Chapter 7
Small Steps Towards Student-Centred Learning

George M Jacobs and Hwee Leng Toh-Heng

Abstract Student-centred learning classroom practices are contrasted with those in teacher-centred learning classrooms. The discussion focuses on the theoretical underpinnings of the former, and provides nine steps and tips on how to implement student-centred learning strategies, with the aim of developing the 21st century skills of self- directed and lifelong learning in students.

7.1 Introduction

Over the past 200 years, the world, including Asia, has witnessed a global paradigm shift, which has impacted many aspects of society. This paradigm shift remains ongoing, and its impact has varied in different parts of the world. In general, we can see this shift as a move to distribute power in its various forms more evenly. For instance, 200 years ago, slavery was legal in many countries, few people could vote and socio- economic mobility was highly restricted. In great contrast, today, slavery is largely illegal, universal suffrage is practised in the majority of the world's countries and many people climb the socio-economic ladder. In Asia, we have seen many of these changes; yet, as in other continents, more remains to be done.

This equalising paradigm shift has impacted education in at least two profound ways. First, 200 years ago, most children lacked the opportunity to go to school, even primary school, whereas now, we see increasing opportunities provided for young people and even older people, not just to attend primary school but even to attend tertiary education. Asia has an outstanding record of improvement in this area. Second, formerly education was a very top-down process, with classrooms dominated by teacher talk and rote learning. The constellation of educational practices associated with this top-down approach to education has been characterized as teacher-centred learning. Such instruction has long reigned in Asian education. The focus of the current paper involves the shift to what is known as student-centred learning. More specifically, the paper focuses on an offshore campus of an Australian university.

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The current paper begins by explaining student-centred learning and contrasting it with teacher-centred learning, and then discusses why student-centred learning should become more prominent in education. The main part of the paper outlines and gives examples of some small steps that educators at preschool, primary, secondary, tertiary and adult education can take to lay a foundation for shifting toward student-centred learning. Examples of these steps will be provided from study skills workshops done at the Australian university.

7.2 Student-Centred Learning

One means of understanding student-centred learning is to contrast it with the previously dominant paradigm in education, teacher-centred learning. In a teacher-centred learning class, typically, the teacher stands in the front of the classroom lecturing and leading. Students speak only when called on by the teacher. Interaction between peers during a lesson is not encouraged, as their attention should be focused on the teacher or engaged by the textbooks and written work on their individual desks. The teachers and other education professionals, the experts in knowledge and skills, decide on the curriculum content and dispense it accordingly in classroom lessons [30].

Assessment is another area where teacher-centred learning and student-centred learning differ. In teacher- centred learning classrooms, the teachers conduct assessment of student achievement to ascertain deficiencies in student learning and to determine a grade for each student [28]. In student-centred learning classrooms, students actively participate in the peer and self-assessment process, in conjunction with teacher assessment, for formative assessment [16]. In other words, the students learn to analyse and evaluate their own learning process with the support of teachers, rather than wait for teachers to tell them where their learning is deficient.

Motivation for learning also differs in the teacher-centred learning and student-centred learning classrooms. In the teacher-centred learning classroom, motivation is largely extrinsic, with teachers using both reinforcements and punishments to encourage student learning [7]. In contrast, teachers in student- centred classrooms focus on enabling student autonomy in learning, working on the students' intrinsic motivation for learning new ideas, skills and knowledge [14, 25]. Teachers' perception of their role in student learning also differs in the teacher-centred and student-centred classrooms. In the teacher-centred classroom, teachers perceive themselves as transmitters of existing knowledge, whereas in the student-centred learning classroom, teachers see themselves as facilitators of active student learning of new and changeable knowledge [12]. Similarly, the teacher-centred learning and student-centred learning classrooms have differing views regarding outcomes in student learning. The teacher-centred classroom is designed with a focus on cognitive achievement, while the student-centred learning classroom incorporates the affective awareness (e.g. intrinsic learning motivation arising from a stronger sense of wellbeing during the learning activities) as one of the lesson objectives [27].

Table 7.1 Selected continua where teacher-centred learning and student-centred learning differ

	Teacher-centred learning	Student-centred learning
1.	Teachers and course materials are seen as all knowing; knowledge is seen as fixed	Teachers and course materials can be wrong; teachers are co-learners along with students; knowledge is changeable and subject to debate
2.	Student talk is mostly directed at teachers, i.e., teacher-student interaction	Students also talk to peers, i.e., peer interaction
3.	Teachers and administrators are the only ones who decide what will be studied and how it will be studied	Students also have a voice in what they will study and how they will study it
4.	Assessment is done only by teachers	Students also do peer and self assessment
5.	Learning tasks are seen as preparation for what students will do after their education	Learning tasks can also connect to students' lives in the present
6.	Extrinsic motivation is the dominant form of motivation	Teachers attempt to build students' intrinsic motivation
7.	Most questions/tasks have only one correct answer; students are to repeat what they have been taught	Many questions/tasks have multiple correct answers; students are to go beyond what they have been taught and to thereby develop thinking skills
8.	One way of teaching predominates	Multiple way of teaching are used
9.	The focus is almost exclusively on cognitive outcomes, such as test scores	Affective outcomes, such as enthusiasm for learning and empathy, are also important

The teacher-centred classroom places power firmly in the hands of the teachers [30], while the student-centred classroom transfers some of the power over learning from expert teachers to student learners [20]. The differences explained above, however, do not represent two polar ends of a continuum. Rather, the focus of learning in these two types of classrooms can move to and fro within different lessons, enabling teachers and students to draw the best outcomes from their strengths. Indeed, teacher-centred learning and student-centred learning are best understood as a single continuum. Table 7.1 provides a comparison of the two types of classrooms.

7.3 Reasons for Student-Centred Learning

Two reasons provide the greatest incentive for implementing student-centred learning in classrooms. First, student-centred learning reflects the reality of how students learn regardless of how we teach. Cognitive and Socio-Constructivist Psychology and related theories now predominate in Educational Psychology, whereas when teacher-centred learning dominated, Behaviourist Psychology was the main paradigm [4]. Cognitive and Socio-Constructivist studies of how learning takes place tell us that we cannot pour knowledge into students' heads; they must actively construct knowledge for themselves. Furthermore, emotions, not just information, matter to students. Similarly, we cannot motivate students to be lifelong learners; they must find the motivation within themselves [11]. Thus, by aligning our instruction with the elements

of student-centred learning, we align our instruction with the practical realities of how our students actually learn.

The second reason for using student-centred learning is the type of learning that students need to prepare themselves and society for a better future, the learning of the 21st Century skills [24, 31]. The past 200 years have seen huge and parallel expansions in democracy and access to information. These trends look set to continue, and education is necessary for this development to be beneficial to both the individual and society. The focus of student-centred learning on lifelong learning, thinking skills, managing diversity in the environment and the social nature of learning, potentially empower students to shape the future in ways in which the planet and its inhabitants can co-exist and thrive.

7.4 Moving Toward Student-Centred Learning

Scholars of organisational change [23] and change in education [9] talk about the need for systemic, organization wide change. There is wisdom in their view that one teacher cannot do much to effect change. However, waiting for system-wide change can often be a painfully long and frustrating process. Thus, educators who wish to see their institution or at least their own classrooms move towards student-centred learning may want to set off on the journey on their own, perhaps enlisting their students and one or two colleagues [29]. As Bovey and Hede [2] indicate in their study of individuals and their resistance to organisational change, when change is perceived as part of one's personal growth and development, resistance to change can be reduced thus enabling system-wide organisational change to take place more smoothly and effectively.

The rest of this paper provides some ideas for small steps that educators might wish to take to more closely align their classrooms with student-centred learning. The authors serve as learning advisors at James Cook University's Singapore campus. They have used all these steps themselves and have had some success with them. The steps are based on the nine continua enumerated in Table 7.1 along which teacher-centred learning and student-centred learning differ. Please note that the presentation of the steps do not imply any order in which the steps must be done. Teachers are advised to use these as guides for how they can implement student-centred learning strategies in their own classrooms, as these steps are merely examples of how to more closely align education with student-centred learning.

Step 1 Educators Are Learners, Too! The teacher-centred learning paradigm sees educators and educational materials as the experts and repositories of knowledge. However, in today's knowledge-based economy and world, so much lies beyond the grasp of even the world's top experts. For instance, what is thought to be known may tomorrow be shown to be wrong [3, 18]. Students need to understand this reality. Teachers can aid this understanding by challenging students to individually and collaboratively search for more information to build knowledge [8, 22, 26], to create new knowledge [15, 19] and to teach it to their teachers and classmates. One

of the benefits of teachers admitting a lack of knowledge is that this admission makes education more exciting, because students are no longer confined to learning what is already known. Now, students are invited to join with teachers and others in a grand quest for greater understanding of our wonderfully complex world.

A small step: Find a time to admit that you (and probably all the experts on the topic the class is studying) do not know important information related to what the class is studying. It should not be long before an opportunity for such an admission arises. For example, in our study skills workshops on writing, we talk about the fact that we are writers too, and we admit that we are still struggling to improve our writing skill, so as to communicate more effectively with our audiences.

Step 2 Students Talk Much More Active learning is sometimes used as a synonym for student-centred learning. Active learning fits the cognitivists' and socio-constructivists' view that students construct their own learning [5]. Language plays a crucial role in knowledge construction. That is why small group activities (with two to four students) feature prominently in much of student-centred learning, because groups allow for much more student talk [32]. Compare the quantity of student talk in a teacher fronted classroom with that which occurs during group activities. With a teacher dominated interaction pattern, only one person speaks at a time, and that person is usually the teacher. Even when the teacher is not speaking, there is still only one person, the student called on by the teacher, who speaks. In such a situation with a class of 50 students, only one student speaks at a time, i.e., 2 % of the class. Contrast this with the same class of 50 but this time, students are talking in pairs. Now, 50 % of the class are speaking.

A small step: After speaking for a while, the teacher stops talking and gives students a short, doable question or task to do in pairs. This will help them process the content that was just delivered. As students interact, the teacher walks around and monitors what students have constructed in their minds. Our study skills workshop often features many activities that students do in groups of two. For instance, in a workshop on "How To Be a Good Groupmate", students tell their partners about a successful group experience and analyse what made the group experience successful.

Step 3 Students have a voice in what and how they study Cognitive psychologists suggest that instruction works best when it connects to students' current knowledge and interests. In other words, new learning needs to connect to students' schema, i.e., their background knowledge [4]. Furthermore, student engagement and ownership may increase when they are involved in deciding what and how they study [27].

A small step: The teacher asks students to contribute examples on the topic that the class is studying. For instance, if the class is studying employee benefit packages, students can give examples from their work experience or from people in their social network, or on the Internet. An example from our study skills workshops would be that when students do writing activities in the workshops, they choose their own topics.

Step 4 Students have a role in assessment In the teacher-centred learning paradigm, teachers conduct all assessment as students are not deemed sufficiently competent

to evaluate their own or their peers' work [28]. However, involving students in assessment familiarises them with and helps them internalise assessment criteria. Another advantage of students participating in assessment is that now many people can offer feedback. As a result, students receive more immediate feedback, and this facilitates more task improvement [1]. Nonetheless, students cannot be expected to provide assessment of the same depth and breadth that teachers provide. Thus, rubrics assessment is recommended for peer and self-assessment by students, with prior discussion and practice in using the rubrics assessment tool to enhance student feedback for task improvement [21].

A small step: For an assignment, students are given a rubric or checklist, which is discussed in class. Before the assignment is handed in, students exchange their assignments with a peer who looks through their partner's work and highlights at least three points in the rubric/checklist that the partner has done well. The checker's name appears on the students' work. In one activity during the James Cook University (Singapore) study skills workshop of citations and references, students practice writing references. These references are checked by their partners who refer to the examples of the various types of references.

Step 5 Learning connects to students' lives beyond school In the teacher-centred learning classroom, students learn in order to cover the syllabus and prepare for summative assessments [28]. In contrast, the student-centred learning paradigm seeks to closely connect learning to the outside world, as is expressed in this quote from Dewey, who pioneered many of the concepts embraced by student-centred learning, "The acquisition of skills is not an end in itself. They are things to be put to use, and that use is their contribution to a common and shared life" [6, p. 11].

A small step: Teachers learn about students' lives and interests. They look for examples that fit students' lives. For instance, if students hope to find jobs in a particular industry after graduation, teachers use examples from that industry or ask students for such examples. The initial study skills workshop at James Cook University (Singapore) features a component on happiness, including a video that talks about the advantages of happiness in the workplace.

Step 6 Intrinsic motivation is the ideal In the teacher-centred classroom, teachers act as the main motivators of students, giving praise and using grades to encourage students to study hard [7]. In other words, motivation is external, i.e. extrinsic. While extrinsic motivation may seem necessary in order to encourage students to prepare for and attend class, complete assignments, and perform in summative assessments, it does not grow students' interest in what they are studying; indeed, studying just to gain rewards may dampen any interest that students might originally have. The student-centred classroom, on the other hand, seeks to develop intrinsic motivation. Such motivation, coming from within, is more likely to be sustainable. Many of the previous steps work towards the development of intrinsic motivation. For instance, Step 1 invites students to join the community of scholars who are searching for understanding and applications. Steps 2 and 3 encourage students to be more active and to play a greater role in shaping their learning. Step 5 helps students discover the importance for themselves and others of what they are studying.

A small step: Teachers stop class 5 min before it is scheduled to end and ask students to write briefly on (a) what was the most interesting idea in today's class, (b) how that idea could be useful for them and others, and (c) how they could find out more about that idea. This helps to encourage metacognitive reflection, a quality exhibited by highly motivated students [17]. The theme of one of the James Cook University (Singapore) study skills workshops is 'Study Smarter, Not Harder', including the topic of scheduling. In that workshop, students create their own schedules, including time for pursuing their interests, academic and otherwise.

Step 7 Learning tasks encourage thinking In teacher-centred classrooms, students focus on absorbing the information dispensed to them by teachers and lesson materials, and being able to reproduce that information in assignments and exams [12]. The student-centred learning paradigm takes that a step further by asking students to elaborate and build on the information given. The teacher-centred learning model is built on the premise of the past, where information was limited and difficult to find. However, in today's knowledge-based world, information is plentiful and easily accessible. What matters now and in the future is the ability to elaborate on that information, to understand, teach, apply, analyse, evaluate and synthesise that information by creating and building new information [22].

A small step: Ask students to take what the class is studying and imagine teaching that information or concept to the person sitting next to them on a bus or a younger family member or one of their grandparents. In other words, students need to explain what they have learned to someone with little or no background on the topic. It might seem that it is easier to explain something to someone without much prior knowledge, but in reality, such explanations require a deep understanding. An example of how thinking is encouraged during the James Cook University (Singapore) study skills workshops would be when students practice summarising, which involves identifying and paraphrasing the main ideas.

Step 8 Teaching takes place in multiple ways Teacher-centred learning focuses on didactic teaching, where the teacher/lecturer stands in front of the class and lectures on the key concepts and knowledge, perhaps with the help of pictures, PowerPoint presentations or videos [12]. This single direction flow of information conflicts with another lesson from Cognitivism and Socio-Constructivism, i.e., that different people learn in different ways [10]. In other words, to help students learn, a variety of teaching strategies should be employed.

A small step: Ask students to create visuals to illustrate key concepts. Visuals include graphic organisers, such as mind maps, flowcharts, Venn diagrams and graphs, as well as drawings, photographs and videos. These visuals should be integrated with words, either spoken or written. Role plays offer another means of teaching via multiple modes. For instance, during the James Cook University (Singapore) study skills workshop on working in groups, students create role plays to demonstrate positive and negative ways to interact with group mates.

Step 9 Affect receives attention In the teacher-centred learning paradigm, short range results, e.g., test scores, dominate. Affective issues, such as classroom climate and students' emotions, receive little attention. While results certainly do matter

Table 7.2 Summary of student-centred learning and classroom tips

	Student-centred learning steps	Classroom tips
1.	Educators are learners, too	Invite students to search for and add new information
2.	Students talk much more	Give doable tasks to students to work on in groups of two to four
3.	Students have a voice in what and how they study	Invite students to contribute examples for discussion during the lesson
4.	Students have a role in assessment	Provide peer and self assessment using rubrics
5.	Learning connects to students' lives beyond school	Use examples from students' environment and interests
6.	Intrinsic motivation is the ideal	Prove opportunities for individual reflection at the end of a lesson to help students link the lesson to what matters to them
7.	Learning tasks encourage thinking.	Invite students to explain knowledge learnt to others
8.	Teaching takes place in multiple ways	Invite students to create visuals based on key ideas
9.	Affect receives attention	Promote mutual respect between teachers and students and among students

in student-centred learning, affect also receives major attention. This fits with Step 6 about intrinsic motivation. If students are to become lifelong learners, they need to find learning an engaging process [31]. For instance, what is the value of knowing how to read if students dislike reading? In keeping with Maslow's [13] hierarchy of needs, educators should also look to making the classroom a place that provides for students' needs for emotional security, connections with others, self-esteem and opportunities to develop their potential [27].

A small step: Incivility on the part of both students and teachers can hinder the building of learning climates that match Maslow's vision. Educators can set an example of civility by, for instance, avoiding sarcasm and being respectful when dealing with all students, even the weakest ones, even the ones who show little civility towards teachers and peers. Another idea for taking into account the impact of affect on learning would be the use of doable tasks in the study skills workshops done by the learning support advisors at James Cook University (Singapore). By designing tasks in which our experience suggests students can succeed, we strive to boost students' self confidence and to help them believe that we can offer them useful guidance. Another way that we help students succeed is by asking them to work in groups of two with someone from a different country.

Table 7.2 summarises the nine steps and the classroom tips put forward for educators to embark on the student-centred learning journey in their own classrooms.

7.5 Conclusion

This paper began by explaining student-centred learning and how it contrasts with teacher-centred learning. The largest section of the paper provided further explanation of nine sample elements of student-centred learning and suggested small steps

that educators might take, given the constraints of their own context, to implement each of those elements of student-centred learning. Examples were given from the work of learning advisors at James Cook University's Singapore campus.

With the many changes the world, including Asia, is undergoing, with the many challenges Asia faces, student-centred learning seems more important than ever. Thus, to fulfil the potential of the ongoing equalising paradigm shift towards a better world for all, educators should not wait for top down change but, in the spirit of the paradigm shift itself, educators should team with colleagues and students today to do what they can to bring to life the student-centred learning vision. The small steps suggested in this paper may be of use along that path towards student-centred learning.

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