



# A Large Class Engagement (LCE) Model Based on Service-Dominant Logic (SDL) and Flipped Classrooms

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Ensuring that university graduates are ready for their professional futures is a complex undertaking that includes, but is not limited to, the development of their professional knowledge and skills, and the provision of empowering learning experiences established through their own contributions. One way to draw these complex processes together for a large undergraduate class setting may be through a teaching and learning framework that centres on engagement. Engagement precipitates deeper learning, based on student-centred knowledge and skills development through co-creation. This conceptual paper proposes the Large Class Engagement model (LCE), which integrates high levels of student cognitive involvement and participation as antecedents to engagement, and treats engagement as a co-creation process between educators and students. The model applies services theory to conceptualise engagement in large flipped classes. The case study in this paper adds a new perspective to higher education. More specifically, it illustrates how a service dominant logic can be used to foster co-creation and thus enhance the learning experiences and outcomes in very large classes.

## Introduction

New developments around student-centred learning necessitate a rethink of the frame in which tertiary education is viewed and the practices through which teaching and learning are provided. Nowhere is this more apparent than in the very large undergraduate

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class setting. For example, a major degree structure change at this university has resulted in unprecedented very large core undergraduate units (800-1200 enrolments in a unit at a single time). Challenges include maintaining quality educational experiences despite an increased student-staff ratio, and addressing rising expectations regarding the professional skills and applied knowledge levels required of university graduates (as shown through the quality standards criteria of global university and business school accreditation systems, for example). Although traditional lectures in large classes are argued to be relatively effective for learning content at the knowledge level, they are not necessarily seen as effective for attaining ‘deeper’ learning (Aagard, Bowen, & Olesova, 2010). The didactic lecture – a traditional approach to university instruction – may not engender deep learning, where students seek meaning, interact actively with fellow learners and instructors, and link topics with real life (Ramsden, 2003).

This paper contends that to develop the skills and knowledge necessary for professional careers, undergraduate learners need to be active, participatory, and engaged in the learning process. This position aligns with the generic attributes of the 21st century learner, which include being an engaged participant (Sharma, 2011). It is posited in this paper that this process can be enhanced within a theoretical frame that links participation and engagement in very large classes.

### **Focus on Deep Learning**

Students can employ ‘deep’ learning approaches and/or ‘surface’ learning approaches to learning (Ramsden, 2003), and educators can establish curricula that promote deeper learning of concepts, which is seen to be preferable in most cases. In a deep learning approach, students learn for understanding by interacting with course content and by relating ideas to previous knowledge and experience, whereas surface learning is largely dependent on memorising course content without necessarily seeking to understand its logic or meaning (Beattie, Collins, & McInnes, 1997). Moreover, materials learned at

a deeper level are retained longer than materials learned at a surface level (Bacon & Stewart, 2006).

It is generally recognised that a surface teaching and learning approach can lead to unsatisfactory assessment or test performance and lower likelihood of students being able to apply the knowledge learnt in real world contexts (Bacon & Stewart, 2006; Gow, Kember, & Cooper, 1994). Davidson (2002) reported that deep study approaches among accounting students resulted in higher grades received on complex examination questions that required them to respond beyond what is possible by memorising facts and procedures. There appears to be consensus that a deep learning approach is the desirable approach (Bryson & Hand, 2007). Previous research shows that teachers and pedagogical approaches can positively influence student learning in higher education (Bryson & Hand, 2007), with the implication that educators can design structures of the university curriculum that can encourage deep learning (Bacon & Stewart, 2006).

### ***Flipped Classroom***

One pedagogy that may facilitate deep learning is the flipped classroom. Flipped classrooms essentially remove traditional, didactic lectures from face-to-face class time, instead providing them in an online format or in some other way, such that face-to-face class time can be taken up with activities that better promote learning, or become ‘workshops of learning’, described by Boyer (2013) as learning situations where the teacher is on hand to check progress and pick up common errors. Flipped classrooms are seen as a relatively new approach for tertiary education, since content can now be provided online, usually via videos, and traditional lecture time can be taken up with some form of workshop (Berret, 2012; Hamdan, McKnight, McKnight, & Arfstrom, 2013; Tucker 2012). In a flipped classroom structure, students take the responsibility of ‘pre-learning’ specified topics prior to face-to-face lecture sessions. Pre-learning can involve surface learning or deep learning, depending on factors such as the unit’s level within the university course structure and the activities planned for the face-to-face sessions. For example,

in a first year unit it may be appropriate to have students ‘surface learn’ course materials before attending the face-to-face class, whereas in a final year of study, students might be expected to attain deeper pre-learning in some instances. The instructor may support the pre-learning process by simply providing recorded lectures or, if deep learning is required or given as an option for students, through the inclusion of interactive exercises and online quizzes. Pre-learning frees up the time in class so that in-class teachers can provide student-oriented activities and provide hands on learning (Bull, Ferster, & Kjellstrom, 2012) to promote understanding, apply concepts, skills and authentic learning tasks (Boyer, 2013; Davidson, 2002; Hamdan et al. 2013; Tucker, 2012).

There is as yet limited research literature to guide ‘best practice’ in flipped classrooms (Bull, Ferster, & Kjellstrom, 2012), to the extent that Milman (2012) states that there is no empirical data at all; almost all references in the area focus on defining the flipped classroom and describing uses. The commonly recognised founders of this approach, Bergmann and Sams (2012), two high school teachers in the USA, noticed that students were not transferring lecture content into their homework tasks, and that sports-elite students were often missing from class and needing to be individually taught the material. As a solution to these issues, Bergmann and Sams devised the flipped classroom approach, which has gained momentum in high schools internationally and, more recently, in university contexts (Butt, 2014). The Flipped Learning Network commissioned a literature review of flipped learning, published in 2013, and noted that flipped classrooms are a result of a long search for an effective way to shift learning to the hands of the learner, and the affordances of digital technology have led to this approach (Hamdan, McKnight, McKnight, & Arfstrom, 2013).

Indeed, while flipped classrooms are essentially about providing didactic independent learning activities online, with face-to-face class time reserved for active learning practices (Brunsell, 2013), it is commonly agreed that there is no one way to do a flipped classroom. The review identified above (Hamdan et al., 2013) noted a range of strategies that can be used in face-to-face class time: active learning,

peer instruction, problem-based learning, mastery and socratic methods (p. 6). Bergmann and Sams (2012) identified a range of advantages of flipped classrooms, ranging from: meeting students in their digitally-saturated world; having the flexibility to meet student needs for timing of core online learning; supporting struggling and advanced students to work at their own pace; and increasing interactions between students and teachers, and between students, as they collaborate in peer support of learning. It can be surmised, then, that in flipped classrooms students move from being the product of teaching, as part of a relatively one-way information exchange, to the centre of learning, where they actively participate and engage in class work that can maximise deep learning (Hamdan et al., 2013).

### ***A theoretical underpinning for flipped classroom***

The practices proposed by flipped classroom advocates and the active learning classroom are supported by social constructivist theories of learning (Milligan, Littlejohn, & Margaryan, 2013). Social constructivism advances the view that people learn by interacting with others to create new knowledge that links to and extends their current or past knowledge and understandings. Furthermore, social constructivist approaches assert that thinking takes place through communication (Hirtle, 1996). Vygotsky's (1930, 1978) notion of the 'zone of proximal development' is pertinent, in that a student can learn some things independently, but can also be challenged to a further level of learning through scaffolded tasks with a teacher or peers. Social constructivists believe that scaffolded support occurs through interaction, not only with the teacher but with others. Essentially, if flipped classrooms support active learning, problem solving, experiential and inquiry-based activities, learner agency, social interaction and debate (see figure 1.3 in Stewart, 2012, p. 19), then constructivism can be seen as an underpinning paradigm.

### ***Flipped classrooms lead to deep learning***

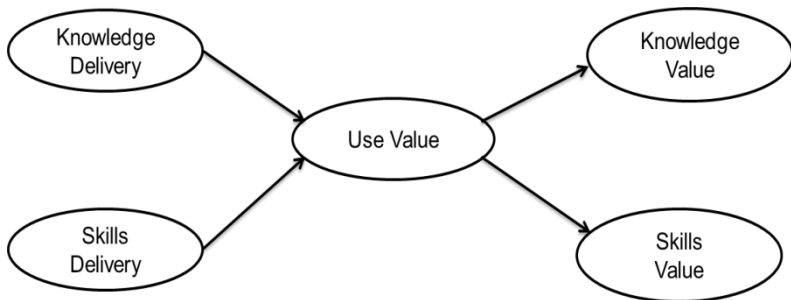
As noted above, flipping the classroom is often simply described as giving lectures online (Ash, 2012; Berret, 2012), but the concept has

at its core the deeper learning of concepts during the classroom time. While it can be argued that the lecture format has its advantages, typically for the communication of lower order knowledge and understanding, it is usually transmission oriented; content (information) is transmitted to learners, and learning is assumed by lecturers. One of the criticisms of transmission-based approaches in higher education teaching is that it does not promote long-term retention of key concepts and application of concepts in real world settings (Bacon & Stewart, 2006). As noted above, one means of achieving not only long-term retention but also greater understanding is to focus on deep learning; students who engage and are given the opportunity to engage in deep learning go beyond simple rote memorisation and the emphasis is shifted to comprehension of subject content (Bacon & Stewart, 2006). A flipped classroom enables deep learning through providing opportunities for the higher level participation outcomes sought in higher education (Fritschner, 2000), such as students making comments, doing additional research, attending class with further questions or becoming teachers themselves by delivering oral presentations. Deep learning may also include answering questions to activities in a way that new insights into the topic are attained for both teacher and fellow students in the class. Such insights can be given an opportunity for development in a flipped classroom model, which also provides opportunities for skills value to be increased via presentation skills, team skills and debating, for example.

### ***SDL approach in flipped classrooms***

The services literature can be applied to the processes between the education provider and education recipient and can help to explain the need for deeper learning processes. Service Dominant Logic (SDL), the latest development in the services literature, highlights co-creation as the value enhancer of services (Vargo, Maglio, & Akaka, 2008). The emphasis is on providing processes that allow the service recipient to maximise 'value' by maximising the recipient's participation with the provider. This is in contrast to earlier concepts in the services literature, which positioned service offerings as being fixed 'goods' just like tangible market offerings (such as a car).

Fixed goods imply that the value from the good is fixed and is exchanged with the recipient for monies. An example of a goods dominant logic (GDL) applied to higher education might comprise a one-way lecture from the knowledge-house (i.e. the university), with students not required to participate in the knowledge development, being assessed via a final exam that is based on conceptual knowledge, and not developing any skills through the potential co-creation of the offering. If the student passes the exam, they exchange monies for a university degree. In GDL, participation is limited to giving the recipient a choice. In the context of teaching and learning, this could be choice of assignment topics. Co-creation, on the other hand, embraces a broad range of dimensions. In the context of teaching and learning, co-creation can extend to assessment and the learning experience itself. For example with assessment, students can participate in the creation of the assessment (perhaps through being involved in determining topics), in the conducting of the assessment (for example, working on assignments in-class with lecturers and tutors) and in the evaluation of the assessment (for example, self and peer review). Furthermore, as co-creators, students are encouraged to influence their in-class experience (for example, by contributing their own material in-class). This greater ‘use’ results in potential increases in knowledge and skills value, represented in Figure 1. The organisation provides the initial knowledge and skills setting (delivery) and the greater use value results in greater knowledge and skills value.



*Figure 1. Relationship between use value, knowledge value and skills value*

Co-creation is different to co-production but both concepts are related. Co-production and co-creation are both relatively new terms to education (Ng & Forbes, 2009), with the concept of co-creation itself only being generated recently in the general academic and scientific literature via the service-dominant logic literature of the late nineties (Bitner, Faranda, Hubbert, & Zeithamal, 1997). Co-production relates to a customer's participation and the degree to which a customer is allowed to be involved in producing or delivering the service (Vivek, Beatty, & Morgan, 2012). Co-production can take place in out-of-class forms such as studying for tests, online quizzes and working on assignments. It can also take in-class forms such as class attendance, note-taking and participation in class activities (Kotze & du Plessis, 2003). Deeper learning would be an outcome of strong participation because participation is seen as antecedent to deeper learning. In a flipped classroom approach, face-to-face components are considered important co-production situations. However, as mentioned, it is also possible for co-production to take place in an online environment without the need for direct, face-to-face contact. Co-creation, or what now might be called engagement, is seen as having a direct association with the performance outcomes of the organisation (Van Doorn, Lemon, Mittal, Nass, Pick, & Verhoaf, 2010) since the environment for co-creation not only leads to better outcomes for customers in terms of knowledge and skills value, but also outcomes to the firm, such as organisational learning (Payne, Storbacka & Frow, 2008).

This paper proposes, for university teaching, a conceptual framework that focusses on the university environment for participation, the students' inputs for participation, and the learning processes of the student, with particular focus on conducting the assessment to encourage co-creation. The paper does not consider the additional outcomes to the university from the co-creation processes, such as better organisational learning from the co-creation environment.



## **Conceptual Model of Student Engagement**

The Large Class Engagement Model (LCE) proposed in this article is about student engagement and participation, with student engagement (SE) being defined as student-led creation of knowledge and skills value – the increase in overall benefits in the student’s university education, specific to their profession. Adapting Vivek’s et al. (2012) model for customers, SE can be seen as a function of student involvement (SI) and student participation (SP). The cognitive involvement of students and the participation level of students are antecedents to SE. This article focuses specifically on student participation, rather than involvement, and this is conceived of as the co-production opportunity of the student.

Student participation is seen as a function of role clarity, motivation of the student, ability of the student and the university atmosphere. Role clarity, motivation and ability are generally accepted factors affecting participation (Kotze & de Plessis, 2003; Lengnich-Hall, Claycomb, & Inks, 2003; Rodie & Kleine, 2000; Shneider & Brown, 1995). The university environment or atmosphere, mainly in terms of having appropriate material available online or outside, and having unit structures and built environment that encourage high level participation, is vitally important. This may even include a built environment that includes desks available in large lecture theatres, for example. Role clarity and university atmosphere are variables provided by the university but perceived by the student. Students can participate at high levels, but engagement also requires them to bring high levels of involvement to the learning content. Involvement is a cognitive, affective or motivational construct indicating state of mind or perceived personal relevance (Smith & Godbey, 1991). Involvement is not a behaviour but has been shown in the field of consumer behaviour to produce greater external search for information (Beatty & Smith, 1987), greater depth of processing of information (Burnkrnat & Sawyer, 1983), and more elaboration of material in the sense of an extended decision making process (Petty & Cacioppo, 1986). No engagement can be attained if the student brings a low involvement perspective to the unit being studied.

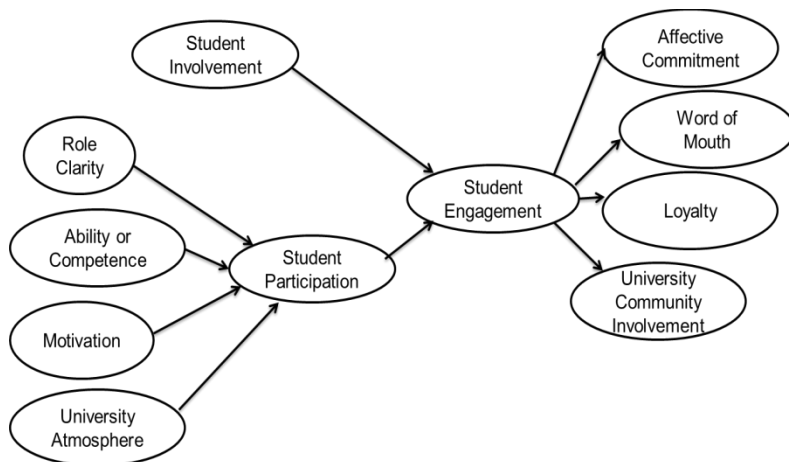


Figure 2. Proposed LCE Model

As shown in the proposed model, outcomes from engagement include not only skills and knowledge value, but also affective commitment, positive word-of-mouth, loyalty to the organisation and university community involvement. While in this article the focus is on the building of skills and knowledge value via engagement, additional benefits that the student provides can also be attained, which may be beneficial to the organisation (Vivek, et. al., 2012).

### ***Teaching and Learning Framework***

This conceptual model positions the flipped classroom as an effective means of promoting student participation and engagement and, if designed appropriately, to foster co-creation of assessment through both the traditional lecture and the tutorial. By moving content delivery online, gaining broad awareness and understanding of the content takes place away from class and in-class, face-to-face experiences promotes the range of learner-based active engagement strategies listed above. This provides opportunities for greater participation.

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The proposed model has been built through a review of the service literature and through the authors' experiences in implementing a flipped classroom in a very large class. This experience will now be described and reflected upon as a case example. In this case example, the learning framework entailed three core components - an online component, a workshop component (replacing the traditional lecture) and a tutorial component (see Figure 2). The online component replaced lectures and included recorded lectures, lecture slides with notes and audio recordings. This online component was designed to enable students to develop a basic understanding of the content. Under an LCE model and flipped classroom approach, this is the main purpose of an online component, although it can also be used to develop deep learning and as a means of further engaging students. The face-to-face workshop provides for the development of deep understanding through the application of online content to authentic activities, such as case studies, discussion and questions on real world examples. As well as the earlier discussion, this deep learning prepares students for decision making roles more effectively than does a traditional lecture format (Udovic, Morris, Dickman, Postlethwait, & Wetherwax, 2002).

Within a flipped classroom structure in a traditional lecture/tutorial delivery, tutorials are usually groups of 20 approximately students, and become a strong delivery mode for developing and co-creating specific skills value. Examples of this might be the enhancement of group collaboration experiences through the scaffolding of group projects in the class; and presentations and cooperative group work during class. In the case of group project work in the tutorial, the tutor acts as an expert facilitator, such that the students can optimise this experience. The Learning Framework used in the case example is shown in Figure 3.

### **Case Study Example**

In Semester One, 2012, the framework illustrated in Figure 3 was implemented in a Marketing Fundamentals undergraduate unit. The unit was fully developed by the authors of this paper. For various

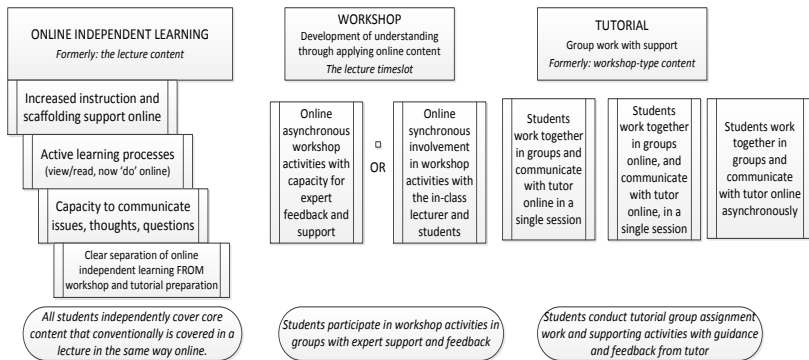


Figure 3. Teaching and Learning Framework with Online components, Workshop and Tutorial

reasons, the unit was taught as both a first year unit and a second year unit and was introduced for the first time as a core unit within the Commerce degree at an Australian university. It was also offered at the same time, and for the first time, as a so-called ‘broadening unit’ within the university’s new model of general broadening units within the undergraduate teaching programme. For these reasons, student numbers were large, amounting to 870 students being taught in Semester 1, 2013. 532 were taught in Semester 2, 2012, and 339 were taught in Semester 2, 2012. To offset the unit being taught across both first and second years, second year students were required to complete a more comprehensive undertaking of the unit, reflective of their stage of learning.

The lecturers were determined to ensure that the unit met a number of educational principles (university ‘graduate attributes’), both knowledge and skills based. The skills were considered of vital importance, given that many students would not take another Commerce unit in their degrees and students may also not take another Marketing unit in their degrees. Attributes such as presentation skills and working in groups, which are vital to marketing graduates, were therefore emphasised in this unit.

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A major group project was initiated in the unit, composed of a written report and a group presentation. These two components comprised 35% of the total unit assessment. The remainder of assessment components were online tests at the end of each module (3 tests for 15% in total), a major exam (40%), as well as tutorial participation and attendance (10%). The major exam comprised only components covered during the workshop sessions. Given the size of the unit and the lecture/tutorial mode historically adopted by the faculty, workshops were held in large lecture theatres and replaced the traditional lecture time. The unit schedule therefore included the activities to be covered during the workshop and the tutorial preparation activities, which comprised solely the completion of the students' major group project. These are shown in Figure 4. All workshop activities stated in the unit outline were examinable in the major exam. The workshops were not recorded and students were told to treat their group (formed in the tutorial) as their learning community, keeping up with the workshop activities. The aim of the workshops was to present material that could be co-produced with the students, with high level discussion in the lecture (workshop) and whereby answers could be co-produced and it also gave the opportunity for higher level discussion to take place, even if that discussion was with only a few students in the lecture. In scaffolding learning, the lecturer would write answers with the students during the workshop session, thereby co-producing the knowledge. This was a strategy adopted to fulfil the aim of increasing the co-production and co-creation of the targeted graduate attributes and learning outcomes.

Workshop activities included: questions relating to short news articles; small case studies; interactive activities applying concepts; video cases; and audits of advertising materials.

#### ***Tutorials***

In tutorials, students worked solely on their group project with the tutor. This involved assessing three products in the market place in relation to their marketing activity and determining some recommendation to the whole market or to one of the products under analysis.

Week # and Date	Topic	Workshop Prep	Workshop Activities	Tutorial Prep	Assessment Activity
1. Feb 25	Module 1 – Creating and targeting the Marketing Offering. Overview of the unit.	1. Read Ch. 1 and/or listen to chapter audio summary. 2. Check unit lecture slides and any unit online recordings		No tutorials.	
2. Mar 4	What is a marketing offering?	1. Read Ch. 2 and Ch. 3 and/or listen to chapter audio summary. 2. Check unit lecture slides and any unit online recordings.	Activities including: 1. Complete total product concept activity in lecture slides. 2. Complete 'Geoshapes' video case questions Ch. 3. Attempt evaluating service quality in lecture slides.	In tute, confirm group for major group project and discussion in class on product for selection.	
3. Mar 11	Understanding products further.	1. Read Ch. 2 and/or listen to chapter audio.	Activities including: 1. Complete consumer product classification activity.	1. Choosing three possible examples of current products related to your group project, compare the total product concepts.	Two page summary on product for major group project.

Figure 4. Unit schedule showing workshop and tutorial components

Tutors interacted with students to facilitate their learning. Students were encouraged to work on the answers to the topic questions that they needed to cover each week in relation to their group project. They were required to bring in material related to the topic on a weekly basis. Tutors facilitated discussion within small groups and across the whole tutorial group. In this regard, tutors co-produced the project with students, rather than students working on this project in their own time outside of the formal teaching time for the unit. Given the graduate attributes and student outcomes, groups were required to present their synopsis and recommendation at the end of semester in the tutorial. Students were given the opportunity for a creative exercise via their recommendation, which could be presented as using a visual strategy with regards to marketing communication, as well as a formal presentation of their project using the online Prezi presentation platform ([www.prezi.com](http://www.prezi.com)), which allows visual elements such as videos and advertising material to be more seamlessly embedded in a presentation. In summary, students

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worked on their projects each week in the tutorial and this process was facilitated by the expert tutor. Examples of the types of question that students needed to consider for the project are shown in Figure 5.

<b>Topic</b>	<b>Questions to answer</b>
Product Offering - Total Product Concept and Product Lifecycle	Choosing the three examples of current products related to your group project and discussing the relative theory, compare and contrast the total product concepts for each and the product life cycle? What is the market lifecycle like in general for the market?
Branding	Discuss the concept of a brand, including its various elements. Discuss each brand's equity components. What do you think are the brand's strengths and weaknesses in relation to brand equity?
Positioning	Do the products target different or the same type of consumers? How are the three products positioned in the marketplace in relation to the positioning options and the positioning strategies?
Communication	Discuss the communication hierarchy model. Collect as much visual information as possible on your three products and discuss each of these with respect to the communication hierarchy model. Also, are there different selling ideas, appeals and executions being used? Why might this be the case?
Consumer Behaviour	Using as many examples as possible, discuss the consumer decision-making process as it relates to the three products.
Recommendation	Choose a theory or tool from those related to the above topics and use the tool to explain an improvement for a product/brand or in the marketplace. Include more detailed discussion on the theory/tool and utilise creative elements to present a new recommendation.

*Figure 5. Major Group Project weekly questions to achieve in Tutorial Time*

## Online Component

Extensive online materials were provided to students through the university's learning management system (LMS). Online materials included the one-way components such as lecture slides, recordings, chapter audio recordings, as well as participation exercises via the assigned textbook support materials. These included drag-and-drop activities, video cases and multiple choice quizzes. An example of a weekly topic's material provided online can be seen in Figure 6, showing material over weeks 11 and 12 and the final exam revision section.

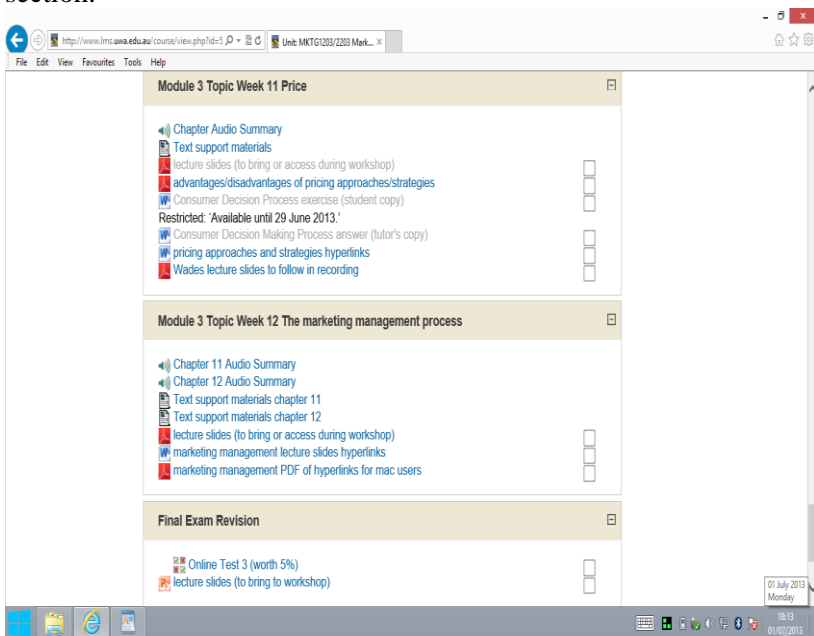


Figure 6. Examples of material provided online on the LMS

## Role Clarity

In the first week of the semester, students were provided with information about the roles that they would play in the workshops and tutorials. They were also required to complete an online test based on the unit outline that detailed the operations of the workshops and tutorials. In Semester 1, 2013, students were required



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to achieve 100% on this online test before they were allowed access to the first three weeks' online materials. This resulted in 5000 quiz attempts, averaging 4 attempts per person. Examples of information provided in the first workshop in relation to role clarity and teaching and the learning framework are shown below:

### ***Responsibilities of the School***

- Unit coordinator: responsible for design and delivery
- Unit outline (syllabus): details of dates and assessment
- Unit materials: specific readings and other activities
- On time workshops and tutorials
- On time help: when asked for
- Fair and timely marking of assignments and exams

### ***Responsibilities of the Student***

- Organise enrolment/withdrawal for lecture and tutorials
- Attend workshops and tutorials
- Allocate sufficient time for assignments
- Responsible team member
- Inquisitive and self-motivating
- Think and do!!

### ***Philosophy of the Unit***

1. You review the topic at home or elsewhere and we discuss it during the lecture time (which will now be known as a workshop).
  - a. You work in your group during the workshop.
  - b. There are still lecture slides for you to print out to help you through the topic.
  - c. You need to bring the study guide.
  - d. It is beneficial for at least one of your group members to bring a laptop.
2. Tutorials – the tutor's role is to facilitate you and your group on your group project.
3. Your group is your learning environment.

## **Discussion of Experience**

As noted previously, the workshop approach allowed the instructor to encourage participation and to engage students in understanding marketing concepts in a large classroom environment. Here, the students' participation between themselves and with the instructor led to greater potential for high level engagement. This was enhanced through the co-production of the answers during the workshop sessions. The type of activities utilised in the workshop sessions, in terms of application of key concepts, provided opportunities for co-creation. This was further enhanced through the group project work. However, the biggest challenge with introducing this style of teaching and learning was the students' unfamiliarity with the workshop approach at the first year undergraduate level. In particular, it was observed by staff that these first year marketing students failed to appreciate how the final exam was integrated with the workshop activities and, in many instances, they resorted to rote learning of the assigned text book material to develop their answers. There are a number of plausible reasons for this, one being that this was the only first year unit using this workshop approach. Another is the possible use of more traditional (didactic) methods of teaching and learning at the secondary education level, and students therefore needing time to adapt to different teaching and learning methods at the university level. It is possible that these two factors led students to expect a traditional structure for the marketing unit – and this expectation was difficult to overcome, despite the role clarity strategies employed.

The workshop approach, with the aim of co-creation, precipitated some positive trends among students. As mentioned, it has now been used over three semesters from 2012 (Semesters 1 and 2) to 2013 (Semester 1). It appeared that students enrolled into the unit during the second semester of the year were more comfortable and accepting of the workshop approach compared to the students enrolled in the unit during the first semester. However, the second semester delivery may have been positively impacted by enhanced university atmosphere via a better lecture theatre for the workshops in the second semester. This was because the second semester

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delivery traditionally has a smaller cohort, therefore allowing the use of 400 seat lecture theatres. In most cases, these lecture theatres have lower angles, for better physical flow between lecturer and the student cohort, and desks for students to work at. Due to changes in the commerce unit curriculum, a number of students who had been at the university for at least a year (2nd year students) were enrolled into the similar unit where the final exam was set at a higher difficulty level. The same workshop approach was used with these students. It was found that these students achieved an overall mean score of 66.5%, which is at the upper limit of the range set for second year units in this Faculty. Again, this high mean score reflects that using the workshop approach can lead to the students achieving higher test scores and overall scores. Overall, these findings also support Davidson's finding (2002), that students achieve higher grades when they adopted deep study learning approach.

On reflection, the co-production emphasis in the workshop and the co-creation emphasis in the tutorials were challenging conceptually for students in their first year of learning. Students in these instances achieved overall grades at the lower end of the range for level 1 (first year) units. However, once students became accustomed to the independent learning style of university education, their results, using overall mean scores and final exam scores, indicated that the LCE model approach delivered through online components, workshop and tutorial mode, may enhance learning. Better strategies for role clarity, as well as the potential adoption of flipped classrooms in secondary education may also impact this positively. The model was also able to effectively incorporate the professional skills development of students.

### **Conclusion**

This article has presented an example of the implementation of a highly participatory, engagement based model (LCE), where engagement refers to the opportunity for additional benefits to be achieved in the learning process. The model utilised a flipped classroom approach through the use of activities in a workshop mode

as well as in a tutorial mode, which facilitated user engagement and participation. In the article, it has been argued that an effective way to implement a flipped classroom is to base it on SDL, that knowledge and skills value is co-created in a student-led engagement environment. This co-creation can lead to deeper learning of concepts by the students, which can then lead to long term retention, and application, of concepts. The case example also illustrates that greater student participation in workshop mode can lead to higher exam averages, even on complex problems or activities. It has also been proposed in this article that role clarity, motivation and university environment or atmosphere play a major role in encouraging student participation. According to SDL, greater student engagement leads to the creation of knowledge and skills values among university graduates.

It was evident from the case example that students' expectations of a traditional lecture based delivery system may impact on the effectiveness of flipped classroom for first year units. Given the finding that flipped classrooms with greater student engagement are beneficial for students' learning and critical understanding of core concepts, it would perhaps be fruitful to consider the adoption of such classroom designs (e.g. workshops) for all first year units across the university, to enhance role clarity. Future research might investigate unit delivery designs across other units that are based on enhancing student engagement, in order to appropriately measure knowledge and skills values among university graduates. The mapping of different modes of delivery may be beneficial during the progression of a degree so as to determine the best mix of shallow and deeper learning and modes for optimising both of these. For example, shallow learning using online materials and deeper learning in a face-to-face workshop may optimise learning for first year cohorts. However, for final year students, provision for deeper learning may be provided online. Also, and in line with the flipped classroom philosophy, adapting to individual student needs may result in deeper learning options being available online as well as in face-to-face, for first year students, as a means of enhancing the learning of higher performing or highly motivated students. In this way, the flipped classroom could facilitate differentiated teaching.

## **Acknowledgements**

The authors would like to thank the Guest Editor for insightful comments and suggestions. The authors would also like to thank Professors David Webb and Robyn Ouschan for assistance with model conceptualisation. Jarvis and Johnston would like to acknowledge the financial assistance of the UWA Teaching & Learning Fellowship Scheme and the UWA Alumni Annual Fund Grant.

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