader with 31 Nobel Laureates, followed by Stanford University with 18, MIT with 17, Caltech, Columbia University, Max Planck Institute (Germany), Rockefeller University, University of California Berkeley, University of Cambridge (UK), University of Chicago with 16, and Princeton University with 11. In addition, 9 of the 11 institutions are in the USA (Toutkoushian and Weber 2011).

US universities have long been strong competitors in the international competition for COEs because they were the first to institutionalize graduate education since the establishment of the Johns Hopkins University in 1876. In this kind of international environment, after the institutionalization of "home of sciences," there are few studies about centers of learning (Arimoto 1996).

According to the statistical data of Kagaku Gijutsu Seisaku Kenkyusho (National Institute of Science and Technology Policy, NISTEP) in Japan, the number of articles published worldwide in the main journals listed in the Thomson Reuter's Web of Science totaled 987,497 in 2008. The top ten countries are the USA, China, the UK, Germany, Japan, France, Canada, Italy, Spain, and India. Japan's articles increased about 1.7 times from 40,990 in 1988 to 69,300 in 2008. However, when comparing the number of articles, Japan has fallen in the past ten years from second place in 1998 to fifth place in 2008. On the other hand, of the emerging countries, Brazil has risen from 20th to 14th place, Korea from 16th to 12th, India from 12th to 10th, and China from 9th to 2nd (Cf. Thomson Reuters, 2010).

Of course, there are many problems about such rankings, including technical limitations and language bias, because these ranking systems seem to give considerable advantage to academics in Anglo-Saxon countries (Kobayshi 2005; Shin et al. 2011). Teichler discussed "imperialism through ranking," arguing that "rankings systematically favor universities of certain countries and thereby propagate them as the role models for those in other countries. This often happens through reproduction of national ideologies in rankings." Some examples are shown as follows: the preoccupation of Chinese rankings to declare success in

research as more or less automatically determining success in teaching and learning; the English-language bias of many international rankings discriminates against high-quality work in countries that do not follow the lingua franca dictatorship; ignorance of academic work in non-English languages; rankings discriminate against universities in developing countries (Teichler 2011).

The effects of rankings are positive and negative, as well as functional and dysfunctional. The positive and functional side includes many phenomena, such as "acceleration of research orientation in academia, development of indicators to be used for research productivity," etc., while the negative and dysfunctional side includes side effects, such as "differentiation of society between haves and have-nots, separation between research universities and non-research universities, the increase of research paradigm and decline of teaching orientation," etc. (Arimoto 2011, p. 241).

In spite of such limitations, this kind of landscape with its reward system and rankings is likely to account for the causality that encourages academics' greater involvement in both research orientation and research productivity.

11.5   Concluding Remarks

This chapter conceptualizes research-driven teaching and learning from the university development perspective. In the post-massification of higher education, new scholarship is expected to emphasize teaching and learning because the university teaches students who are academically less prepared. This leads to a new nexus between research, teaching, and student learning, although, in reality, the contemporary university strongly emphasizes research to survive in the face of global competition. Based on these considerations, this chapter attempts to address the teaching and research nexus using empirical data from international surveys on the academic profession conducted in 1992 and in 2007. I would conclude this chapter by highlighting the following five points.

First, knowledge is a core foundation for conducting research, teaching, service, and administration and management in academic work. Among these functions, research and teaching are indispensable as two vehicles in the modern university.

Second, in the modern university, the research function was enforced in addition to the teaching function to the extent that the research paradigm has been prevalent in the research university. It is noticeable that the research university was invented and progressed under this research paradigm, while teaching institutionalized in the medieval university was compelled to surrender its hegemony to a considerable degree in the changing environment.

Third, as the post-massification of higher education is proceeding, the ideal of the research–teaching–student learning nexus proclaims its stronger status in

academia to the extent that paradigm transformation in scholarship is necessary from a research orientation to a teaching orientation, and, hence, a learning orientation.

Fourth, however, an international comparative study on the academic profession between the Carnegie survey (1992) and the CAP survey (2007), testifies to the increasing difficulty of establishing compatibility between research and teaching. This is related to the increasing phenomenon of academic rankings which stress a research orientation by way of research productivity and, also, the reward system putting more weight on research than teaching in the process of faculty evaluation, recruitment, and promotion. This phenomenon will be strengthened in the knowledge economy throughout the world, despite the fact that the post-massification of higher education needs more of a teaching and learning orientation.

Fifth, the post-massification of higher education will need more of a teaching orientation among academics worldwide in order to support students' learning.

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Chapter 12
Higher Education and the Future Social Order: Equality of Opportunity, Quality, Competitiveness?

Ulrich Teichler

12.1 Introduction

The complexity of higher education and its societal function becomes most obvious in titles of annual conferences arranged by professional associations or other bodies regularly involved in higher education. In order to attract a vast range of specialists and activities, a chain of terms is linked, but the linkage is not obvious. Sometimes, however, terms are linked with the intention of raising our awareness of interrelationships which might have been overlooked in the past. This chapter was stimulated by three terms that were chosen by the experts coordinating the round-table "The Future of European University after Bologna" arranged by the Fondation Universitaire in December 2010 in Brussels, in order to discuss possible trends and policies—and obviously tensions between trends and policies—in Europe in the past ten years. One year earlier, a UNESCO conference had a similar set of terms in its title: "Access, Values, Quality and Competitiveness" (Sadlak et al. 2009). The rationale underlying these two titles seems to have been similar, namely, to point out the diversity of objectives of higher education, whereby hardly any observers of trends and policies would argue that higher education can contribute to these objectives equally well and in a harmonious way.

The term "equal opportunity" is usually referred to when attention is paid to the underrepresentation of particular sociobiographic groups among students. Policies aimed at redressing inequities of that kind might have in mind an open education system, the reduction of barriers against access, a meritocratic order, "social justice," "social cohesion," or even "equity." The question is which role higher education actually plays for the social order.

The term "quality" points at objectives highly valued by academics but often viewed as being in conflict with egalitarian objectives. If higher education is opened

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up substantially to sociobiographic groups usually underrepresented in higher education, the quality of the overall system could be compromised. This could possibly endanger both high-quality teaching for the most talented students and high-quality research. Such a view is widespread.

The term "competitiveness," although only referring to characteristics of social interaction among academics, higher education institutions, and, possibly, national higher education systems, has been frequently employed in the first stage of the twenty-first century to signal the desired social relevance of higher education. It reflects the increasing expectation that higher education should be useful and support the economic rationales of societal policies. Again, the combination of these three terms implies that efforts to increase the productive function of higher education, as a rule, are not compatible with efforts to widen access for disadvantaged students.

In looking back at the past ten years, we would not argue that "equality of opportunity" was high on the agenda in European higher education policies. There were indications in recent years, however, that issues related to the role of higher education for the social order should deserve more attention in the next decade and that, consequently, stronger efforts might be needed to cope with tensions between equality rationales and other concurrent rationales.

An account of the theme "equality of opportunity" and its links to conflicting objectives in higher education has to take into consideration both the academic discourse of higher education researchers and the political discourse of the various actors in the higher education system. This chapter could draw from three arenas of discussions. First, some European higher education researchers recently undertook a study aimed at summarizing the developments in higher education and the state of higher education research. In this study, supported by the European Science Foundation in the framework of the ESF "Future Look" projects (see Brennan and Teichler 2008), "equity and social justice" was one of the key themes (see Brennan and Naidoo 2008). Second, the so-called EQUNET consortium, comprising research institutes and policy bodies from eight European countries aiming at improving the information base as well as "working for equitable access to higher education," began to make public its first major results in a publication (Camilleri and Mühleck 2010) and at a conference in 2010 in Ljubljana. Third, the theme of the "social dimension" of higher education, which surfaced in the so-called Bologna Process but never became in key issue in this context, has been recently discussed in detail in a doctoral dissertation (Yağci 2012) and has also been addressed in the "independent assessment" study of the Bologna Process (Center for Higher Education Policy Studies et al. 2010).

12.2 Key Issues of Higher Education in Europe at the Beginning of the Twenty-First Century

The public debate about the past, present, and future of higher education is so complex that any generalization about its priorities and posteriorities can be challenged. Even if we concentrate on the widespread European debates

(cf. Teichler 2010) and even if we claim that the Bologna Process was the major arena for joint European debates on higher education issues in the first decade of the twenty-first century, we note an enormous thematic breadth (see, for example, the overview articles in Kehm et al. 2009; see also overviews of results in European Commission 2010; Center for Higher Education Policy Studies et al. 2010; Sursock and Smidt 2010; Curaj et al. 2012). This holds true because substantial efforts were made in European higher education policy to ensure that any salient theme was taken up at least as a bullet point in the communiqués the European ministers in charge of higher education formulated every second year in the process of monitoring and updating the reform process following the Bologna Declaration of 1999.

Five themes were dominant in higher education in Europe in the first decade of the twenty-first century:

- Higher expansion and diversity,
- Internationalization and globalization,
- Quality,
- Relevance; for example, underscored with the terms "knowledge economy" and "employability," as well as
- Management and strategy.

Expansion and diversification The expansion of higher education has been described most frequently in terms of the enrolment rate of students (new entrant students, all students, or graduates) among the corresponding age group. Experts agree that the awareness of the causes and consequences of increasing enrolments gained momentum in economically advanced countries in the wake of periods of enrolment growth since the 1960s and again since the late 1980s (cf. the overview of the debates in Teichler 2007a; OECD 2008). In both periods, a widespread consensus emerged that a diversification of higher education was the appropriate response in order to serve the increasing variety of students' motives, talents, and future job prospects, and in order to ensure a relatively high degree of concentration of the research resources within higher education.

Although certain general characterizations of the diversification trend, such as that of "elite, mass, and universal higher education" by Martin Trow (see Burrage 2010), became popular, this might suggest a high degree of consensus about the perception of trends and about the most appropriate coping measures. However, no widespread agreement was reached about the optimal modes of diversification. In Europe, diversification according to types of higher education gained a relatively high degree of popularity in the 1960s and 1970s, and several countries opted for a two-type structure, e.g., universities and Fachhochschulen (later translated as universities of applied sciences) in Germany. In recent years, two modes of diversification gained popularity concurrently (see Reichert 2009; Teichler 2012). On the one hand, intra-institutional diversity by means of a stage structure of study programs and degrees, i.e., the core operational reform advocated in the Bologna Declaration of 1999 (see the overviews in Froment et al. 2006), and, on the other hand, a steeply stratified interinstitutional diversity, as underlying the increasing popularity of university "rankings," the competition to be among "world-class

universities," and various national programs for diversification (see Kehm and Stensaker 2009; Shin et al. 2011).

Internationalization and globalization Universities are generally viewed as internationally oriented organizations, because the search for knowledge does not stop at borders, many disciplines are basically universal and many others benefit from international comparison, and because many scholars harbor cosmopolitan values. Yet, higher education within individual countries is often called "higher education systems," because study programs, institutional patterns, academic careers, funding, and many other features are nationally shaped. The public discourse on higher education clearly suggests that the internationalization of higher education has been progressing for more than two decades. More rapid international transfer, increasing numbers of mobile students and staff, and increasing global interaction and competition are frequently identified as the most visible features of this trend. The terms "internationalization" and "globalization" are often used almost as synonyms, but if distinctions are made between them, the former refers to increased cross-border activities amidst the persistence of borders, while the latter supposes a blurring of borders (see the overviews in Gaebel et al. 2008; Teekens and de Wit 2007; Teichler 2007b). The relevance of this theme in the public debates in Europe is underscored by, among other things, the fact that the theme of diversification is discussed along with the theme of internationalization. On the one hand, the introduction of a convergent Bachelor–Master structure of study programs and degrees was called for in the Bologna Declaration of 1999, primarily on the grounds that this would serve the increase of student mobility in two respects. First, it would make study in European countries more attractive for students from other regions of the world and facilitate intra-European mobility (see Teichler 2009b). On the other hand, the popularity of a steeply stratified higher education system, visible in the public preoccupation with "ranking," is supported by the belief that "world-class universities" are involved in a fierce global competition.

Quality The term "quality" is one of the most frequently used terms if one wants to express what higher education really should strive for. Quality seems to be the pet theme of academics. In the current popular debates, we note four different connotations of "quality": (a) "quality" as opposed to "quantity," often referred to in suggesting that the "quality" should not be lost in the quantitative expansion of higher education, or in calling for efforts to improve "quality" after periods of a seemingly prime preoccupation with quantitative growth; (b) "quality" as opposed to "relevance," often employed to underscore the importance of depth of theory and methods, even as pursuit of knowledge for its own sake and as curiosity-driven inquiry, vis-à-vis pressures to serve practical or even instrumental purposes; (c) "quality" understood as "excellence," as opposed to "mediocrity" of academic activities; (d) finally, "quality" as any kind of valuable goal in teaching and research which should be improved through increased reflection of weaknesses, and effective and efficient measures to counteract them and, thereby, to increase the "fitness for purpose"—this combination of assessment and action is often characterized with the term "quality assurance."

Obviously, various modes of "evaluation" have spread, i.e., systematic, periodic, and comprehensive schemes of assessing teaching and learning, research, or the organizational "performance" of higher education, that are often imbedded in formal mechanisms of decision-making, such as accreditation and licensing. They have dramatically increased in Europe since the 1980s (see the early developments in Dahllöf et al. 1991; Westerheijden et al. 1994). Moreover, information systems of "indicators" and "rankings" have been built up in order to stimulate shame and pride and, thereby, possibly to stimulate stronger efforts to enhance "quality" (cf. for example the analyses in Cavalli 2007).

Relevance While the terms "quality" and "quality assurance" are frequently employed, we do not observe any similarly popular term covering various efforts to address outcomes of academic work beyond the academic territory. Such outcomes include the utilization of knowledge by graduates from institutions of higher education and the contribution of systematic knowledge to technological advancement, economic growth, social well-being, and cultural richness. "Relevance" might be the most suitable umbrella term, while the public debate frequently employs terms addressing specific areas such as "employability" (see the critique in Teichler 2009a) or "knowledge economy" (cf. Välimaa and Hoffman 2008; Välimaa 2009) in characterizing instrumental views on higher education. The call of the Lisbon Declaration in 2000 by the European Council, i.e., the heads of states or governments in the European Union, to increase public and private research expenditures in order to make Europe the "most competitive" region of the world is often seen as an example of such instrumentalism. Many academics express concern, however, that unexpected innovation and critique of conventional wisdom might get lost if higher education is pressured to be useful.

Management and strategy In most European countries, a similar approach of changing the governance of higher education has been opted for since the 1980s or 1990s. This approach involves a combination of less detailed supervision by government and clearer formulations for policy goals instead: more elements of indicator-based funding of higher education institutions, more elements of formal autonomy of universities, and a stronger power of the university leadership. All of this has been combined with the establishment of mechanisms of evaluation and accreditation, and stronger incentive steering in the allocation of research resources and as regards to the behavior of academics (cf. Neave and van Vught 1991; Amaral et al. 2003; Ferlie et al. 2008).

12.3   Discourses Related to "Equality of Opportunity"

The role of higher education with respect to "equality" or "equity" was not among the key issues in the public discourse of higher education in recent years. It was subordinated in Europe to concerns about "quality" and to efforts to increase the "competitiveness" of higher education and research as compared to other regions of the world. This does not mean, however, that the equality theme was more or less

overlooked. We can name five different issues of higher education discussed across Europe in the first decade of the twenty-first century which were linked to the equality issue:

- Efforts to increase the stratification of higher education institutions in order to concentrate "quality" at a few top institutions were often criticized as neglecting issues of equity.
- Similarly, efforts to introduce or increase tuition fees at higher education institutions were continuously under scrutiny in regards to their effects on social selection.
- In the first decade of the twenty-first century, attention began to focus on the underrepresentation of migrants among students in higher education, an issue of inequality not in the focus of discussions in previous decades.
- In the Bologna Process, various themes gained momentum which had not yet played a role in 1999, when the "Bologna Declaration" was formulated. Among others, as already pointed out, the so-called social dimension came into play, and issues of equality were addressed in this framework (see Yağci 2012).
- A few years after the "Bologna Declaration," a similar cooperation process emerged among the ministers of the various European countries in charge of vocational training. Various measures were advocated to upgrade the quality and reputation of vocational training, among them measures to facilitate the transition from vocational training to higher education and the access to higher education of occupationally experienced persons without the traditional entry qualifications (cf. Dunkel et al. 2009; Bowers-Brown 2006).

In this chapter, not all these issues will be discussed. Rather, the author concentrates on the issue of the underrepresentation of particular sociobiographic groups and related policy measures. Attention will be paid to the role this theme has played in the Bologna Process.

12.4 The "Social Dimension" Discourse

Some documents suggest, in contrast, that issues of equity have been high on the agenda of the Bologna Process. For example, the "social dimension of higher education" is named in a study on the impact of the Bologna Process published in 2010 by EURYDICE—the agency for educational information of the European Commission—as the third of six key thematic areas, in addition to "Bologna structures and tools," "quality assurance," "lifelong learning in higher education," "student mobility," and "the economic crisis and higher education" (EURYDICE 2010). This list, itself, can be viewed as an indication of the changes of interpretation of the Bologna Process over time, as well as being one of the specific interpretations of the Bologna Process by the various actors involved—in this case, by the European Commission.

EURYDICE focuses its discussion on the "social dimension" exclusively on the issue of "under-representation of particular societal groups" (cf. the breadth of this discourse demonstrated in Yağci 2012). It addresses the definitions, the modes of monitoring and data collection, the findings, the perceived causes, the eventual targets set for a reduced underrepresentation, and the measures taken aimed at reducing the underrepresentation. In summarizing the findings, EURYDICE (2010, p. 27) states: "The social dimension of higher education presents the most significant challenge to European cooperation as it is understood so differently from one country to another." EUDYDICE shows that most countries do not set any clear targets—neither in terms of the reduction of underrepresentation, nor in terms of the timeframe, as the European Commission likes to do in its policy agenda, and that the countries opt for various measures, whereby financial support for disadvantaged groups seems to be the single most common approach.

A very similar approach to the social dimension of higher education was taken by Eurostat, the statistical agency of the European Union, and a consortium of institutions cooperating in undertaking surveys on student life in various European countries in their "Eurostudent" study. In presenting "key indicators on the social dimension" and respective data for various European countries, they also address the issue of the underrepresentation of specific sociobiographic groups (Eurostat and Eurostudent 2009).

In the so-called "independent assessment" study of the Bologna Process, the three institutions in charge of the study—two university-based higher education research institutes and a consulting firm—make it clear that the "social dimension" is by no means in the center of the political activities of the Bologna Process (Center for Higher Education Policy Studies et al. 2010). They also point out that the "social dimension" was not considered by the key actors of the Bologna Process as referring only to the issue of the underrepresentation of particular societal groups.

The study shows that the Bologna Declaration of 1999 initially focused on the structural change of higher education, with the aim of enhancing student mobility. Over the years however, it was viewed by some politicians as being closely linked to quality enhancement as well as the contribution of higher education to economic progress, while equity issues were not addressed at all. Representatives of students participating in the political consultations accompanying the Bologna Process had already raised the issue of the social implications of the Bologna Process earlier. In the Prague Communiqué in 2001, the ministers suggested exploring this issue. In the Berlin Communiqué of 2003, tension between the key issues of the Bologna Process and equity concerns was acknowledged. The document stated that "The need to increase competitiveness must be balanced with the objective of improving the social characteristics of the European Higher Education Area, aiming at strengthening social cohesion and reducing social and gender inequalities both at national and at European level." In the Bergen Communiqué of 2005, suggestions were made about exploring the social dimension further in relation to issues of mobility, and a working group explored this thematic area in preparation for the

2007 London conference of ministers (Bologna Process Working Group on Social Dimension and Mobility 2007; cf. Yağci 2012).

This study points out that the London Communiqué of 2007 put the social dimension high on the agenda for the first time in the Bologna Process. The London Communiqué also formulated respective targets for the first time in the framework of the Bologna Process: "The student body entering, participating in and completing higher education at all levels should reflect the diversity of populations." This time, the social dimension is not characterized as being in tension with other goals, but as being an integral element of the overall role of higher education of "raising the level of knowledge, skills and competences in society."

The "independent assessment" study concludes that the London Communiqué has formulated three interrelated goals: "promotion of wider access to higher education, increasing participation and ensuring completion of studies" for all groups. In contrast, this author considers it more appropriate to conclude that the London Communiqué addresses two distinct issues:

- First, the issue of underrepresentation of particular societal groups, both in terms of the actual composition of students and in terms of measures aimed at reducing the underrepresentation, and
- Second, the issue of study conditions and provisions conducive for successful study.

In analyzing the available information, the CHEPS, INCHER-Kassel, and ECOTEC (2010) study points out that the social dimension "does not command a high priority" in many national Bologna agendas and that many countries do not see any clear link at all between their national policies as regards to the sociobiographic composition and the Bologna Process. The databases differ by country as well as the emphasis on certain dimensions of underrepresentation and the measures taken. Finally, there are no common approaches to improving the study conditions and provisions conducive for successful study.

We can draw the conclusion that there has been, at best, a lukewarm discourse on the "social dimension" in the Bologna Process. The concepts are vague. There is no consensus on the range of issues comprised by the term "social dimension." There is no consensus either about which societal groups should be primarily considered (e.g., women in the past and now men? Parental occupational and educational background? Migrants? Students with vocational training background and without typical entry qualifications? Adults in general? Persons from disadvantaged regions? Physically disabled persons?). There is no consensus about desirable, feasible, and the most likely effective countermeasures or about the importance of higher education policy in this framework as compared to early childhood policy, school policy, and labor market policy. Likewise, there is no consensus on whether or not this is an issue of the Bologna Process or whether it should be addressed through joint or parallel European action. Last, but not least, there are divergent views on how pressing are the respective social problems.

12.5 Data on Underrepresentation and Counteracting Policies

There is a range of publications addressing the available data on the underrepresentation of certain societal groups in higher education of the various European countries, as well as on the measures to redress this. In addition to these publications analyzing the data of the countries involved in the Bologna Process, it is worth considering the annual OECD publication "Education at a Glance" (for example, OECD 2009), as well as a special publication of this supranational agency on "demography" (OECD 2008). These publications do not comprise all countries participating in the Bologna Process, but they provide additional information on economically advanced countries outside Europe.

The data presented in these studies are based on a relatively small set of sources: (a) the international educational statistics jointly collected from the official national statistical agencies or sections within ministries by three supranational agencies: UNESCO, OECD, and Eurostat; (b) the survey on the "Social and Economic Conditions of Student Life" undertaken in a substantial number of European countries (the so-called Eurostudent III survey around 2005–2007 comprising 23 European countries; see Orr 2008); (c) a range of data on employment and social structure used in some cases both as a reference of the adult population as well as information on graduate employment, notably the European Union Statistics on Income and Living Conditions (EU-SILC), the European Social Survey (ESS), and the European Labour Force Survey (EU-LFS); (d) finally, data on measures taken were, in most cases, extracted from national reports written upon the request of the Bologna Follow-Up Group (BFUG) in order to document the progress of the Bologna Process for each of the ministerial conferences.

A summary of the frequently addressed data is provided in the "independent assessment" study of the Bologna Process (Center for Higher Education Policy Studies et al. 2010). Some major findings might be the following:

- The number of women among tertiary education students is slightly higher (up to 1.2 times higher) than that of men in all except two European countries for which information is available.
- Students with fathers and mothers of low educational background are, on average, only about half as often represented in higher education as the respective share of fathers and mothers among the 40–60-year-old persons in the population; the respective rates, however, differ strikingly by country.
- The proportion of students "from nontraditional educational routes" among all students varies, as far as information is available, according to the most frequent definitions chosen from 1 % to 15 %.

The study also provides information about various measures, e.g., public financial support for students as well as guidance and counseling services.

The Eurostudent III study (Orr 2008) provides valuable information about issues of underrepresentation as well as about living conditions. In addition to these themes, the following findings are worth reporting:

- The share of students with children ranges across the European countries participating in the study from less than 1 % to 22 %.
- The proportion of students whose physical disabilities and chronic disease impairs their learning varies from less than 1 % to 9 %.
- Between 10 % and more than 50 % of the students have work experience prior to study.
- The registration as part-time students varies from nil to 37 %.
- The students living with parents vary by country between 4 % and 73 %.
- The students' income derived from public scholarships ranges from nil to 63 %.
- The employment rate during term varies by country from 9 % to 75 %.

Taking into account the enormous differences by country, one cannot be surprised that most countries do not consider the Bologna Process to be a mechanism for convergent action in this area. However, comparative data of this kind might be valuable in stimulating national debates about specific strengths and weaknesses, as well as about potential areas for action.

The EQUNET consortium published its first major account in 2010 (Camilleri and Mühleck 2010). This is a study which sought to develop indicators of entry to higher education on a more sophisticated level. Some of the indicators presented are summarized below:

- The net entry rate to higher education (ISCED 5a) averaged 49 % for the EU countries in 2007. It varied from 10 % in Cyprus to 81 % in Latvia. Regional rates varied moderately from 40 % on average in Southern European countries to 58 % in Nordic countries.
- The ratio of students' fathers with a blue-collar occupational status or registered as manual-labor workers in the general population aged 40–60 years ranged by country from less than 10 % to almost 50 %.

The most surprising observation of these analyses is not the substantial findings, but, rather, the fact that not a single one of these studies made an effort to create a time series in an attempt to compare the phenomena of underrepresentation according to the most recent data with those at the time when the Bologna Declaration was signed. Obviously, the authors of the studies did not believe that the Bologna Process had any impact on the sociobiographic composition of students.

In most respects, these data presented confirm what prior studies have shown and what is known among experts. There is a clear underrepresentation of persons whose parents' educational attainment is low and whose socioeconomic status is low. In contrast, there is now an overrepresentation of women among students in many European countries.

The findings presented above, however, are, in one respect, certainly a "surprise": the differences in the rates of underrepresentation according to parental

educational attainment and socioeconomic status between the various European countries can be interpreted as "extremely high." Since the status quo is so diverse, it is hard to imagine any convergent policies across European countries.

12.6 Limits of the Database

Scholars undertaking studies on the underrepresentation of higher education students from various societal groups in Europe often point out that their analyses are restrained by the limited range of comparative data available. More in-depth information is available in the statistics of individual countries, comparative surveys of select European countries, and surveys on individual countries, but this does not suffice for a European-wide analysis.

The situation is, indeed, paradoxical. More than ever before, politicians want to base their decisions on "evidence." There are moves towards increased "indicator-based steering" of higher education. Politicians want to pursue similar European-wide policies, whereby often a quantitative target-setting is advocated and even agreed upon, e.g., an expansion up to 40 % of the average graduation rate by 2020 (advocated by the European Commission) or an increase of the rate of students having been mobile during their course of study up to an average of 20 % across European countries by the year 2020 (advocated by the ministers involved in the Bologna Process). But efforts to improve the respective databases on the European level are, by no means, targeted and quick. The situation can be illustrated with regard to three themes relevant in the Bologna Process: student mobility, links between study and graduate employment and work, and the role of higher education in the social selection of students.

Data on student mobility: Most quantitative analyses of student mobility in Europe—for example, in accordance to the Bologna objectives, on intra-European student mobility and on students from outside Europe studying in Europe—actually refer to data collected by UNESCO, OECD, and Eurostat. Until recently, these data provided information for most countries on the number of foreign students, even though many foreign students have lived and learned in the host country prior to study and, thus, are not genuinely mobile, having not crossed the border for the purpose of study. Moreover, these international statistics do not include short-term mobile students in the majority in countries, although the Bologna target of increasing intra-European mobility has primarily short-term mobility in mind (or "credit mobility" or "temporary mobility"), rather than "diploma mobility." A documentation of the strengths and weaknesses of the available data (Kelo et al. 2006) led to an increasing number of countries collecting data on foreign mobile students, defined through the location of prior residence or of prior education. But as a recent study shows, a number of European countries have not yet introduced such data collection and no efforts are made at an international level to systematically collect data on short-term mobility and to separate them from data on diploma mobility (see Teichler et al. 2011). Finally, surveys of students close to

the time of graduation or graduate surveys, ideally covering all European countries, would be needed in order to establish the "event" of student mobility, which is the proportion of students having spent at least a short study period in another country during the course of their study.

Data on graduate employment and work: Official employment statistics provide, at best, data on the occupational categories of persons holding a degree. For more detailed information on the relationship between study and graduate employment and work, graduate surveys are needed. Suitable graduate surveys are regularly undertaken in some European countries (see Schomburg and Teichler 2011), but they differ so much that little international comparison can be made. In 1999, researchers from various European countries undertook the "CHEERS" study and the "REFLEX" study in 2005, with financial support from the European Commission. These studies both looked at graduate employment and work in more than ten European countries. Data were also collected on students' biography and study experiences, thus, allowing the researchers to study the relationships between biography, study, and study success, as well as employment and work (see the comparison of the studies in Teichler 2009a; cf. Schomburg and Teichler 2006; Allen and van der Velden 2011). However, no subsequent decision has been made to undertake such a European study on a regular basis.

Data on sociobiographical disparity in higher education: Detailed information on the underrepresentation of students with particular sociobiographic dimensions can be collected with the help of the Eurostudent survey. It would be possible to add some questions in order to have a broader picture of underrepresentation, e.g., of migrants. But in order to establish what role higher education plays in social selection as compared to prior education on the one hand and the labor market on the other, longitudinal studies of secondary school leavers (an approach popular in the USA) or graduate surveys taking a retrospective view would be more suitable.

12.7 Problems in Analyzing the Role of Higher Education in the Inequality of Opportunity

As pointed out, analyses published in recent years on the underrepresentation of students according to particular sociobiographic dimensions have opted for relatively simple data presentations, because more complex and comparable data were not available for a large number of European countries. Moreover, we note that, in recent years, conceptual frameworks guiding the discourse on higher education and equality often look quite superficial, as if they have overlooked the debates of the 1960s and 1970s, when issues of equality of opportunity in education were higher on the political and research agenda than the current situation (cf. for example the overviews in Karabel and Halsey 1977; Teichler et al. 1980).

The recent empirical debate focuses on the underrepresentation of certain socioeconomic groups in higher or tertiary education. In most popular publications,

the lowly represented groups are weighted by the share of that group in the reference population, for example, measuring how the percentage of students with blue-collar parents compares to the percentage of blue-collar workers among the labor force at the typical age of students' parents. In relation to issues of equality of opportunity in higher education, the following questions need to be raised.

First, what is the extent of underrepresentation in secondary education, in access to higher education, at the end of study, and at entry, and during the course of subsequent employment and work? The literature suggests that the extent of underrepresentation of disadvantaged groups between access to higher education and "success of study" (completion vs. dropout, grades, etc.) is the least socially selective one. This raises not only the question of whether higher education is inappropriately blamed for the overall social selection, but also what role higher education could play in counteracting inequalities.

Second, in the process of expansion, we might observe a statistical artifact as far as equality is concerned. Highly expanded higher education systems might appear more egalitarian, because more socially disadvantaged groups might enter higher education more or less automatically in the wake of "universal higher education." It would be more appropriate to measure the historical change of inequality or to compare inequality across countries if a certain quota of top educational attainments was held constant. For example, one might find that the children of the top quintile of the educational attainments of the parental generation, as a rule, account for, on average, half of the students in the top quintile of the study places in a given country. If there was an enrolment rate in higher education of 20 % in the parental generation, all higher education would be included, and if there was a current enrolment rate of 40 % in higher education, only the top half of higher education has to be included. However, this top half might be defined in the specific country at the respective historical moment in time (according to the type of higher education, field of study, reputation of the individual institutions, students' grades, etc.).

Third, the last point has to be addressed more specifically. Comparative studies tend to opt for the same set of criteria. For example, ranking studies tend to establish a single set of criteria and a common scheme of weighting these criteria, thereby creating biased results. If, for instance, academic productivity is measured as the number of publications in peer-reviewed journals of international standing in the English language, an underrepresentation is methodologically induced for native speakers of other languages and for academics from disciplines or countries where other modes of publication, such as books, are highly appreciated. Or, the academic reputation relevant for students might rely too much on the reputation of research in one country, while in another country, it might rely more strongly on the selectivity at entry to higher education, and in another country, still more on the career success of graduates. Finally, the issue of institutional reputation might differ between countries: whether the reputation of the university as a whole plays a role or the reputation of the individual disciplines within a university as well as whether a higher education system in some countries is highly stratified while the institutional pattern in another country is "flat." As a consequence, ambitious comparative studies on higher education cannot employ uniform criteria, but, rather, have to create varied but functionally equivalent criteria.

Finally, each methodological choice implies conceptual choices. In the current empirically related debates, terms such as "equity," "equality," and "equality of opportunity" are often taken as synonyms. In the debates of the 1960s and 1970s, it became clear that a distinction was needed between "equality of opportunity" on the one hand and "equality of results" on the other. The latter might be represented by the measurement of overrepresentations and underrepresentations. "Opportunity," however, might differ from the results for many reasons: that information is lacking, that the abilities to take opportunities are fairly uneven—see the increased popularity of biological concepts in this area since the 1970s—and that persons might opt for not taking advantage of the opportunities available to them.

12.8   The Current Conceptual Dichotomy

In characterizing the current conceptual debate about higher education and equity, Brennan and Naidoo (2008, pp. 288–289; cf. also Brennan et al. 2009) note a clear dichotomy between "liberal (or reallocative)" and "elite reproduction" theorists. With reference to Moore (2004, pp. 38–39), it is pointed out that liberal theorists assign functions of progressive social change to education by:

- "Producing the human capital required by an increasingly high-skill, science-based economy;
- Promoting the civic values and behaviour appropriate to advanced liberal democracy;
- Developing a meritocratic selection system whereby people can achieve social status by virtue of their actual abilities and contributions rather than having it merely ascribed by the accident of birth;
- Facilitation of an open society characterized by high levels of social mobility reflecting the relationship between ability and opportunity."

Reproduction theorists are described as seeing the educational processes in terms of how they:

- "Reproduce the privileges and dominance of the ruling class (e.g., through access to educational advantages leading to elite jobs and social positions);
- Secure the legitimacy of capitalist social relations through the inculcation of the dominant ideology;
- Block the development of a counter-hegemonic working-class consciousness that could effectively challenge capitalism;
- Systematically prepare pupils for their differentiated future positions with the capitalist economy and social structure."

Such a dichotomy in the theoretical literature is pointed out in many analyses (see, for example, Solga et al. 2009). And some researchers seem to assume also that there are similar political dichotomies. Archer, for example, argues that the New Labour policy in the United Kingdom has "hijacked and evacuated" the

equality language to put it into service of the "neo-liberal agenda" (as quoted in Miklavic 2010, p. 14).

In various respects, the dichotomy, as spelled out above, might provide an exaggerated picture. First, many politicians and scholars concentrating on under-representation and deploring a relatively high degree of inequity according to certain dimensions adhere to Marxist concepts of capitalism and the potential of the working class, and harbor views which might be more appropriately viewed as explicit or implicit concepts of critical functionalism.

Second, we note a broad spectrum of political parties and positions, as well as different prevailing views of the social order in European countries. For instance, there are countries with a strong neoliberal leaning, countries with "social market economy," "familistic" countries, countries with a strong egalitarian emphasis, etc., reflecting different views about the role of "equity," "social inclusion," or "social cohesion" in overall policy. Clearly, this has strong implications for their higher education policy. See, for example, the analysis of the role of such general societal climates within the various European countries for vocational training presented by Preston and Green (2008).

Third, a pragmatic view on empirical findings neither supports the view of a more or less persistent inequality nor that of a gradual continuous disappearance of inequality. Most experts, however, agree that differences in the participation of children from lower socioeconomic strata in the prestigious sectors of higher education has not changed much over the last four decades, while the prior underrepresentation of women among students has not faded away, but, in some countries, has, in fact, been substituted by an overrepresentation.

Interpretations of the existing situation of equity or inequity are based on such dichotomic views and are, by no means, convincing. For example, Brennan and Naidoo (2008, p. 280) present Altbach's view as an example of a liberal interpretation of the current situation. He observes increased opportunities for social mobility, higher income levels associated with higher education, and an opening up of academe to women and "historically disenfranchised groups worldwide" in expanded higher education systems. Altbach concludes that "inequalities remain, but progress has been impressive." It is not difficult to show that the reduction of underrepresentation according to various highly relevant criteria is, by no means, "impressive."

On the other hand, the "equity advocates" are no more convincing in lamenting the unchanged inequities. The dramatically increased access of women to higher education is downplayed. Also, the critique as regards to the introduction of an increase in tuition fees as a measure of increasing inequity ignores models of socially balanced repayment regulations, which can be socially fairer than just low or no tuition fees. Finally, the critique of the relatively low transition rates from vocational education and training to higher education often seems to assume that the limited recognition of vocational competence by higher education is primarily driven by a desire to preserve privileges for academically trained persons. Such a critique obviously downplays the different cognitive backgrounds of the various educational sectors. Finally, many equity advocates view existing

underrepresentations as indications of inequity, no matter whether some gradual reduction has taken place or not. In considering the question "how much is much?," any underrepresentation is regarded as "much" inequity, as long as not any more or less equal representation is reached.

These arguments notwithstanding, it seems appropriate to argue that the debates on higher education and equality of opportunity, in spite of the complexities of the actual empirical findings, of the existence of intermediate positions, and of the limited plausibility of extreme dichotomic arguments, often end up in dichotomic notions. There is not only a dichotomic jargon (equity vs. inequity, social exclusion vs. social inclusion, etc.), but also a dichotomic notion of society: either there is a persistence of the privileges of the privileged, or there is a more or less perfect open society.

12.9   A Shaky Meritocratic Dream?

The elite reproduction arguments in the current political and academic debates suggest that both the traditional and largely socially immobile societies, where parental background has largely determined the opportunities of the following generation, and modern meritocratic societies are both more or less equally the enemies of a just and equitable society. This is a second major difference from the debates in the 1960s and 1970s on the role of education for the social order. The debate at that time was not only conceptually and methodologically more sophisticated than the current debate, but it also did not consistently consider a meritocratic order as supporting inequity.

In the debates on equality of opportunity in the 1960s and 1970s, there was a widespread view that an educational meritocracy would challenge the privileges of the privileged and, thereby, serve as a means of reducing inequality of opportunity. An educational meritocracy would be described at that time as follows (see Husén 1972, 1987; OECD 1975; Teichler 1977).

- First, the educational meritocracy is characterized by certain links between background, education, and occupational careers, namely: (a) open education system, where educational success is not determined by sociobiographic background, (b) educational success is determined by achievement, and (c) the professional career and accompanying social status are strongly influenced by educational achievement.
- Second, there is a close interaction of the qualifying and the status-distributive function of education in the process of the modernization of society: (a) on the one hand, education is opened up to the previously disadvantaged in order to stimulate a growth of competences, (b) on the other hand, the eventually remaining inequity of the graduates is legitimized as being achievement-based.
- Third, there is a close link between meritocracy and equality of opportunity: the combination of open education and determination of careers by achievement in

education encourages the belief that meritocracy destroys the traditional privileges of the privileged and, thus, ensures equality of opportunity.

It is clear that we have observed a "cooling down" of the hopes set in an educational meritocracy. Four directions of cautions are clear.

- First, underrepresentations do not completely fade away. Among others, the principle of educational meritocracy does not completely rule, but some traditional privileges survive. The more the level of attainment increases, the more employers feel free to look at additional competence ("personality"), which is, only to a limited extent, shaped by educational success. Finally, the more the social determinants of unequal educational success diminish, the more biological differences might make the difference (Young 1961).
- Second, in an open education system, where success in precareer education is highly relevant for occupational success, competition for educational success might become so fierce that the valuable potential of education are undermined.
- Third, the occupational reward of educational success might become artificial. As educationally enhanced competence is important, but difficult to measure, the credentials achieved become so valuable that credentials are rewarded irrespective of their validity in really indicating competence—a phenomenon called credentialism.

The latter phenomena have been pointed out often with respect to Japan, where Dore (1976) observed a "diploma disease" and Galtung (1971) noted a "degreeocracy." But they were, to a certain extent, also visible in the early stages of higher education expansion in the USA, where the term "credentialism" was coined (Collins 1979; see the more recent debate in Bills 2004).

As a consequence, we cannot be surprised that the "educational meritocracy" or the "education-based achievement society" cannot be viewed as resolving all the problems of sociobiographic disadvantages in higher education. But any "reproductionistic" argument putting meritocratic inequity into the neighborhood of premodern determination of status by birth can be only viewed as deliberate distortion.

12.10   Future Prospects

How will the relationships develop between higher education and the social order change in the second decade of the twenty-first century? We could refer to various elements visible in the preceding decades and extrapolate the trends:

- Does inequity grow as a product of the increasing emphasis on "rat race" competition, entrepreneurial spirit, etc.?
- Do the debates on global competition, world-class universities, and research investments for technological innovation and related economic growth suggest

that all attention will be paid to elite higher education and, thus, disregard a search for talent among the hitherto disadvantaged?

- Does the growing emphasis on "personality," "key skills," etc. increase barriers against equality of opportunity?
- Do we move, in contrast, further towards "postindustrial values," i.e., less emphasis on the parts of high proportions of the university graduates on income and status, but instead—for example—a higher appreciation of a "good" or "satisfying" job, a growing weight of intrinsic values, an increasing interest in a "work–life balance," and a growing emphasis on the "civic function" of higher education?
- Will the attention shift away from equality issues within single countries to equality issues across the world?

The author of this chapter is convinced that policies as regards (higher) education and the social order in modern societies are shaped by the coexistence of four principles:

- Educational meritocracy,
- Acceptance, to a certain extent, of the privileges of the privileged,
- Interventionist policies in favor of the disadvantaged, and
- Room for individual luck and smartness.

Each country is searching for its own acceptable and desirable coexistence between these four principles. We might consider the early years of the twenty-first century (and certainly some of the earlier years) in European countries as being characterized by a neglect of policies in favor of the disadvantaged. The increasing talk about the "social dimension" in the framework of the Bologna Process might be viewed as a start towards a "counterbalancing" of the "imbalances" of the preceding years. But, overall, meritocracy is the overriding of the four principles, with the others providing a corrective function of making a meritocracy acceptable. The concern about "equality of opportunity" might rise, but it is not likely to be a top priority.

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Chapter 13
The University as Public Goods: Ethical Underpinnings

Stephen P. Heyneman

13.1 Introduction

Higher education helps contribute to the public good in several ways. It helps provide knowledge about social and legal contracts, what they mean, and why they are important. It helps provide behavior which is expected under social contacts, behavior of trust in part through the heterogeneous experiences which the young have while they are students. Higher education also helps provide an understanding of the expected consequences for breaking social contracts (Heyneman 2000, 2002/3). As one specialized group studying the issue put it:

> Educated people clearly have many effects on society: educated people are well positioned to be economic and social entrepreneurs, having a far-reaching impact on the economic and social well being of their communities. They are also vital to creating an environment in which economic development is possible. Good governance, strong institutions, and a development infrastructure are all needed if business is to thrive – and none of these is possible without highly educated people (Task Force on Higher Education and Society 2000, p. 39).

These constitute some of the rationales for public investment in higher education. Excellent universities perform these functions well. This generates attention to the best of these institutions, defined as "world-class" universities. World-class universities can be defined in many ways, but there is general agreement that they exhibit: (i) a concentration of talent from around the world in terms of students, faculty, and research interests; (ii) abundant resources from multiple private and public sources, research awards, contracts, endowment, and tuition; and (iii) enabling internal governance with supporting regulations, autonomy, academic freedom, and professional management (Salmi 2009; Altbach 2004). To this list, a new set of characteristics concerning an enabling macro policy environment have

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been added. These included: state incentives to improve quality and diversity, independence of licensing and accreditation agencies, open competition for scientific research in which universities participate, exception from taxation, clear title to university property, autonomy from governmental managerial regulation, institutional differentiation in mission, and permission to garner a wide variety of income sources (Heyneman and Lee 2013).

On the other hand, it has been noticed that many universities are threatened by problems of corruption. Higher education can be corrupt through the illegal procurement of goods and services; cheating in the provision of normal functions (admissions, grading, graduation, housing); professional misconduct (favoring family members, sexual exploitation, bias in grading, research plagiarism); and cheating in the payment of taxes and the use of university property (Heyneman 2002/3, 2010, 2011). Student surveys of Bulgaria, Moldova, and Serbia have revealed that between 35 % and 45 % believed that the official selection process could be bypassed. Approximately one of five admitted to having bribed a university official; in Moldova, the figure was two in five. Within universities, a wide variation exists in the propensity to bribe. Disciplines in the highest demand—economics, finance, and law—have higher compensation for entry, higher tuition fees, higher potential for graduate earnings, and, hence, higher stakes. These disciplines are more likely to be corrupt (Heyneman et al. 2008).

Corruption has a negative effect on quality. The university becomes a high-priced, low-quality good if officials admit or give high grades to the less qualified. Instead of increasing international competition, corruption limits it. Since honesty rests on the proof of a lack of violations, a university suspected of being corrupt reduces the power of its graduates in the labor market. With the private sector, and particularly with companies that draw from international labor markets, the effect of having a reputation for corruption may be more serious than with local governments and state-owned enterprises.

Corruption negatively affects both private and public social economic returns to investments in education. If students can purchase grades, they have less incentive to earn learn. An employer does not know whether the student completed the degree on the basis of academic ability or because he or she bribed university officials. The signaling value of a university degree is reduced. Employers reduce risk by avoiding graduates from suspect institutions and by putting into place testing, internship, and other filtering mechanisms. Graduates need to accept significantly lower salaries until they can demonstrate their economic value through on-the-job experience. Graduates from universities suspected of corruption are not likely to be considered for technical and professional jobs. If they acquire government jobs where the potential for bribes is high (customs, police, etc.), the private income costs of corruption are reduced, but the social costs remain (Heyneman et al. 2008; Heyneman 2011).

Key to understanding the pernicious effect of higher education corruption is to understand that, unlike a criminal case, universities are "guilty" unless they can prove their innocence. Universities which claim to have no problems are not free of

the perception of being corrupt, but the opposite. This is why many universities, including my own, require administrators, faculty, and students to sign a code of conduct and, in the case of administrators and faculty, to sign a conflict of interest statement annually (Annex one). Incoming students are not only asked to sign a code of conduct, but their names are posted on the wall of the student union displaying their signatures. Students, faculty, and administrators are reminded periodically of the need for integrity and what to do when there are infractions (Annex two). There is a student-run system of honors councils to hear cases of infractions and recommend sanctions. There is a similar faculty-run system to hear cases of faculty infractions. Annual reports from the honors council are publicly available. These reports will list the infractions by category, the decisions made, and sanctions in each case. The names of the accused are kept confidential. Mission statements may include the definition and recognition of "harmful activity" to the university. This may include fraud, waste or abuse of resources, misuse of grant money, research fraud, violations of athletic or medical regulations, theft or embezzlement, conflicts of interest, procurement fraud, threats to personal safety, discrimination or harassment, academic misconduct, standards of conduct, and violations of data privacy (Annex two). We were curious if this sort of attention to ethics was common to universities in other countries.

We began by creating a list of possible ethical elements. These included whether or not a university had:

- A mission statement
- An honor code for students
- An honor code for faculty
- An honor code for administrators
- A system of adjudication in the case of infractions
- A statement of non-bias in hiring
- A statement of the criteria used in faculty promotion
- A statement on fairness in admissions
- Transparency in budgets and accounting
- Adjudication procedures in case of infractions
- Faculty handbook
- Reported ethical infractions\
- Results of ethical infractions
- Other elements uncovered as the project progressed

We also noted whether a university was affiliated with a religious institution, public or private, for profit, its language of instruction, location, and whether, in addition to offering a first degree, it offered postgraduate degrees (Annex three).

Since we had no access to internal documents, we decided to base our assessment solely on the basis of a university's public information displayed on its website. Of course, a university may have an ethical infrastructure not mentioned on its website, and universities which do mention ethical elements on its website are no guarantee that the university is free of corruption.

We began by gathering and training research assistants capable of working in languages in addition to English (Annex four). We divided the research assistants into country (not language) teams. These included teams to work on Japan, Korea, the People's Republic of China, Hong Kong, Taiwan, Armenia, Russia, Georgia, Germany, Britain, the USA, Canada, Australia, and France. The first task of each country team was to locate a complete list of the nation's higher education institutions.[1] Once a country's master list was approved, a random 10 % sample was chosen and the websites of that 10 % sample were analyzed (Annex five). Separately, we used the THES of 400 highly ranked universities as our source for world-class universities (http://www.timeshighereducation.co.uk/world-university-rankings/2011-2012/top- 400.html.) From the THES list, we took a 10 % random sample and analyzed their websites (Annex six).

13.2 Results

Universities differ dramatically in their propensity to mention ethical issues or to describe elements of their ethical infrastructure on their websites. In Kazakhstan, Gabon, Kyrgyzstan, and Armenia, ethical infrastructures were absent altogether from university websites. In Britain, Canada, Hong Kong, New Zealand, and Korea, they were universal, nearly universal in Australia (91 %), and very high in Georgia (84 %), the USA, and Germany (79 %) (Table 13.1).

Knowing the portion of university websites mentioning one ethical infrastructure element may not be as revealing as the number of elements mentioned. These ranged from 9.5 in Britain and 8.3 in Canada, 2.8 in Russia, and zero in Armenia, Kazakhstan, and Kyrgyzstan. Germany has a surprisingly low number of elements mentioned, perhaps on the grounds that the internal websites would be more explicit than those open to the public (Fig. 13.1).

Both Russia and Belarus had a high percentage of their universities which mentioned an ethical issue on their websites (77 % and 80 %), but neither included much more detail. The average number of infrastructure elements was 1.4 in Belarus and 2.8 in Russia. This suggests that the emphasis on ethics may have been more for pro forma reasons than a genuine concern. In terms of languages, the highest number of infrastructure elements can be found in universities using Japanese, English, and Korean (Fig. 13.2).

Ranked universities appearing in THES were situated in over 40 countries. Virtually all of them (97.5 %) mentioned ethical elements on their websites. The typical THES university mentioned 9.2 different elements, higher than any nation's

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[1] Two-year institutions and those with no undergraduate degree programs were eliminated. All accredited institutions were included, public, private, and for-profit.

Table 13.1 Universities with ethical infrastructures

Country	(%)	Average number of infrastructure elements
THES universities[a]	98	9.2
Britain	100	9.5
Canada	100	8.3
Hong Kong	100	6.0
Japan	100	7.7
Korea	100	6.9
New Zealand	100	3.0
Singapore	100	4.5
Taiwan	100	6.7
Australia	91	7.4
France	91	2.4
China	90[b]	4.8
USA	88	7.6
Georgia	84	5.2
Belarus	80	1.4
Germany	79	0.9
Russia	77	2.8
Armenia[c]	0	0
Gabon	0	0
Kyrgyzstan	0	0
Kazakhstan	0	0

Notes:

[a]Times Higher Education Supplement (THES)

[b]Chinese websites usually cited the general law on corruption across all sectors

[c]Many of the better universities in Armenia have documents describing the regulations pertaining to student conduct and ethics. These might include the American University in Armenia and Yerevan State University, which have student handbooks and codes of ethics. However, none of them happened to fall into the sample

universities, save Britain. The correlation between the number of elements mentioned and the level of THES ranking ($r = 0.14$) was neither strong nor statistically significant. This suggests that the number of ethical infrastructure elements is not a factor in the level of ranking. However, the more important question may be whether candor about an ethics infrastructure is associated with attaining any THES ranking. Given the fact that virtually all ranked THES universities, across all 40 countries, mentioned ethical infrastructure suggests that it is an important ingredient associated with other elements in a university's reputation.

Among THES universities, the most common elements to mention were regulations pertaining to academic integrity and the goals of diversity and equity in enrollment and employment (82.5 %), budgetary transparency and non-bias in hiring (77.5 %), and codes for student conduct and research ethics (75 %). Less common were results of ethical infractions (12.5 %) and proportion of ethical infractions found to be justified (10 %) (Fig. 13.3).
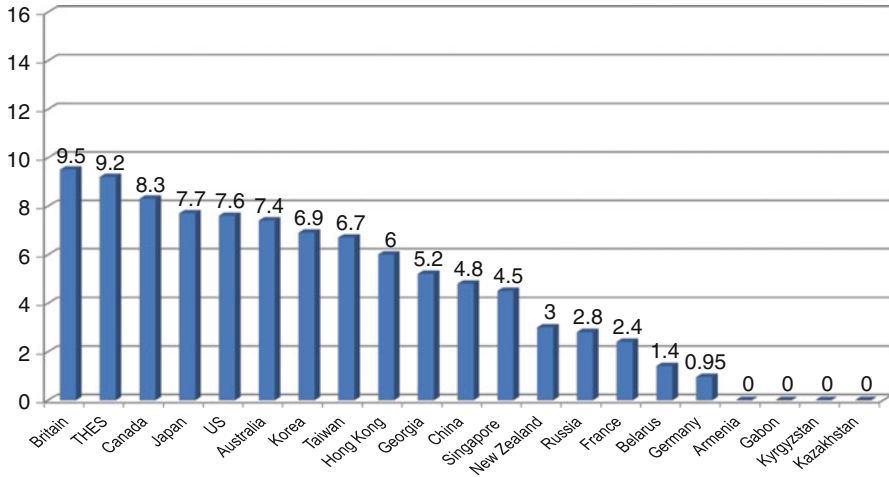
Fig. 13.1 Average number of ethical infrastructure elements by country
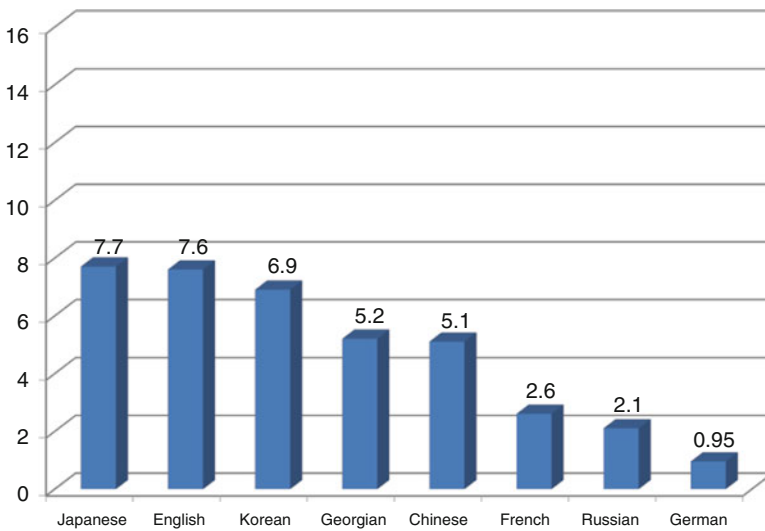
Fig. 13.2 Average number of ethical infrastructure elements by language

13.3 Focus on the USA

Of the 205 universities which fell into the 10 % sample from the USA, 49 offered specialized degrees in technology, law, or religious studies. About one in three of these were for-profit institutions (Table 13.2).

These specialized institutions tended to have a lower number of ethical infra-structural elements (3.7). For-profit colleges stand out among this group and against the general tendency of non-profit higher education institutions. Although
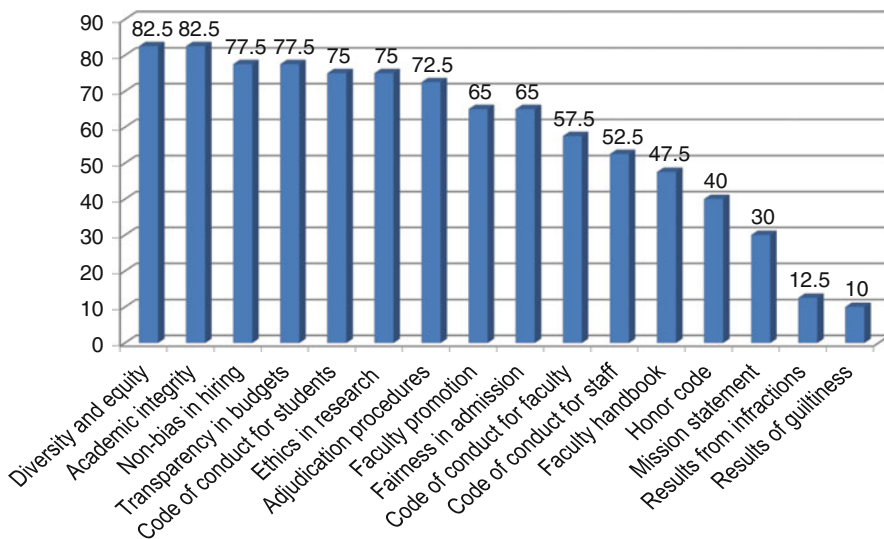
Fig. 13.3 Presence of ethical infrastructure elements (THES) (%)

Table 13.2 American higher education institutions with specialized vocational functions

Type of institutions	Number of institutions			Average number of infrastructure elements		
	All	Non-for-profit	For-profit	All	Non-for-profit	For-profit
Seminary, including bible colleges	17	17	.	2.9	2.9	–
Art-related	11	6	5	4.5	5.2	2.6
Medical, health-related	12	7	5	4.4	3.6	4.8
Technology	5	2	3	2.4	5.5	0.3
Law school, including law-related	4	3	1	4.25	4.3	4
Total	49	35	14	3.7	4.0	3

vocationally oriented for-profit institutions had a higher number of ethical infrastructure elements in the medical field, in the arts, law, and especially in technology, they did not. In technology-oriented institutions, the average number of ethical infrastructure elements was 5.5 among non-profit institutions and only 0.3 in for-profit institutions. This suggests that for-profit institutions which specialize in technology are particularly divergent from their non-profit rivals in their concern over ethics. In general, for-profit institutions tended to have a very low number of ethical infrastructure elements (3.6) (Table 13.3).

If one excludes for-profit and vocational institutions, the average number of ethical infrastructure elements typical on the websites of American universities (9.6) is higher than any other country in the sample and higher than the average institutions in the THES ranking. This suggests that for-profit institutions are simply not as interested in combating education corruption as non-profit institutions.

Table 13.3 American higher education: average number of ethical infrastructural elements: for-profit and non-profit institutions

Type of institutions		Number of institutions	Average number of infrastructure elements
Non-for-profit	All	169	8.4
	(Excluding vocational institutions)	(134)	(9.6)
For-profit		36	3.6
Total		205	7.6

13.4 Summary

To combat education corruption, a university will need to do more than mention ethical behavior on its website. But a university's concern for ethics is unlikely to be effective without mentioning the ethics problem on its website. Virtually all highly ranked universities are concerned with ethics; they mention more ethical elements on their websites than other universities, and they are more likely to be transparent as to the annual number and type of ethical infractions.

On the other hand, there are universities situated in sample countries such as Kazakhstan, Kyrgyzstan, and Gabon where the typical university mentioned nothing about professional ethics on their websites. What does that suggest about them? Circumstantial evidence would suggest that the universities which are silent on the issue of professional ethics are also universities which are widely perceived to be corrupt. They tend to be situated in countries where education corruption is known to be high (Silova et al. 2007; Heyneman 2007a, b; Heyneman 2013) and where the business climate is characterized by a high degree of corruption. Kazakhstan, for instance, is ranked 120 and Kyrgyzstan 164 out of 182 countries in the corruption index of Transparency International (Transparency International 2011). These data from our small study would suggest that universities which do not mention professional ethics on their websites are at the highest risk of being corrupt themselves.

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Part IV
The Future of the University
at the Crossroads

Chapter 14
Restructuring University Systems: Multilayer Multiple Systems

Jung Cheol Shin

14.1 Introduction

This book started with a conceptual framework to simplify the complicated challenges with which the contemporary university is confronted, and to bring some insights to the challenges and the future of the university. The focus has been on how to realign teaching, research, and service functions in contemporary higher education. The modern university was developed on the heritage of the ancient and medieval university, where teaching was the main mission. Later, the modern university added the research function from the German model and the service function from the US model. In terms of access to university, the modern university has moved through elite, mass, and post-massification stages. Today, tertiary enrollment in the most advanced countries is over 40 %, which means that most advanced countries are in the post-massification stage.

The post-massification stage is distinct from the mass or elite higher education stages in terms of their main actors, value orientation, the relative weight between teaching and research, etc. However, the contemporary university also retains its links with the elite and mass higher education stages. Excellence, the main value of elite higher education, coexists with the value of equality of the mass higher education. These complexities became more apparent in the post-massification stage with the emergence of globalization and knowledge economy. With globalization, universities are aggressively involved in internationalization activities; the world-class university has emerged as a signal of global competitiveness in the knowledge economy and university competitiveness is measured by global rankings (Shin 2013). Because of the environmental changes, university expenditure has grown exponentially during the last few decades. At the same time, however, public funding for higher education is decreasing in the wake of the

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global economic crisis, and universities have begun to charge or increase student tuition fees in many higher education systems.

We discussed the historical development and environmental changes in Part I and then focused on how to realign teaching, research, and service activities in contemporary university in Part II. We discussed how to find a balance between the three different types of academic scholarship—teaching, research, and service. We proposed that teaching and service functions should be weighted more in the contemporary university, and we proposed that research functions should be more socially contextualized, so that university research better contributes to society. In Part III, we proposed how to realign the different dimensions of academic scholarship through systemic changes. For example, future higher education systems could be reshaped, and faculty evaluation and reward systems aligned to balance academic scholarships.

This chapter proposes a transformation of the contemporary university in the post-massification stage. In the last section, we present a tentative model for the future of the university.

14.2 Issues to Be Discussed for Restructuring the University

14.2.1 Lessons from Modern University Ideals

We should start by considering the ideals espoused by the early modern university designers in building the modern university in the early nineteenth century. An historical overview gives insights on the ideals of the university, including the three functions (teaching, research, and service). These core issues are still at the center of contemporary higher education. Reviewing these issues enables us to position current higher education in line with the historical development of the university. The modern university was an innovative social institution in the late 1700s and the 1800s, when the social enlightenment movement blossomed in Europe. At that time, the modern university was designed to eliminate the medieval privilege of the old university and its professionals (e.g., medical doctor, lawyer, and priest). Old-fashioned privilege was based on medieval guild systems. The reformers confronted three main issues in restructuring the university in the 1800s (e.g., Ben-David 1977; Clark 1983), and these issues have implications for diagnosing and discussing the future of the modern university.

- One issue is whether the university trains professionals and endows licenses. In France, reformers decided to train professionals at an independent institution (grande école) and the university was responsible for educating intellectuals in general. In Germany on the other hand, reformers decided to use the new university to train professions as well as teaching intellectuals.

- The second issue relates to who is in charge of research, and this emerged with the scientific and technological developments of the 1700s and early 1800s at a time of intellectual enlightenment. In Germany, the reformers decided to assign research to university professors, while the French reformers decided to leave research with individual scholars.
- The third issue is about whether university education should emphasize broad liberal arts or disciplinary subject knowledge. The British university system emphasized broad liberal arts, while the German university emphasized discipline-based higher learning. The US systems combined liberal arts in undergraduate programs and discipline-based subjects in graduate education.

The issues that the modern university developers were struggling with have implications for contemporary higher education and our discussions for the future of the university.

14.2.2 Considerations for Designing the Future

We slightly shift the three issues we discussed above based on the goals of this book. The contemporary university faces dilemmas similar to the modern university designers of the nineteenth century. This current dilemma is how to resolve the conflict between undergraduate education and graduate education, between teaching and research, and between pure and applied research.

Undergraduate and Graduate Education

Professional training, once a critical issue, is not as much of an issue in many contemporary higher education systems because most universities have professional training programs. The issue in the USA and in many higher education systems is whether professional training should be placed in undergraduate or graduate programs (e.g., Ben-David 1977). For this reason, we replace the first issue with that of the division into undergraduate and graduate education.

The division into undergraduate and graduate was developed in the USA, which placed the German ideals of the research university at the top of the undergraduate programs, thereby, creating dual systems in the university. The graduate program did not have a hierarchical structure in relation to the undergraduate program when the Johns Hopkins University was established in 1876, but the hierarchical structure was institutionalized as other universities adopted the idea of graduate programs (Ben-David 1977). The notion of research was integrated at the German university as a system, but this was institutionalized as a dual system in the USA. However, undergraduate programs differed from graduate programs on many dimensions, including their education goals.

Because of the differences between undergraduate and graduate education, the USA manages the university with slightly different terminology between graduate and undergraduate education. In the US research universities, research-productive professors focus on research and teach graduate programs. On the other hand, teaching-efficient professors focus on teaching undergraduate programs. Accordingly, their evaluation weights teaching and research differently, depending on their major activities (Glassick et al. 1997; O'Meara and Rice 2005). However, the complexity of dual systems was not given much consideration in many developing systems. This division of labor was not adopted by most developing higher education systems. Consequently, a core issue is how to minimize the complexity caused by combining graduate and undergraduate programs.

Teaching and Research

The second issue concerns the different features of the two core functions of teaching and research. Although most contemporary universities now conduct both teaching and research, this is a recent trend. French universities and those that follow the medieval tradition define themselves as teaching institutions. The university was a teaching institution in the former Soviet Union and other communist systems. France, Latin American countries, and the former communist systems assigned teaching to university and research to independent research institutes (Schimank and Winnes 2000). This was also the case in China. However, the strong influence of US universities has seen this change. Even so, whether the university should conduct both teaching and research remains a controversial issue.

According to many empirical studies, a research-driven teaching model does not work in current university education (e.g., Marsh and Hattie 2002), though there are controversies between higher education scholars (e.g., Horta et al. 2012; Shin 2011a). This is because contemporary research is rarely incorporated into classroom content, especially for undergraduates. Shin (2011a), for example, found a negative association between teaching and research at the undergraduate level. Undergraduate teaching does not place much value on research. The differences between teaching and research are presented in Table 14.1.

If policymakers emphasize the differences between teaching and research, higher education systems may split the research function from the university and assign it to independent research institutes. It is quite possible in an era of rising tuition fees where undergraduate students pay a share of the costs that research requires. Research is an activity that requires a high level of resources. However, the splitting off of research from teaching is almost impossible in contemporary higher education because academics have such a strong belief in research-driven teaching. In this context, research-focused universities, especially world-class status pursuing universities, need to be realigned toward a better balance between teaching and research.

Table 14.1 Differences between teaching and research

	Teaching (learning)	Research
Goals	Human development	Discovery of knowledge
	Transmission of knowledge	Application of knowledge
	Facilitating student learning	Synthesis of knowledge
Main actors	Professor as teacher	Professor as researcher
	Student as learner	Student as research assistant or as a coresearcher
Perception of knowledge	Knowledge as learning object	Knowledge as object of discovery
Preferred education level	Undergraduate education	Graduate education
Relationship between professor and students	"Interaction" between professors and students	"Collaboration" between professors and students
Relation to benefit generation	Not related	Related
Costs	Relatively low	High

Pure and Applied Research

In discussing "research" as a function of the university, we need to consider details of the types of research. Broadly speaking, "research" consists of three types in the university context—pure research, applied research, and development research. The latter has been growing in recent years because many companies and government organizations outsource their development research to universities, and because this type of research generates a large percentage of university revenues (Slaughter and Rhoades 2004). In point of fact, both applied and development research share commonalities.

Pure researches do not necessarily generate benefits, and, thus, private sectors are less likely to engage such researchers. In the elite university stage, most university research is in this category. Some applied research is an application of theory to social and industrial practices, and the research may or may not bring benefits to researchers and/or the university. However, the proportion of applied and development research has grown rapidly, and a large share of university research is applied and development research, especially in the higher education systems in the East Asian countries (for details, see Fig. 14.1).

Pure research can easily be incorporated into classroom knowledge, whereas applied and development research is related to practice and tend to bring more external resources into the university. In terms of revenue generation, applied and development research are preferred, but in terms of education, pure research is preferable. In the marketization society, the share of applied and development research is increasing in many disciplines (Slaughter and Rhoades 2004). As a result, there is a decoupling between education and research, especially between education and applied/development research.
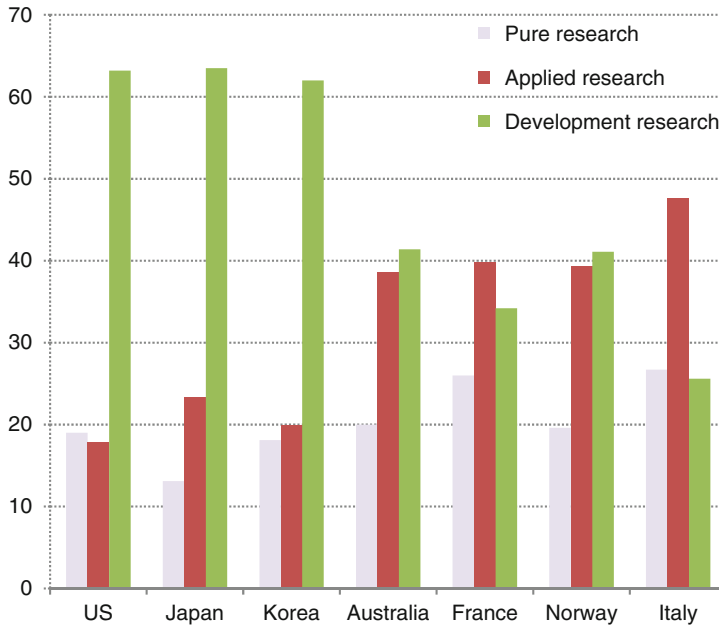
Fig. 14.1 Share of research funds in pure, applied, and development research (Data source: OECD (2009): R&D expenditure by sector of performance and type of R&D)

14.3 Multilayer Multiple Systems

14.3.1 An Alternative Model: Multilayer and Multiple Systems

The problems of the contemporary university are caused by its institutional features of multifunctional organization. As discussed in Chap. 2, the modern university has adopted different functions at different stages. Because of this multifunctional complexity, most universities are pursuing conflicting values at the same time, e.g., valuing education is different from valuing research; valuing pure research is different from valuing applied research, and so on.

The solution to the dilemma might be found in an alternative approach. Considering that the contemporary challenges are caused by the functional complexity of the university, multilayer organizational forms might lessen this complexity. This is not about splitting university by functional types, but thinking about how to effectively coordinate different functions within the university—undergraduate and graduate education, and pure and applied/development research.

As shown in Fig. 14.2, applied and development research do not link well to undergraduate education. Therefore, a critical issue in a multilayered organizational structure is how to coordinate these functions in different organizational forms. For

Fig. 14.2 Four dimensions of research and education

Level of Education	Type of Research
Graduate education	Applied/development research
Undergraduate education	Pure research
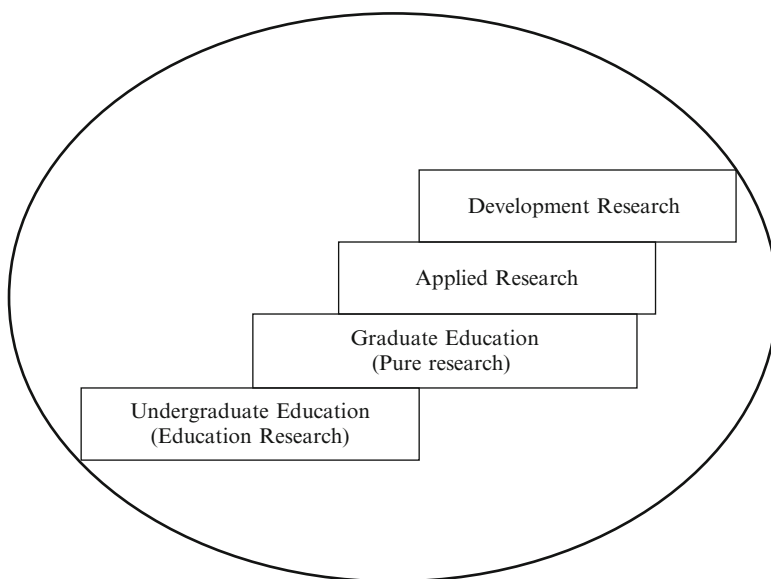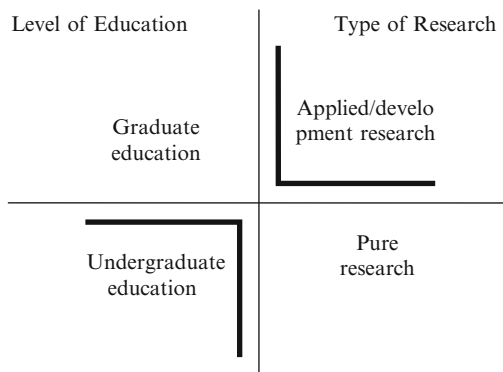
Fig. 14.3 Structure of multiple layers

Development Research

Applied Research

Graduate Education
(Pure research)

Undergraduate Education
(Education Research)

that purpose, a university may establish different organizational units for undergraduate education, so that the undergraduate education may have different governance, finance, quality control, and personnel systems from those for applied research. The organizational form for education should be different from that established for research, especially applied/development research. As shown in Fig. 14.3, undergraduate education has some things in common with graduate education, which, in turn, overlaps with applied research, there are less commons between undergraduate and applied, especially development, research. Organizational complexity could be lessened by having different administrative units for undergraduate, graduate, and applied research units.

Table 14.2 Differences between education and applied research

	Undergraduate education	Graduate education/pure research	Applied/development research
Goals	Human development	Human development Production of knowledge	External resource generation
Governance	Shared	Shared	Top-down (business organization)
Finance	Public funding	Public funding Some external resource	External resource
Personnel	Professors as teacher	Professor as teacher/researcher	Professor as researcher
Quality control	Quality assurance	Excellence of research	Customer satisfaction/ market value

For example, current university organization comprises unified systems across all three of these, so that members from each of them participate in university-wide decision-making. However, because of the complexity, decision-making in university administration takes time to arrive at a grand compromise. A compromise between opposite value orientations often produces irrelevant, untimely, and wasteful results, not favorable to students, professors, or staff (Shin 2011b). One solution is to allow each academic unit to have autonomous decision-making, so that each of them can make efficient and contextually relevant decisions. In many US research universities, the distinctions between the different functional forms across the three sectors have been put in place. For example, they have (to some extent) different academic units for undergraduate education. However, it is not the case in most developing systems.

The organizational forms across the three sectors differ in their organizational goals, governance, finance, personnel, quality controls, etc. Table 14.2 summarizes the differences. The functional differences are relatively well represented in US universities, where, historically, graduate education has been above undergraduate programs, and collaboration with the private sector has been relatively well incorporated into external business units. However, these functional forms are mixed in many developing systems that have not experienced these historical stages of development. These systems simply copied some functions from the US university system and added new functions from their existing organizations. For this reason, this discussion and proposal in this book may make better sense to developing higher education systems.

14.3.2 Benefits of Multilayer Multiple Systems

By adopting different organizational forms, a university might better realign its goals and mission, as well as their constituencies (e.g., students and professors). More specifically, a university could benefit from efficient decision-making,

provide better benefits to each constituency, quality of education, excellence of research, generate maximum external resources, and gain more support from society. The differences between undergraduate, graduate, and applied/development research are presented in Table 14.2.

Efficiency of decision-making.   Decision-making in a university is always complicated because of the complexity of the value orientation. As discussed, educational values often conflict with the emphasis on research, especially commercially oriented research. Through the organizational changes, the university might achieve more efficient and relevant decision-making.

Benefits to professors and students.   The organizational changes also bring benefits to the organizational constituencies. Students, especially undergraduate students, pay lower tuition fees and receive high-quality teaching. The unit cost for education is much cheaper for undergraduate students and they receive better service from their university. Professors are able to align their activities according to their preference for teaching or research. Research-productive professors teach graduate courses and conduct their research. Their evaluation and rewards depend on their research productivity, with some consideration given to their graduate course teaching. If they choose to conduct applied research, they spend more time on their research and contribute to their university by bringing in external resources. In this situation, professors are evaluated and rewarded based on the external funding they bring into the university.

Quality of education. Professors and instructors can concentrate on teaching, spend most of their time on preparation for class, and can also spend more time with their students. Professors and instructors are able to focus on the education goal of human development and contributing to students' competency development. The changes result in high-quality education and greater student satisfaction, which is a core value of the post-massification of higher education.

Excellence of research. Research-oriented professors can concentrate on their preferred work, which is graduate course teaching and research. Teaching graduate courses is quite different from teaching undergraduate courses, although both are categorized as "teaching." Through the organizational changes, professors can link their research with their graduate teaching and, so, accomplish their ideal of research-driven teaching. This should lead to better quality research and better trained graduates.

Maximum external resource. The organizational changes enable researchers and professors who are seeking external resources to concentrate on their preferred work, while attracting maximum external resources. The value for external resources may be the opposite of the value for education, but by minimizing these potential conflicts, the organizational changes bring in more external resources.

Better service for society. The organizational distinctions will clarify the service functions. As discussed in Chap. 9, service functions are difficult to understand

because of the complexity of organizational functions. Through the organizational changes, undergraduate education units will focus on community service activities such as participating in community activities, providing lifelong education programs, etc. Graduate education units will focus on producing high-quality research that benefits society and business. Also, graduate units will contribute more to society by improved the training of professionals. The applied research units will contribute to society through providing solutions for social problems. These are the ways that universities can contribute to their society through their specialty as a professional social institution.

14.4   Conclusion

The complexity of the university is related to the historical development of the modern university. As it has developed, the modern university has added new functions from teaching to research and service. In the process of development, the US model updated the German model by adding graduate programs above undergraduate education. These evolutionary changes have contributed to the status of contemporary US higher education. Compared to many US universities, European universities have maintained their tradition of modern university ideas dating back to the nineteenth century. When universities in Europe and elsewhere began to import ideas well established in the US university system, problems emerged.

This chapter began with the major controversies with the emergence of the modern university and sought insights for contemporary higher education. In the overview, this chapter showed that the contemporary university faces dilemmas similar to the modern university designers of the nineteenth century. As a potential solution, this chapter proposed a multilayer approach, which allows autonomous decision-making by different academic units—undergraduate education, graduate education, and applied research units. While this approach clarifies the problem, the multilayer approach does not provide clear organization forms, i.e., how to organize and coordinate between these three units. This complexity needs further study and discussion by higher education scholars who need to devote more attention to the organizational complexity of the modern university and its academic culture.

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Chapter 15
On the Move Towards a New Convergent Design of Higher Education Systems?

Ulrich Teichler

15.1 Introduction

Changes in the patterns of higher education systems and of the functions of various sectors become clearly visible when major official decisions are taken in individual countries to revamp the system, for example, through a new legislation about higher education. Through such decisions, for example, new types of higher education institutions might be established or an existing institutional type might be upgraded formally. Similarly, levels of degree programmes and types of final certificates might be changed. A careful analysis, however, shows that major changes are often underway latently and shape the systems de facto, even if no formal rearrangements are made. For example, the current discourse on "world-class universities" might be connected to increasing differences of quality and reputation among universities within each country.

All over the world in recent years, we have seen signs of changes in higher education and heard discussions about potential changes that seem to call for a substantial alteration in the pattern of the higher education system. While we observe substantial similarities across countries at first glance, the advocates for changes often argue that their proposals are backed by worldwide developments. A closer look, however, reveals, in many instances, quite divergent phenomena. Therefore, it is interesting to look across economically advanced countries in order to explore whether we are on the way towards a convergent model of higher education systems or whether we note various models persisting or newly emerging.

Certainly, we note, across countries, a similar debate in regards to some *factors calling for a reconsideration of the patterns of higher education systems*. Three factors seem to play a significant role everywhere.

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First, *an increase in the social demand for higher education and an actual growth of student enrolment*: As also pointed out in other chapters in this volume, the expansion of student enrolment is one of the major factors driving a reconsideration of the character of the higher education system as a whole and for a realignment of its sectors. Access to tertiary education has surpassed rates of 50 % in the majority of economically advanced countries and even gets close to 100 % in some countries (see various analyses in OECD 2008). We also note that graduation rates of 40 % of the age group reaching at least a bachelor degree have already been realized in various countries and are assumed to be reached soon in others. It is generally pointed out that enrolment growth implies an increasing diversity of the overall student body in terms of motives, talents, and job prospects. This seems to call for increased diversity of study provisions, but trends and policies vary as regards to the overall degree of "vertical" and "horizontal" diversity, as well as regarding the major modes of diversity (e.g., levels of study programmes and degrees, institutional types, informal differences according to quality and profiles).

Second, *changing curricular approaches* and changing competencies of students upon graduation, reflecting dynamics in employment and work, as well as in other life spheres. There are continuous debates about the distinction between a "professional" or "vocational" emphasis of study programmes on the one hand and on the other, a "general" or "academic" emphasis (see the overview of the debates in Teichler 1999). We note strong pressures for an overall strengthening of the "vocational" or "professional" role. This is due to the fact that most occupations traditionally held by non-graduates and now increasingly filled by graduates in the process of the massification of tertiary education tend to rely on targeted precareer specialized training. Moreover, the recent spread of the term "employability" suggests that a targeted preparation for the world of work is increasingly expected, notably in countries traditionally having been accustomed to a weaker linkage between higher education and the world of work. On the other hand, arguments are made in favor of a broader linkage between the competencies enhanced in higher education and the subsequent work tasks. As future quantities of study and employment are less predictable in the growing societal and economic dynamism, generic skills might help to adapt to unpredictable situations; moreover, study programme with a strong general emphasis or with an emphasis on "key skills" are often viewed as a superior model for a lifelong learning society.

Third, the *changing role of research* in higher education and the changing linkages between the educational and research functions of higher education. For example, it is often taken for granted that a divide will persist between a balanced research–teaching nexus at doctoral degree-awarding institutions on the one hand and a marginal role of research at other institutions of higher education on the other hand. This divide is constantly challenged, as the term "academic drift" underscores. Finally, the current preoccupation with "world-class universities" suggests that another divide is becoming more important—namely, between high-quality research universities and "the rest."

For a long time, emphasis has been placed on the distinction between institutions putting emphasis on basic research and others pursuing "applied" research. In some European countries, for example, institutions of higher education not named "universities" have traditionally opted for the term "universities of applied science." Leading universities in many countries of the world responded to the "knowledge economy," with the claim that they can serve basic research and applied research equally well. Moreover, the number of experts who consider the traditional divide between basic and applied as outmoded has grown.

Besides analyses emphasizing such factors, many concepts can be observed in regards to the *overall dynamics of change in higher education* that might be relevant for the explanation of changes in the patterns of the higher education systems. We note four types of concepts.

First, some concepts focus *specifically on the development of patterns of higher education systems*. In this domain, Martin Trow's (1974) concept of "elite higher education" is supplemented in the process of growth of student enrolment by "mass higher education," when the entry rate surpasses 15 %, and, eventually, by "universal higher education," when the entry rate surpasses 50 %.

Second, there are concepts addressing *individual mechanisms of change in higher education*. There is a widespread belief following the logic of system theory according to which growth leads to diversity. In contrast, other concepts point out the dynamics of limiting diversity, e.g., "academic drift," "professional drift," or a notion according to which higher education policies in general are shaped by an inclination to imitate.

Third, there are a multitude of concepts according to which *certain actual features of higher education or its context* are powerful driving forces and are likely to become even more influential. In recent years, we have heard such claims regarding globalization and internationalization, competition and entrepreneurialism, strategic management in higher education, etc.

Finally, there are concepts aimed at identifying *secular mechanisms of long-term processes of change in higher education*. For example, the author of this study had argued that, in the analysis of changes of the patterns of the higher education systems from the 1960s to the 1980s, a period of a dominant search for the single best option is likely to be followed by a period of diverse options. In the 1960s, substantial growth of higher education was expected to serve both economic growth and the reduction of inequality of opportunity, and one tried to find the single best pattern serving these objectives. After a while, it became clear that the belief in a potentially best solution worldwide was accompanied by a strong influence of persisting national idiosyncrasies, as well as by a multitude of political options, for example, different notions in regards to the desirable social order (see Teichler 1988b). As a consequence, some features of higher education have become more similar over time, but striking differences persist and continue to emerge.

Another example of a concept addressing such secular mechanisms can be identified here in order to illustrate the range of such concepts. The historian Guy Neave (2011) points out that international political power constellations have enormous influence on the choice of patterns of higher education systems. For example, the options for the Humboldtian university in Germany and the Napoleonic university in France were influenced by preceding wars, and the developments of higher education systems after World War II were strongly influenced by the East–West confrontation of ideologies and values. According to Neave, it seems premature to conclude what will happen after the collapse of this political divide around 1990: whether influences of nation states will cease in favor of a single dominant model or whether other constellations will emerge.

The prime aim of this chapter is to examine actual developmental trends of the patterns of higher education systems in economically advanced countries: do we head towards similar options across countries or will we continue to observe a considerable variety across countries?

15.2 Major Dimensions of Patterns of the Higher Education Systems

The key literature on patterns of the higher education systems (see OECD 1973, 1974; Ben-David 1977; de Moor 1978; Teichler 1988b, 2007; Meek et al. 1996; Shavit et al. 2007; Neave 2011) suggests that national higher education systems have demonstrated considerable diversity during the nineteenth century and the first half of the twentieth century.

It is generally assumed among experts that the differentiation of the higher education system substantially grew in economically advanced countries in the second half of the twentieth century. Also, experts seem to agree in assuming that the differentiation was, for a long time, primarily driven along the teaching function of higher education. Differentiation could be observed (see Teichler 2007, pp. 15–16; cf. also various country reports in Clark and Neave 1992; Forest and Altbach 2006) according to:

(a) *Length of programmes and levels of programmes and degrees*,
(b) *Types of higher education institutions*,
(c) *Curricular approaches of study programmes and/or institutions*,
(d) Varied "*informal*"—*vertical (reputation and prestige) and horizontal (profiles)— characteristics* among formally equal institutions and programmes.

It is interesting to note that international education statistics published by UNESCO and other supranational agencies are classified only according to levels of study programmes, as will be explained in detail below. This suggests that levels of study programmes are the most frequently employed internationally and the least controversial dimension in the description of patterns of higher education systems.

This does not mean, however, that there is a consensus for the relevance of the various dimensions. Trow's frequently cited classification of elite, mass, and universal higher education is functionally oriented, but does not name any structural dimension. Frequently employed umbrella terms in recent decades—for example, in publications by the OECD, the international organization that has been the most active in the international discourse on patterns of higher education systems—have been:

- "short-cycle higher education" (OECD 1973),
- "non-university higher education" (e.g., Taylor et al. 2008), and
- "alternatives to universities" (OECD 1991).

In other words, one term addresses the length of study programmes and two focus on institutional types.

The following analysis will address all four dimensions. In this way, attention will be paid to the relative weight of these dimensions over various periods in various countries.

As pointed out above, the author of this analysis in convinced that *the public discourse on patterns of the higher education systems can be divided into three historical stages*:

- In the first stage, up to the 1950s, higher education was not conceived as "diverse" or as a "system." The university was viewed as the primary type; other institutions and programmes might exist but they were not on a par with universities and their programmes.
- In the second stage, from the 1960s to the 1980s, the notion of a "higher education system" prevailed, with formal diversity according to institutional types and/or levels and, possibly, types of study programmes.
- The third stage, since the late 1980s, might be characterized by: (a) the notion of "tertiary education" stretching beyond "higher education," (b) a search for a divergent system of study programmes and degrees in Europe, (c) the gradual blurring of previously existing clear distinctions in many countries between "academic" and "professional" or "vocational" programmes and institutions, (d) a stronger role played by the research function of higher education in the notions of diversity of higher education systems, and (e) an increasing emphasis placed on informal elements of diversity, notably "vertical" differences according to "quality" or "reputation" of institutions or study programmes.

Of course, as already pointed out, such a historical model raises the question as to whether the current stage will persist or whether we will see signs of the emergence of a further stage.

15.3   The Traditional Dominance of the University

Until the 1950s, analyses and public discourses on higher education rarely employed the term "system" in this context. If used at all, "university system" was a more widespread term in comparative analyses than "higher education system." In many countries, it was customary to focus only on universities and pay little attention to institutions not on a par with universities, i.e., often highly specialized institutions such as engineering colleges and teacher colleges. For example, only in countries coming late to industrial modernization, e.g., the USA, Japan, and Russia, was engineering integrated into the university system from the outset. Such specialized institutions have grown over the years in status and, eventually, were recognized as universities.

This tradition of just focusing on the university certainly dominated in most European countries, for example, in Germany and Britain. The term "university" was applied traditionally to multidisciplinary, doctoral degree-granting institutions. The clear dominance of this type is reflected in the fact that the European Rectors' Conference (CRE) and, subsequently, the European University Association (EUA) accepted only doctoral-granting institutions as members until the 1990s. This notion also exerted a powerful influence on the upgrading of institutions. In Europe, most specialized institutions of higher education not traditionally accepted as on equal terms succeeded, in the 1970s, in being upgraded to full university status.

Three other models, however, need to be mentioned. First, in France, *grandes écoles*—not universities—are seen as the apex of the system in terms of providing the most prestigious employment opportunities, although not having any substantial research function (see Musselin 2006). Second, in the USA, large numbers of institutions of higher education with no significant research role were established. "College" became the umbrella term for such institutions. Third, there is a wider notion of universities in East Asian countries. The term, usually translated into English as "university," e.g., *daigaku* in Japan, is employed for all institutions awarding at least a bachelor degree.

In the 1960s, however, "higher education system" became the most favored umbrella term. This was linked to the notion that the growth of enrolment rates cannot and should not be accommodated solely or predominantly through long study programmes, through programmes with a strong "academic" thrust, and through institutions with a close nexus of teaching and research. In fact, a more diversified pattern emerged in most economically advanced countries, but there was no consensus in regards to the dominant dimensions of diversification. In some countries, formal diversification was characterized by more than a single level of study programme below the doctoral level, in other countries by more than a single type of higher education institution, and in some countries by both, i.e., two or more programme levels and two or more institutional types.

Since the 1980s, various supranational bodies have advocated the use of the term "tertiary education." This moves away from the notion that post-secondary education is "higher" as a rule than secondary education in terms of more demanding and

complex processes of teaching and learning, but also comprises more years of learning. However, notions differ substantially by country. In some countries, no word is identical or correspondent to "tertiary education." In some countries, a certain type or various institutional types serve such a sector.

In many publications, the term "tertiary education" is employed with respect to study programmes referenced in international statistics as "ISCED 5B" (in UNESCO terminology) or "Tertiary Type B" (in OECD terminology). This might comprise, in some countries, short—mostly 2-year—programmes considered to be "higher education," as well as tertiary programmes up to the length of bachelor programmes that are offered by other institutions with vocational emphasis.

15.4   Unified or Multitype Systems

In the 1960s and 1970s, additional types of higher education institutions were established in various European countries in response to the growing social demand for higher education. The British polytechnics, the German *Fachhochschulen* and the French *Instituts Universitaires de Technologie (IUT)* were most often named as prototypes of this new development, but many other European countries opted for similar solutions (see Taylor et al. 2008).

Accordingly, higher education systems with a single dominant institutional type were often described as "unitary" or "unified," and Italy was often named as an example. Other systems were characterized as "binary," "two-type," and "multitype" systems. It should be noted that such characterizations, as a rule, referred only to sizeable institutional types; for example, colleges of fine arts differ in many countries from other institutional types without being referred to in overall characterizations of higher education systems.

Terms such as "unitary," "binary," etc. were usually only employed if the respective higher education system was viewed as strongly shaped by institutional types—not, however, if the system was viewed as clearly characterized by levels of study programmes. For example, various names of institutional types are customary in the USA, e.g., universities, colleges, junior, and community colleges, etc., but the US system is generally described as a system characterized by levels of study programmes.

Other institutions differed from universities in various respects. For example, British polytechnics were similar to universities in regards to the entry requirements and the levels and lengths of study programmes. In contrast, prior learning for entry to German *Fachhochschulen* could be 1 year shorter and did not have to be via the academic track of secondary education, and the degree programmes at *Fachhochschulen* were shorter than those at universities (see Kehm and Teichler 1992; Kehm 2006). The IUTs specialized in short programmes, mostly 2 years in duration.

Terms such as "unitary" or "binary" systems gained popularity in the 1970s. They did not refer to the institutional setting of "ISCED 5B" or "Tertiary Type B"

which became a major policy issue only in the 1980s. This additional sector could have varied institutional homes within a single country. Japan is an interesting example of such a variety. Students registered in the UNESCO statistics in ISCED 5B are those enrolled mostly in, firstly, 2-year programmes at junior colleges with a formally similar entry qualification as universities, second, at colleges of technology that integrate upper secondary education and short higher education into a 5-year study programme, and, third, at special training colleges with 2-year or 3-year post-secondary vocational education programmes not considered to be "higher education" (see Yoshimoto 2011).

In most countries with more than a single type of higher education institutions, universities, as a rule, differed from other institutions in at least in two respects:

- Universities were conceived to serve both teaching and research in a more or less balanced way, while other institutions had a limited research role.
- The right to award doctoral degrees was confined to universities.

In individual countries, further distinctions might be viewed as characteristic. For example, in some countries, other institutions do not provide study programmes at the master level or even at the bachelor level; alternatively, the typical entry qualifications might vary according to institutional type.

15.5 Lengths and Levels of Study Programmes

In international comparisons of higher education systems since the 1960s, we notice more of an emphasis placed on study programmes than on types of higher education institutions. This seems to be appropriate, because higher education is not divided across all countries similarly according to institutional type. Moreover, when the comparison of higher education systems becomes relevant, notably in the assessment of prior learning of internationally mobile students, the years of prior study and other features of the study programmes are often taken as very important criteria, while the institutional type is often viewed as only one of several indicators of the quality of study.

We are accustomed to describing higher education systems with a strong emphasis on levels of study programmes. As a result, the level tends to be characterized primarily by the required length of study and—in the case of advanced levels—of the required overall length of study up to a certain level of certification. This is most pronounced in France, where study programmes are described as "bac+2," "bac+3," "bac+5," etc., according to the years of study beyond secondary education up to successful completion. For example, a degree at *grandes écoles* is usually a bac + 5 degree, i.e., achieved after at least 5 years, i.e., 2 years at *classes préparatoires* or at universities and 3 years at *grandes écoles*.

The classification of study programmes according to the required length of study traditionally takes for granted a modal type of study: full-time study of young persons, whereby the students spend more than half of the year at an institution of

higher education. We note striking differences in regards to the extent to which the students actually correspond to this modal type, for example, regarding official part-time study, programmes for adults, distance education, etc. In addition, we note striking differences by country according to the proportion of students actually studying longer than the required period of study. In some countries students graduate, on average, after less than 110 % of the required period, and in several European countries, after about 150 %.

According to overviews on study programmes in Europe in the late 1980s, first study programmes at universities vary in the required length by 3–6 years. Programmes at other institutions of higher education range from 1 to 4 years (Teichler 1988a; Jablonska-Skinder and Teichler 1992).

The required length of study can be viewed as a useful tool to determine the approximate level of competence achieved. For example, temporary student mobility within Europe works well based on the assumption that fourth-year students have more or less the same level of competence, whether the fourth year of study is the first year of a master programme subsequent to a 3-year bachelor programme, the final year of a 4-year programme, or the fourth year of an even longer study programme.

In characterizing study programmes, however, we often name the level of the study programme and, subsequently, characterize the level through the length of this programme and possibly the length of preceding programmes. In that case, we would conclude that a fourth-year student who enrolled in a master programme subsequent to a 3-year bachelor programme would be on a higher level than a student who enrolled in the fourth year of a 4-year bachelor programme.

In the process of the modernization of universities from the nineteenth century to the emergence of notions of mass higher education in the 1960s and 1970s, only two structural features seem to have applied to the university systems in almost all economically advanced countries:

- At least two levels of degrees emerged, whereby the former (e.g., bachelor in England and Wales, Magister, Staatsexamen or Diplom in Germany, Laurea in Italy, Doctorandus in the Netherlands, etc.), was viewed as the typical prerequisite for access to jobs sometimes called "graduate jobs," and the latter, the doctoral degree, was considered to be the prerequisite to the academic profession and other research occupations.
- At doctoral-awarding institutions and units, a close link between teaching and research was considered normal in the work assignment of the academic staff.

But even these features could not be found consistently across countries. Notably, varied practices emerged in regards to the levels of programmes and certificates below the doctorate. Two distinctions are common (see Jablonska-Skinder and Teichler 1992):

- In many countries, a distinction is made between a "normal" higher education programme on the one hand and programmes that were somewhat shorter and possibly less academically demanding on the other hand. In the UK, for example, the certificates of the former programmes tend to be called "degrees" and

those of the other programmes "subdegree level certificates" (whereby the latter might be called "certificates" or "diplomas").

- In Anglo-Saxon countries and other countries following their models, two levels of study programmes and degrees were established below the doctoral level, i.e., two levels of degrees usually leading to employment in "graduate jobs." The former, mostly named "bachelor," required predominantly 3 years of study in the English tradition and 4 years of study in the US tradition, while the subsequent "master" level required, as a rule, 1 year in the English model and 2 years in the US model. In contrast, a single study programme for most fields of study was common until the 1990s in most European countries. The first degree, awarded mostly after 4 or 5 years of study, tended to be viewed as equivalent to an Anglo-Saxon "master."

The notion of having two levels of higher education degrees other than a doctoral degree spread internationally over a period of years. However, even today, this is not fully supported, e.g., many European countries opted, in the first decade of the twenty-first century, for a bachelor–master model (see CHEPS et al. 2010). This is shown by the fact that international organizations collecting statistical information on students, notably UNESCO and OECD, still divide higher education study programmes into two levels: one comprising both bachelor and master programmes, as well as other types of first degree higher education programmes (e.g., ISCED 5A in UNESCO terms), and the other comprising doctoral and other advanced programmes (ISCED 6).

In the USA, a divide emerged in the nineteenth century between "undergraduate education," leading mostly—after 4 years of study—to a bachelor degree, and "graduate education" or "professional education." In many bachelor programmes, an initial general education phase was introduced, and some bachelor programmes were viewed as crossdisciplinary throughout, often deemed as serving "liberal education." The majority of bachelor graduates in the USA transfer to the world of work and, often, acquire the necessary professional competencies in the period of initial professional training while being employed. Those continuing study in the USA either strive for academic careers or for higher-level occupations. In some professional areas, notably medicine, law, business studies, and teacher training, study beyond the bachelor level at graduate and professional schools is viewed as an indispensible professional training period. The term "graduate education" is the period of learning from the award of a bachelor to the doctorate, usually with a required "time to degree" of 5 years, no matter whether students are awarded a master or a similar degree after 2 years or whether they can spend these 5 years in an integrated graduate programme leading directly to the doctoral degree. The notion of a divide between "undergraduate education" and "graduate education" became customary in many other countries. However, this is by no means an established divide across economically advanced countries.

There have also been differences between countries in regards to the "level" and the quality of a doctoral award. Over the years, however, the US notion of the doctorate level has become widely accepted, i.e., the need to spend about 3 years of

learning and research work beyond the master level in order to be awarded the doctoral degree.

There is less consensus, however, with regards to the status of doctoral candidates (student, candidate, employed researcher, etc.), their supervision, elements of courses, modes of examination, etc. Further, we note that, in some countries, there is a divide between academic and professional doctorates, while in other countries, such a distinction does not exist. Finally, the role of the doctorate varies in terms of the academic career. In some countries, the doctorate has long been the prerequisite for professor positions at universities, while this has become true for other countries only recently. In some countries, a higher-level entry qualification for the professoriate has been established, for example, the *Habilitation* in German-speaking countries.

Altogether, the number of years of study seems to be the mostly frequently used yardstick for comparing study programmes within and across countries. In some instances, this is modified by levels of degrees. For example, a bachelor degree might be viewed as indicating the same level of competence, irrespective of whether the required period of study is 3 years or 4. This does not mean, however, that other criteria do not have a role. In addition, noteworthy differences might exist regarding entry qualifications, curricular thrusts of the study programmes, as well as informal reputational differences between individual institutions or departments.

In a substantial number of countries, we note differences in the formal entry qualification for study programmes and institutional types. For example, the successful completion of academic secondary education is the usual entry route to university programmes in the German-speaking countries and in the Netherlands, while vocational upper secondary education with 1 year less of overall schooling is considered to be the normal entry route to study programmes with a strong vocational emphasis that are also provided at other institutions of higher education.

It should be noted that, in rare cases, the entry qualification and, more frequently, the actual entry selection can vary at institutional types and at individual institutions by fields of study. Institutions of higher education, as a rule, are internally structured according to disciplines or fields of study (that are often closely linked to individual disciplines), and the units in charge of disciplines or disciplinary groups—often called "faculties" or "departments," "schools," etc.—are the units admitting students. The USA is a notable exception, where bachelor students are mostly admitted to the university as a whole and opt later for specific study programmes.

15.6   Curricular Thrusts of Study Programmes

In most countries of the world, we note general trends about the relationships between institutions of higher education as a whole and the world of work. For example, it is frequently emphasized that a university has a "theoretical" or "academic" thrust, even though striking differences in this respect according to

discipline are known. In contrast, other institutions of higher education might be described as "applied" or "vocational." For example, German *Fachhochschulen* started calling themselves (in the English translation) "universities of applied sciences" in the 1990s in order to claim parity of quality and esteem among other universities, while underscoring their distinct character of teaching and learning, as well as research. Many similar institutions in various European countries have adopted the term "universities of applied sciences" as well.

However, there are significant country differences in the extent to which the individual study programmes of universities are understood to lead clearly to certain occupations or whether there is a less distinct articulation between the individual fields of study and respective subsequent employment areas (see the international comparison of curricular approaches in Lattuca 2006; cf. the country chapters in Clark and Neave 1992; Forest and Altbach 2006). The former relationship, common in European countries, is often called a "professional" linkage, while the latter, typical for Anglo-Saxon countries, is often called a "labor market" linkage (see Teichler 2009b, 2011).

In all countries—irrespective of a general professional notion of a looser relationship between fields of study and occupational areas—some fields of study are characterized by a strong work-preparatory task. This holds true in most countries for medicine, engineering, and teacher training, as well for law, economics and business studies, physics, and chemistry, in some.

In some countries, this stronger work-preparatory task in select subjects is linked to the weaker power of the university to award a degree or another mode of entry qualification to the respective occupation. For example, professions in the fields of engineering and business award a professional license after some years of professional experience and a university degree assures the candidate an exemption from a theoretical professional exam. In this manner, the professions have an enormous influence on the respective curricula at universities (see, for example, Goodlad 1984). In Germany, students in medicine, law, and teacher training are traditionally not awarded a university degree, but take a state examination at the completion of study jointly held by university teachers and state or professional representatives. There are various European countries where a degree in all fields of study is considered to have an "effectus civilis," thus being recognized as the entry qualification for all respective occupations (see Jablonska-Skinder and Teichler 1992).

In spite of these differences of the relationships between study programmes and subsequent professional work according to disciplines and according to countries, descriptions of higher education systems often characterize study programmes at universities as "academic" and possibly theoretically oriented, while programmes at other institutions of higher education are often named "vocational," "professional," or "applied." As already pointed out, another type of higher education institution or even more than a single type were established in a number of European countries alongside universities between the 1960s and the 1990s in order to diversify higher education. The curricular thrust of these institutions was viewed as differing from that of the one dominating at universities, and was often termed "vocational" or "applied." These study programmes were mostly viewed as

highly relevant for future employment, but, as a rule, they were not considered to be on equal terms to academic programmes at universities. So, a person successfully completing a 3-year or 4-year "vocational" programme could not just transfer for the respective fourth or fifth years of study to a university. The opportunities for transfer and the hurdles to be overcome varied considerably by country.

It is generally assumed that study programmes not leading to the bachelor level have a "vocational" thrust. This is taken for granted, irrespective of whether such programmes are provided by universities, other higher education institutions, or tertiary education institutions not considered to be "higher education institutions."

15.7   New Discourses, Policies, and Trends Around the Turn of the Century

Policies and trends in regard to the patterns of higher education, as they have become visible notably in the 1960s and 1970s in the wake of the first major wave of expansion, did not remain stable for long. We have already noted signs of changing conditions in the higher educational function since the 1980s. This was the period when, according to Martin Trow's classification, the stage of "universal higher education" was reached in various economically advanced countries, while most others followed in the 1990s or in the first decade of the twenty-first century.

Four themes highly relevant for patterns of the higher education system played a major role in the public discourses on higher education in most economically advanced countries in the recent two decades that might suggest a structural convergence across countries:

- The increasing formal diversity of higher education institutions through the emergence of a "tertiary education system,"
- The increasing formal similarity of patterns of diversity through the *emphasis placed on levels of study programmes and degrees* in all European countries,
- The *blurring of a divide between "academic" and "professional" or "vocational" higher education* and, in this context, the declining weight of an institutional divide between universities and other institutions of higher education, and, finally,
- The growing relevance of *informal vertical distinctions* between higher education institutions, as the "ranking" discourse suggests, and, in this context, the potentially *growing role of the research function* of higher education for the overall structures of the higher education systems.

Key international organizations, such as UNESCO, the OECD, and the World Bank, began campaigning in the 1980s for the new umbrella term *tertiary education* to replace *higher education*. Tertiary education should not only comprise higher education programmes, traditionally considered in most countries as at least 3-year programmes with a certain degree of academic emphasis and leading to a degree

often called a bachelor degree (ISCED 5A and ISCED 6 in the UNESCO classification), but, in addition, the new term should also cover 3-year study programmes without an academic emphasis, as well as any kind of shorter post-secondary programmes. For example, 2-year programmes were clearly viewed as belonging to this category, e.g., programmes at community colleges and junior colleges in the USA, which might be considered to be part of "higher education" in the respective countries.

In reality, the international organizations expected that this wider notion would be reflected in a different interpretation of the overall system of education beyond the age of about 18 years, as, for example, the OECD study "Redefining Tertiary Education" (OECD 1998) suggests. In fact, figures on entry rates and enrolments presented in recent years in the public debate about educational expansion are mostly those of tertiary education—regardless of whether those quoting the figures refer to "higher education" or "tertiary education." According to an overview published by the OECD, the entry rate to tertiary education had surpassed 50 % in the early 1990s in only a few countries. By 2005, however, various OECD member states had rates higher than 75 % (Teichler and Bürger 2008), and the most recent statistics show entry rates above 90 % in some instances (see Shin 2011). Clearly, this development can be viewed as the second major wave of higher education expansion. As predicted by the OECD in the late 1990s (OECD 1998), three-quarters of the population study, and employment without a tertiary education has become a reality in the twenty-first century.

However, this did not lead to a convergent model of diversity with similar proportions of ISCED 5B new entrant students as compared to ISCED 5A new entrant students. Rather, the majority of OECD member states did not create a sector of ISCED 5B as clearly distinct nationally from ISCED 5A. So, in some instances, ISCED 5B programmes were allocated in international statistics while remaining part of the existing system of vocational training. In some countries, all vocational training previously considered to be neither "higher" nor "tertiary" was upgraded to vocational bachelor programmes as part of the ISCED 5A level (see, for example the case of Finland in Schmidt 2006). As a consequence, the proportion of ISCED 5B new entrant students among the corresponding age group ranged in 2005 from none, as in the case of Finland, to 30 % and more, as in the case of Belgium, France, and Japan (Teichler and Bürger 2008).

There were various early signs of a growing weight of levels of study programmes and degrees at the expense of the weight previously placed on the type of higher education institution. In Denmark, a decision was made in 1989 to award all students a bachelor degree after 3 years of successful study, irrespective of the type of institution and whether the degree programmes usually required 3 or more years of study; this policy did not become widely known internationally. In 1992, the UK upgraded the institutions of the second type of higher education institutions, i.e., polytechnics, and this became a major issue in debates about the future of higher education. It was interpreted, in part, as a sign of the increasing quality of higher education at other institutions of higher education, and, in part, as a sign of blurring curricular distinctions between institutions as a consequence of an

"academic drift" at other institutions of higher education and of a "vocational drift" at universities, and, finally, in part, as a sign that the reputational differences between individual institutions of higher education had clearly outweighed the differences by institutional types (see, for example, Fulton 1996).

The weight of levels of study programmes and levels or degrees for the overall patterns of higher education systems increased most strongly through the so-called Bologna Process. The majority of European countries decided in 1999 in the *Bologna Declaration* to strive for a cycle structure of study programmes and degrees. This was advocated primarily in order to facilitate international student mobility, but also reflected the changing function of higher education at a stage of expansion when the majority of youth moved towards some type of tertiary education.

At that time, the majority of students transferred to the world of work with a bachelor degree only in the UK and Ireland. Otherwise, no bachelor-level degree existed at all (e.g., Italy), or it was the exit point for a minority of university students (e.g., France, Norway, and Spain), or the degree awarded at other types of institutions with a more applied emphasis was considered to be equivalent to a bachelor or slightly higher (e.g., Germany and the Netherlands).

The Bologna Process led, instead, to a substantial, somewhat convergent restructuring of higher education systems. By 2010, more than two-thirds of initial higher education degrees awarded in Europe were bachelor degrees. But it would be misleading to assume that Europe was on the way to a consistent and comparable "cycle" system of higher education (see Huisman 2009; CHEPS et al. 2010; Eurydice 2010; Curaj et al. 2012).

In various countries, some disciplines were exempted from the bachelor–master structure, e.g., medicine, law, and teacher training (see Sursock and Smidt 2010). The introduction of this cycle system did not lead to a discontinuation of types of institutions of higher education in countries where different types have played a major role in the past (see Taylor et al. 2008). In contrast to the USA, there was no notion of a dividing line between "undergraduate" and "graduate education" across Europe. Also, no convergent curricular model emerged of a progression from a general toward a specialized curricular thrust during the course of study. Moreover, no agreement was reached regarding a typical length of study programmes, as, for example, the predominant 4–2 system in the USA and the predominant 3–1 system in England, Wales, and Northern Ireland. Most bachelor programmes, in fact, vary between 3 and 4 years, most master programmes between 1 and 2 years, and the two programmes altogether between 4 and 5 years. Finally, the majority of university professors and students in those European countries where a distinction between a bachelor and master is completely new do not accept the bachelor as the exit point for the majority of students, but, rather, as an interim degree for students preparing for typical graduate jobs, and, actually, the majority of bachelor graduates continue to study up to the master degree (see Schomburg and Teichler 2011).

Fifth, there are some indications that differences between curricular thrusts might diminish. On the one hand, sectors of higher education previously considered to be in charge of a "vocational" and "applied" emphasis in teaching, and possibly

in research, seem to have become more similar over time to the "academic" universities. On the other hand, the discourse on "knowledge society" and "knowledge" has strengthened in many countries the notion that higher education has to become visibly more useful. The term "employability" is often used as a call to higher education to subordinate itself quantitatively, i.e., in the number of students and graduates, and qualitatively, i.e., the competences fostered, to the presumed demands of the employment system. This might mean a more targeted specialization of study programmes in those countries traditionally unaccustomed to a clear linkage between study programmes and subsequent work, for example, the UK (see, however, the more differentiated discussion in Knight and Yorke 2003). In other countries with a traditionally professional emphasis, the term "employability" (see the critique of the misleading term in Teichler 2009b) is used in a different way. For example, efforts to foster "key skills" are in the forefront of the curricular debate in Germany. It might be added here that the discourse about the changing role of higher education moving towards a lifelong learning society has gained momentum in this context as well.

It is difficult, however, to establish whether distinctions between a "theoretical" and "academic" thrust on the one hand and on the other hand, a "vocational" and "applied" thrust have really become marginal. Many factors come into play, such as possibly the increased imitation of top universities as a consequence of "ranking," employment opportunities for graduates, and the stability or change of professional traditions in the individual countries. Last but not least, changes in curricular thrusts cannot be measured as easily as, for example, increasing enrolment rates.

Finally, it is widely assumed that higher education systems might move towards increasing similarity in terms of informal vertical distinctions between higher education institutions. National systems of higher education have varied substantially in the past in this respect. For example, countries such as the USA and Japan were known for differences in the quality and the academic reputation of institutions of higher education. Countries such as the UK and France were also viewed as having a few exceptional institutions at the top, though the vertical differences across the system were considered to be clearly lower than in the USA and Japan. In contrast, the differences of quality between universities were conceived as being very low in Germany and various Northern and Central European countries. This, for example, made it easy for students in some of these countries to move from one institution to another during the course of study. National ranking studies of universities or departments and study programmes (often doctoral programmes) are widespread in some countries, but attention to differences in quality and reputation grew as the notion spread at the beginning of the twenty-first century that top universities are competitors on a global scale, as expressed by the increasing popularity of the term "world-class universities."

In recent years, global rankings of universities has become widespread (see Dill and Soo 2005; Sadlak and Liu 2007; Kehm and Stensaker 2009; Shin et al. 2011). There are many indications that these rankings not only functioned as descriptors of the informal vertical diversity, but as a trigger for policies to deliberately increase the vertical differences, for example, for the preferential funding of top institutions

(see Hazelkorn 2011). In this framework, it seems appropriate to argue that both the measurement of ranks and the policies in favor of increasing vertical differences have put a much stronger emphasis on the role of research than all prior discourses and policies regarding the patterns of higher education since World War II.

It would be an exaggeration, however, to argue that higher education policies in economically advanced countries in the first decade of the twenty-first century moved consistently towards a steeper vertical stratification of higher education. One could consider the emphasis placed in the Bologna Process on facilitating temporary international mobility of students as implying a call for keeping vertical differences within limits. Obviously, opportunities for temporary mobility are reinforced if quality differences between institutions and study programmes are relatively small and trust is widespread that a period of study somewhere else is equivalent to study at home (see Teichler 2009a). Moreover, many experts argue that the overall move of governance in higher education to increasing competition, the stronger power of the university management, increased activities of evaluation, and stronger output and outcome-based funding stimulates many universities to seek specific profiles. As a consequence, there is a greater increase in horizontal diversity, i.e., in terms of substantive profiles, than in terms of the publicly more visible vertical stratification. It might be appropriate to assume that the forces in favor of the increase of informal vertical differences are dominant; yet, this trend might be weaker and less consistent than the widespread preoccupation with rankings and "world-class universities" suggest.

15.8   Conclusion

The waves of increased enrolment rates in economically advanced countries after World War II, the first in the 1960s and 1980s, and the second beginning in the late 1980s, were each accompanied by international discourses on the search for the single best pattern of the higher education system. In the first wave, an increase of structural diversity was considered necessary, and diversity seemed to have increased to some extent. But the options remained varied in regards to the major modes of diversity and the overall extent of vertical and horizontal diversity. In the second wave, the search for the worldwide best solution was discussed with a tone of greater urgency because higher education was increasingly viewed as globally intertwined. Again, we see steps towards increasing diversity as well as some convergent signs towards similar patterns of diversity, but, altogether, national options remain more diverse than the claims of global forces and needs suggest. This can be illustrated by the title of a collection of recent accounts of the Bologna Process, which is the single most powerful political activity in favor of the convergent pattern of higher education systems: "European higher education at the crossroads: Between the Bologna Process and national reforms" (Curaj et al. 2012). If we do not get overwhelmed by the most visible political campaigns, we will conclude that no clearly convergent models of higher education systems are in

sight. The relatively open search for the best structural solution goes on, as another title has underscored for the past: "Between over-diversification and over-homogenization: Five decades of search for a creative fabric of higher education" (Teichler 2009a).

The OECD study "Redefining tertiary education" (OECD 1998) reminded us to be attentive to a new issue of higher education. How does the function of tertiary education change when study is the rule and only a minority has a lower level of educational attainment? Do our traditional expectations of rewards for investment in education, and our views on status and power and the overall social order fade away and what will be substituted? After the currently dominant discourse on the top sector of higher education loses its attractiveness, will there be a new discourse on patterns of the higher education system? And will the implications of the phenomenon that Martin Trow called some four decades ago—with some exaggeration—"universal higher education," be given more attention?

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Chapter 16
Conclusion

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The modern university evolved from elite to mass and post-massification. Through the development process, teaching-oriented premodern universities transformed themselves to be multifunctional—teaching, research, and service. However, the combinations of these three functions vary in different systems. U.S. universities combine teaching at undergraduate education with research at graduate education. Most other systems, including European higher education systems, are not coordinating these three functions well in one system. The German systems are influenced by a strong belief in the research-driven teaching model, but the model does not work well in massified or post-massified higher education. The French model has split the research function from the university and assigned it to research institutes. Outside of the U.S. and Europe, most universities focus on the teaching function and research is not given much preeminence, except in some countries, such as Japan, Australia, Canada, etc.

These systems confront challenges in the globalized society of the twenty-first century. With globalization, societies are favoring a "winner takes all" attitude and the phenomenon is clearly visible in higher education. Universities are now pursuing world-class status to attract more resources. World-class status is mainly obtained through the elite university ideals of research, which is now positioned at the center of the post-massified university. The competition between universities for world-class status became serious with the emergence of global rankings, which rank a university on the basis of its research productivity, and mostly by

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using bibliometric data. The balance between the three functions is threatened by world-class status competition in post-massified higher education.

In this book, we reviewed the three functions at the crossroads of the post-massification stage. In our discussion on teaching, we discussed some rationales for transforming university teaching and proposed a number of systemic changes for the future of the university. For the research function, we discussed the social meaning of university research from a wider viewpoint, and tried to conceptualize the multidimensional complexity of service functions. In addition, we discussed how to reorganize our evaluation and reward systems to motivate a balanced scholarship of teaching, research, and service; and, finally, how the university can be better public goods in a marketized society.

We set out to discuss and analyze in order to propose university ideals for the "third wave," but we ended up at the "crossroads" because the new phenomena confronting the contemporary university are too complicated. The competition for world-class status is part of globalization and the phenomenon should be addressed as a part of globalized social systems. Our next journey is to better understand the university as a social system in the globalized society. We can never correctly predict our future, or even understand what is going on in the present world.

The modern university was developed in the nineteenth century European society. The systems were well grounded in their traditions. U.S. universities have also incorporated the modern university ideas into their own contexts. Likewise, the rest of the world has imported and institutionalized the modern university ideas according to their own contexts. For example, universities are very hierarchical in East Asia, where organizational hierarchy has a long tradition, and also in the Anglo-American societies, where consumer choice has long been in place. In these regions, ranking mechanisms have been developed and the rankings became very influential when globalization and global rankings emerged. Now, institutional contexts are fading and universities across the world are becoming more similar. European universities also joined this wave through the Bologna Process of 1999 and the world-class university initiatives in the 2000s. Our next journey is to understand the phenomena, reality, and ideals in the complicated global systems.

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