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## The role of self-determination theory in developing curriculum for flipped classroom learning: A Case Study of First-Year Business Undergraduate Course

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## Abstract

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## Keywords

Self-Determination Theory, Flipped Classroom Learning, First-Year student

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## Introduction

Universities are slowly transitioning away from a traditional learning approach (Einfalt & Turley 2009), which mainly consists of passive learning via lectures that are typically only aimed at transmitting information (Bligh 2000; Delahaye & Choy 2017). Students have criticised passive teaching, where instructors engage in monotonous reading that ignores the learners' need for autonomy and responsibility (Kember & Wong 2000; Haak et al. 2011). This traditional, passive delivery may demotivate students from engaging with the subject content, and thus inhibit learning. This is of particular relevance as the university dropout rate in Australia is worsening, with around one in three students failing to complete their studies within six years of enrolment (Department of Education and Training 2017). Passive learning is seen to be unsuitable for adult learners, and can be even more so for millennials – the generation born after 1980 (Prensky 2001) – who may have decreased tolerance for lecture-style dissemination of subject information and a strong preference for engagement and active learning (Roehl, Reddy & Shannon 2013). Kember and Wong (2000) argue that active learning facilitates the development of knowledge. Hence, active learning encourages student engagement with, and ownership and control of, their learning endeavours.

Active learning occurs when the instructor creates tasks to generate conscientiousness, concentration and a deep approach to learning. Such tasks are designed to help students understand concepts through reflection and discourse, leading to a positive impact on students' knowledge development and subsequent achievement (Andrews et al. 2011; Blanchard & Thacker 2010; Richardson Abraham & Bond 2012). Learning from and with peers and creating knowledge by combining explicit and tacit knowledge (Delahaye & Choy 2017) are especially important during the first year of tertiary studies. Such knowledge creation can support students' progression in subsequent years (Krause et al. 2005) and help to develop a creative and collaborative process of knowledge development.

Although an active-learning classroom setting is shown to be beneficial to students who are motivated to perform better (Prince 2004), low achievers may find pre-classroom homework too difficult (Enfield 2013). More recently, Boevé et al. (2016) have highlighted that an active-learning classroom context lacks the passive explanation of concepts, which impairs the learning process. It is worth noting that this matter can be resolved. For example, in this study the students received basic definitions and explanations within the traditional lecture environment, thus allowing consideration of such matters in the pre-work and readings in preparation for the tutorial classroom assessments.

In addition, there is a plethora of literature on millennials' classroom learning. Millennials seem to prefer teamwork (Kleinhans et al. 2015); however, Leese (2010) notes that in a university setting students are encouraged to be self-regulated and independent learners. As we will claim further in this paper, the level of independence and growth in millennials' learning can be developed via a teamwork approach to classroom assessments, again highlighting the value of a combination approach to knowledge development, in accordance with a social-learning context (Kolb 1984).

This study focuses on high-school graduates who have enrolled in undergraduate studies. Learners transitioning from secondary to tertiary education face unique challenges. These learners navigate an educational system where the focus shifts away from teacher-driven content delivery, in which they have been dependent student learners who readily accept information presented to them for future application (Delahaye & Choy 2017). These learners now need to become more

independent, and may require a learning environment where knowledge is applied to a current problem or a real-life situation or event, and are more likely to flourish in a context of teamwork and mutual respect among peers, and between the students and the teacher (Chan 2010). These factors influenced the design and delivery of the assessment used in this study.

Our study was inspired by Abeysekera and Dawson's (2015) conceptual paper, arguing that active-learning approaches can help to improve students' motivation. The aim of our study is to contribute to knowledge by integrating self-determination theory and an "at-home ethnographic" research approach to reflect on the influence of active-learning classroom strategies on tertiary business students' ability to become independent learners and improve their academic performance within a management subject. Particularly, we aim to fill a gap in the literature by assessing how university academics can align students' motivation to generate better engagement, learning and performance by using active-learning approaches with a cohort of first-year business students in an Australian university. Such an approach may help to reduce the attrition rate of first-year business students and help them to transition from a high-school passive-learning approach to the independent learning environment of a university. We evaluate the impact of the active-learning approach through the critical analysis of teacher-student interactions. The findings are validated by comparing the results of two consecutive semesters, before and after changes to the assessment structure and the introduction of active-learning approaches within the same subject.

## **Theoretical background**

### ***Self-determination theory***

According to Cole, Field and Harris (2004), the level of motivation determines a student's level of effort and focus on learning. Self-determination theory (SDT), which is one of the core constructs of this study, looks at different types of motivation and predictors of performance (Deci & Ryan 2008). The theory asserts that three psychological needs motivate people's actions: autonomy, competence and relatedness (Deci, Connell & Ryan 1989) (Figure 1). These three needs stimulate engagement among learners (Gagné & Deci 2005). Study environments that fulfill the three needs are likely to enhance intrinsic motivation among students, leading to positive attitudes towards learning and increased engagement (Gagné & Deci 2005). Studies show the significance of external factors in determining the extent to which competence, autonomy and relatedness are supported or obstructed (Wilding 2015). We used SDT as a core construct to design the delivery of a subject to first-year business students at an Australian university to enhance their learning experience. Each of these psychological needs is examined in detail below.

### ***Autonomy***

In the workplace there is a positive correlation between intrinsic motivation and satisfaction, on the one hand, and the need for autonomy, on the other (Fernet, Austin & Vallerand 2012). In an educational setting, it is important for learners to take an active role in creating knowledge, and not solely be passive recipients of information (Delahaye & Choy 2017; Momani, Asiri & Alatawi 2016). Autonomy is often linked with independence, but according to SDT, autonomy can also be associated with dependence, where one enacts the values and behaviours of others (Ryan & Deci 2002). When regulations are imposed, students are more inclined to disown responsibility and blame others for their performance (Ryan & Connell 1989). Teachers are part of students' external environment, and typically their control over the educational process can reduce students' sense of autonomy (Deci et al. 1991). Thus, it is important that students are encouraged to be genuinely

autonomous to enhance greater intrinsic motivation (Niemic & Ryan 2009) and allow them to independently solve group conflicts. Therefore, we believe that learning is something that learners do, not something that is imposed on them (Sjøberg, cited in Kurt 2017). These aspects are strongly supported by theorists, including Knowles (1984), and are widely explored in research by Chan (2010) and Delahaye and Choy (2017).

Scaffolding is considered to be an apt tool to develop autonomy and ensure a gradual transition of learners from high school to the university study setting (Beaumont, Moscrop & Canning 2016). De Léon (2012, p. 147) defines scaffolding as “a manner of delivering instruction where the teacher provides guidance or support as learning occurs, gradually removing these supports”. This process encourages and facilitates learners’ independence. The scaffolding metaphor indicates that students should be autonomous learners rather than dependent on their peers and teachers. Wilson and Devereux (2014) further extend this discussion by addressing the process of building scaffolded assessments. According to these authors, the scaffolding of assessments requires a process to be outlined and modelled by the teacher, then handed over to the students in autonomous groups to work on and discuss, and to co-construct a summary. This requires careful construction of tasks that lead to the completion of the major task (Beaumont et al. 2016). The scaffolding literacy approach begins with reading to “provide a literate context to develop writing” (Rose, Gray & Cowey 1998, p. 8). However, teachers should be cautious when developing assessments, as they should be neither too challenging nor too easy, either of which may discourage students from being engaged with the content (Wilson & Devereux 2014).

### **Competence**

“Competence involves feeling efficient, effective and even masterful in one’s behaviour rather than incompetent and ineffective” (Sheldon & Filak 2008, p. 267). Self-efficacy is an individual’s belief in his or her competence; it is argued to be a highly effective predictor for motivation and learning among students (Zimmerman 2000). Improving self-efficacy is an important element of learning to keep students from feeling unmotivated and helpless (Boggiano & Barrett 1985).

To improve competency, students need to receive feedback about their performance. Feedback does more than simply enhancing students’ *feelings* of competence in their studies (Vallerand & Reid 1988); it also helps them correct erroneous knowledge components to improve their skill level. This feedback needs to be specific, meaningful, reflective and explicit (Wingate, Andon & Cogo 2011) and given in a timely manner to enable students to incorporate it into future assessments (Nicol 2010). Delivering feedback in this way is consonant with the scaffolding assessment structure.

It is known that when students adopt their teacher’s feedback, their performance improves and their motivation to study increases (Wilson & Czik 2016). Schunk (1987) also found that it results in greater efficacy for further learning. However, Boud and Molloy (2013) argue against students being passive recipients of feedback. Instead, feedback can take the form of dialogue between peers, especially when working on team assessments (Ngar-Fun & Carless 2006).

How assessments are constructed is a factor in making the feedback effective, which in turn scaffolds students’ learning and helps them increase their competency. Thus, feedback needs to be aligned to the scaffolded assessment structure and design of the subject. For instance, the teacher’s feedback on each assessment should help learners perform better in the next assessment (Boud 2000; Nicol & Macfarlane-Dick 2006). However, this approach may not be effective on its own. It

is influenced by, among others, the need for relatedness, which students seek and define in a broader context of relationships.

### ***Relatedness***

A sense of relatedness is associated with belonging to a social group in a given context (Bauer & Liang 2003; Ryan & Deci, cited in Abeysekera & Dawson 2015). Encouraging students to actively participate within small learning groups can help them experience greater levels of student-to-student interdependence, and can be vital for their learning process. Active-learning classroom activities can provide increased opportunities for satisfying this need (Prince 2004). Belonging to and associating with a social group within a given context (in this case, the first-year business-student cohort in a university) can help satisfy the need for relatedness (Bauer & Liang 2003).

Typically, most first-year university students struggle with a sense of isolation and lack of belonging (Tachine, Cabrera & Bird 2017). Young students who come straight from high school to university often lack a sense of belonging and have a lower level of opportunity to associate with their university peers on a daily basis, especially in the first year of a degree course (Gerdes & Mallinckrodt 1994; Tachine, Cabrera & Bird 2017). One way to reduce the level of isolation and encourage peer learning is through carefully designing an assessment that requires group work (Bonanno, Jones & English 1998). Group work is said to assist in promoting student-centered approaches, experiential learning (Bonanno, Jones & English 1998) and active learning (Abeysekera & Dawson 2015). Such an approach can also help students get to know new peers and make new networks within a new context. These thoughts align with social constructivist theories of learning, which see teaching as focused on group interactions where the sharing of a variety of viewpoints and opinions is encouraged, and learning is peer-focused and situational (Blanchard & Thacker 2010).

An active-learning approach requires cooperative learning among students both within and outside the classroom (Miles & Foggett 2016). Miles and Foggett (2016) and Bergfjord and Heggernes (2016) discuss the improvement in student grades and engagement in active-learning-based classrooms. According to Melzer and Grant (2016), students are more likely to flourish when they are in a social context that provides them with a sense of security and relatedness, which can in turn facilitate their competence and autonomy. However, student participation in active learning does not necessarily change their learning (Burke & Fedorek 2017). To gain the best results from active-learning classroom activities, students need to actively participate rather than be passive (Van Nuland et al. 2012).

Figure 1 shows the teaching and theoretical framework for this paper, which has been based on the literature discussed above.



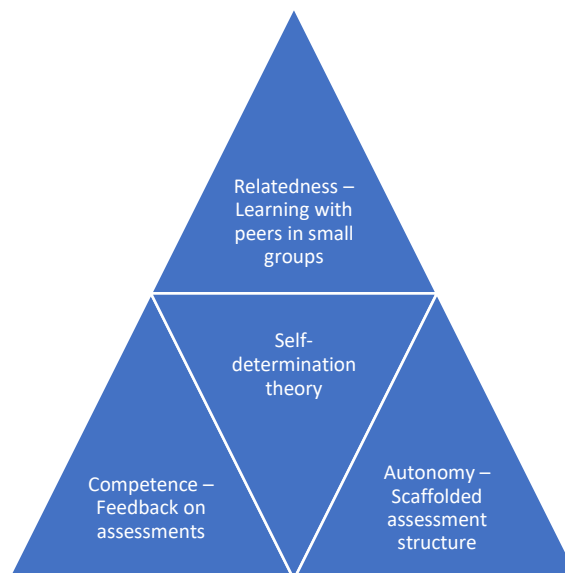


Figure 1. Self-determination theory and psychological needs

Based on this framework, this study aimed to address the following research question:

*How do the scaffolded assessment structure, continuous feedback on scaffolded assessments and active learning with peers via group assessments support student performance on the final examination in a first-year management subject in an Australian university?*

## Methodology

This study used a case-study research approach to allow critical analysis of interactions between the teacher and learners. Case-study research provides an in-depth analysis of a single situation (Baxter & Jack 2008). This paper focused on the experience of a team of nine teaching staff that came together to deliver a first-year management subject at an Australian university. Our purpose was to search for deeper understanding rather than examining surface features (Johnson 1995); thus we viewed knowledge creation as contingent on constantly being “constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context” (Crotty 1998, p. 42). We also understood the importance of validity and reliability, and the multiple realities that the teaching team may have brought to the research; therefore, we used the reflections of all nine teaching members. Similarly, to improve the analysis and understanding of the findings, we ensured that different teaching members interpreted the data at different times (Golafshani 2003).

The coordinator’s role was to develop the subject material and assessments so that they were in line with learning outcomes, coordinate the delivery of the subject content and ensure quality assurance in terms of consistency in marking. This also involved hiring and training a tutor team to ensure a shared vision, achievement of common goals and a consistent approach to teaching and supporting students in all tutorials. To this end, from the start of designing the content and assessments, the coordinator made an effort to include the tutors’ feedback, making them active

participants in the design and delivery of the subject rather than passive participants who merely delivered the subject content.

A significant body of research has identified the links between the use of tutors and student success (Rheinheimer et al. 2010). In preparation for the subject, the coordinator first recruited tutors to develop an effective teaching team. This involved one-on-one interviews to understand whether the members shared a similar approach to student engagement and learning. After the recruitment was completed, the coordinator worked with the learning and teaching development unit to design a workshop – which the tutors were paid to attend – that aimed to develop their understanding of how to apply the marking criteria, use online marking methods/templates/rubrics and provide consistent feedback across various tutorials. The learning and development team provided templates and workshops on academic writing and referencing that tutors could deliver to the students. During the training, the learning and development team and the subject coordinator asked tutors to interact and suggest alternative approaches. Based on the discussion at the workshop and the feedback received, the templates and the approaches to assessment marking and student feedback were revised. The tutors also agreed to mentor each other, and during the workshop developed a trusting relationship where they felt comfortable voicing their concerns and taking initiative to provide suggestions for improving the subject delivery, design and assessment. This resulted in having a consistent and transparent approach to marking and subject delivery.

The tutor team included a further eight highly experienced university tutors from the management discipline (Table 1).

**Table 1. Experience of the teaching team**

Teaching-team member	Teaching experience	Subjects taught in the past
1	PhD with five years' teaching experience	Undergraduate and postgraduate subjects
2	PhD candidate with three years' teaching experience	Undergraduate subjects
3	PhD candidate with 10 years' teaching experience	Undergraduate and postgraduate subjects
4	PhD with five years' teaching experience	Undergraduate subjects
5	Former senior executive in the corporate sector with five years' teaching experience	Undergraduate and postgraduate subjects
6	Over 10 years' teaching experience	Undergraduate subjects
7	Five years' teaching experience	Undergraduate and postgraduate subjects
8	PhD with over 10 years' teaching experience	Undergraduate and postgraduate subjects
9	PhD candidate with three years' teaching experience	Undergraduate subjects

The team encompassed a broad range of teaching and professional experience. The tutors involved in this learning process brought a relational perspective to university teaching (Schmidt 2011). This perspective assumes that communication between tutors and students develops based on how they interact and the roles they assume, and that these roles and interactions shape each learner's sense of self (Pascarella, Terenzini & Wolfle 1986; Tinto 1997). The tutors' role in this program was to be the front-line participants, who actively engaged with the coordinator to provide feedback on the design and delivery of the subject, and ensured that diverse student needs were taken into account when designing and delivering the subject. In addition to being active participants in the design and delivery, tutors met face to face with the students every week for one hour within a 13-week semester structure. Each tutorial class had approximately 25 students. The tutors' role was to develop a nurturing relationship with their students and foster independent learning while giving ongoing feedback on assessments to guide improvement.

The students, who were enrolled in the Bachelor of Commerce/Bachelor of Business degree course, were required to complete the first-year core management subject unless an exemption was granted. The entry requirement for the subject was the completion of secondary education. Four hundred nine students were enrolled in the subject, of which one hundred were international students, a majority of whom came from non-Western countries that had predominately collectivist societies. The majority of the students in this study were recent high-school graduates. Typically, high-school education systems are based on a dependency model of education, where students tend to rely on their high-school teachers for a more intense level of support and guidance. Transitioning from such a dependency model to a more independent tertiary-study model can be challenging for many of these students. Therefore, we facilitated small, peer-assisted learning groups to ease students into the more independent tertiary-education sector.

We used Alvesson's (2003) self-ethnographic "methodology for close-up studies" approach, specifically its use of teacher reflections, to understand the impact of the active-learning approach and peer learning activities on student learning and final-exam performance. At-home ethnography (Alvesson 2009) and close-up studies (Alvesson 2003) of academic institutions and practices are part of a growing trend in organisational research (Berg, Dutton & Wrzesniewski 2013; Parker 2014). Alvesson (2003) makes a case for self-ethnography, where the researcher conducts an ethnographic study of a university setting or some other setting with which the researcher "is highly familiar...or has direct access to" (p. 167). He also argues that the researcher's familiarity with a certain social setting, such as teacher-student interactions in classes taught by the researcher, need not be a liability (which can happen, for instance, where the researcher's familiarity clouds objectivity), but can be a resource that allows teachers to describe the interactions of the students within an undergraduate teaching space (Alvesson 2003; Nespor 1994). Ultimately, he argues that "close-up" studies of contexts with which the researcher has considerable geographic, conceptual or social proximity can be of value (Alvesson 2003).

In describing the related notion of "at-home ethnography", Alvesson (2009) offers four strategies for mitigating some of the risks that arise from the researcher's proximity to the social context being studied: using "positions of irony or self-irony" (p. 168) to create distance; using "theories that challenge common sense" (p. 168); using a repertoire of conceptual tools and theories broad enough to permit the interpretation of evidence in a range of different ways; and challenging the interpretation that the researcher arrives at by using a radically different standpoint. These considerations guided the design of our study. For instance, one of the teaching-team members acted as the "devil's advocate", constantly questioning the rationale and justification for the design of the subject. Even when evaluating the success of the subject delivery and student performance, this particular team member challenged the findings and constantly pushed for alternative

explanations. This approach, even though it was difficult to manage initially, ensured greater depth and validation of our reflections and analysis. The team came up with several alternative theories to situate the design and delivery within theory. As time went on, we had more time to reflect and discuss various other theoretical approaches, and our understanding evolved with time, resulting in more-insightful peer discussions. Our approach of involving various members of the teaching team at various stages of interpreting, analysing and writing the paper also helped us to validate our findings. We present our analysis in the form of an ethnographic write-up where the interpretations of our reflections were continuously reframed between June 2014 and April 2018, with ongoing iterations between the nine authors. In the spirit of proposals to apply reflective writing in teaching research (Holly 1989; Ryan 2011), the tutors wrote their reflections individually. The teaching team was asked to respond to the following prompts:

1. Training and development workshop: What worked, what did not work and why did they not work? What did you use from the workshop for the students?
2. Working with a new team in a collaborative manner and learning from each other via online marking through Moodle: What were the key challenges, what worked, what did not work?
3. Developing the writing skills of the students from week 3 onwards: What were the key challenges, what worked, what did not work, and why did they not work?
4. Use of Turnitin and Moodle marking and providing weekly feedback to students: What were the key challenges of using Turnitin and Moodle to mark and provide feedback? What were the good outcomes of using Moodle for marking?
5. Did the tutorial-writing workshops and weekly group case-study analysis feedback help to improve the overall quality of the essays and the exam case-study answers? Compare against your experience in previous semesters.

The teaching team also met several times as a group to discuss these reflections, distil meaning from the experiences reported and understand differences and similarities in the team's experiences across different student groups. Then, two of the academics manually identified common themes and similarities to make sense of the individual and group reflections and experiences; the results were shared with the whole team. Team members provided feedback on the themes identified. Measures were also taken to ensure consistency of analysis. When the team members' experiences pointed to contradictory conclusions, the course coordinator brought in another member of the teaching staff to clarify the rationale and make sense of the disagreements.

### ***Assessment-task overview***

The first assessment (tutorial task) required students to individually read a given journal article, then give a 50- to 100-word summary of the issues highlighted in the article, use relevant management concepts and theories to analyse the findings (200 to 250 words) and propose how the article's concerns could be addressed (100 words). After preparing the individual answers in pre-class time, students discussed them with their group (before and during class time), developing answers as a group and writing them on the answer sheet during the weekly tutorial assessment. Tutors marked the group assessment based on the quality of the answers in terms of the group's ability to address the question and apply relevant theories and concepts from the subject material. The teaching team provided feedback on each assessment via Moodle (online platform). Tutors provided feedback for the first assessment via a marking rubric and applied it consistently across the range of activities; a different rubric was used for the second assessment. The use of online rubrics meant that each tutor was applying the same tool for grading, and thus reducing factors that could affect the overall grading. In addition, the consistent approach to marking and offering

feedback based on observation and reflection afforded the cohort equal opportunity to develop from the feedback, and thus allowed individual students to self-manage their learning opportunity and growth throughout the semester of study, culminating in knowledge application in the final assessment (the exam).

The four objectives of the writing task were 1) to encourage autonomy among the students to understand the theoretical content that was delivered in lectures, using weekly academic readings and videos; 2) to encourage peer learning and socially constructed knowledge by working in small teams to prepare the answers for the weekly questions; 3) to improve individual competence; and 4) to provide an opportunity to learn from the feedback and apply it to the following week's assessment task. Overall, the assessment structure aimed to change traditional classroom teaching by focusing on cognitive and social activities involving peers. Specifically, students were required to prepare for the assessment individually, and to prepare an individual critical reading grid before the tutorial. The students were encouraged to meet their team members before class, critically discuss and analyse their individual answers to the questions and share their reading grids, which listed the answers to the questions in bullet points. They were then encouraged to come to an agreement on the group answers to the questions. Students were also encouraged to take particular leadership roles within the team each week; their role in the team was peer assessed, indicating the roles played by the team members and their contribution. Finally, each group would answer the given questions within the tutorial.

The second assessment was a quiz designed to develop the learners' competence in the subject matter, and to reinforce important theoretical concepts. Students could use the resources on the textbook site through a link on the online learning platform (Moodle); options included the opportunity to practice the multiple-choice questions that would appear within the quiz. The scheduling for the second assessment was mid-way through the semester of study.

The third assessment was an individual essay for which students would analyse a case study using the same critique and analytical strategies applied in the first assessment. The analytical skills developed through the group assessments and the individual learning of concepts achieved through the completion of the quiz in week six were fundamental to completing the third assessment. Again, this approach corresponds to the scaffolded framework explored earlier as a foundation of SDT. This design enabled the learners to move from being dependent on their peers and the tutor to becoming autonomous as they developed their individual competence. The purpose of allowing students to write the essay at home in their own time was to ensure that the assessment was not too challenging, in accordance with the principles of scaffolded learning. The last assessment, which was the final exam, required students to apply similar analytical and critical skills to a case study, much like assessments one and three.

### ***The limitations***

While there has been thoughtful consideration of the content design and the teaching team's experience and input, there has been no student voice in this study. Future research could address this limitation by incorporating an opportunity for students taking part in the course to provide feedback on the impact of their transition from the first assessment to the final assessment task, giving both teachers and students the opportunity to assist future course design.

## Findings

### Autonomy

Self-determination theory was used as the foundation for developing and designing the assessments (Figure 1). The tutors participated in a training workshop led by a learning-development professional, who provided the tutors with a tool kit that included resources the teaching team could use in their tutorials to help students develop an understanding of what is meant by “argument”, understand the essay-writing process, write good paragraphs and use the referencing techniques required at tertiary level. The tool kit also included resources that helped the teaching team to provide meaningful and constructive feedback to the students.

The teaching team delivered a workshop to their students in week three, during the regularly scheduled tutorials, based on the workshop learning and the tool kit they had received at the tutor training workshop. This meant that the whole cohort received the same learning opportunity early on in the subject to understand the skills and information they required to successfully complete the assessments. Tutors indicated that the students appreciated the materials provided to them to learn about referencing and critical reading. This was particularly appreciated as the academic writing, critical-reading and critical-analysis skills covered in the workshop were generally unfamiliar to the newly enrolled students.

*While sitting in a university class for the first time itself is a huge transition, the concepts, such as referencing, critical reading, using academic sources and group work, are unfamiliar to most of the students enrolling in a first-year subject. (Teaching-team member 2)*

*Students were in general receptive and thankful for the content provided in relation to recognising and using appropriate academic research material, and more so in relation to acknowledging the correct use of such content within their own works. (Teaching-team member 7)*

Tutors stated that they saw incremental improvement in students’ reading, analytical and writing skills in the weekly group assessments in class. Tutors indicated that as the semester progressed they observed how students became more aware of their team members’ individual strengths and took the opportunity to learn from them. For example, some students were better at referencing techniques or writing more analytically. As a consequence of such peer learning, some teams received better marks in their group as well as individual assignments. One of the tutors commented:

*As the session progressed, it became evident that students identified strengths of their peers and took advantage of such competencies. It was clear that students were not only finding their own place and identifying the best means for contributing to a team-based written paper, but you could easily see the relationships between some teams strengthening week on week. It was these teams who had obviously made a concerted effort to prepare as individuals and also as a group before coming to the tutorial class. (Teaching team-member 7)*

### Competence

All assessments were marked and feedback was provided through the online learning platform (Moodle). Although it was a time-consuming mode of providing feedback and required some tutors to learn new skills, the tutors reflected on how their students benefited from online weekly feedback. They acknowledged the importance of providing feedback that was more specific, rather than generic, and providing additional materials to the students, especially the list of various verbs and transition/signal words for the students to use in their assignments. The tutors also indicated that their ability to identify particular strengths of the group and the members helped students. The positive reinforcement and specific feedback may have enabled students to understand their strengths and learn from their member competencies.

*For students, highlighting the specific areas that needed improvement and linking them to the theories they had been taught and the additional materials they had been provided (for example, reporting verbs, modal verbs and transition/signal words/connectives) – rather than general comments – had more potential for supporting their learning experience. Similarly, positive comments and feedback on the specific strengths of group work proved to be helpful for the students. (Teaching-team member 3)*

The tutors reported that in the final exam they saw an improvement in students' ability to analyse the exam case study and respond to questions in a more structured and meaningful manner. Most of the tutors who had taught and marked the exam for this subject for several years suggested that ongoing feedback and scaffolded assessments may have helped students to analyse the case study and answer the exam questions better. This was particularly evident with students who had performed well in their group assessments. The ongoing feedback seemed to have enhanced learners' competence in linking theory to the case studies and allowed them to develop their reading, writing and analytical skills. This, in turn, helped them to perform better in their individual assessment (the 1,500-word essay due in week ten) and the final exam, particularly the case-study questions. Two tutors commented:

*Yes, it surely did improve students' exam case-study answers. Students who were performing well in groups demonstrated an in-depth understanding of addressing case-study questions. There was only one failed script. (Teaching-team member 1)*

*I have been marking case-study-based assessments for the last five years. From a marker's point of view, I could see a tremendous improvement in the case-study analysis of students in 2014. Initially, most students were not able to link theory and the case and also failed to add in-text references. A significant change in students' learning experience was identified in the case-study analysis in the final exam. (Teaching-team member 3)*

While tutors acknowledged that the increased time commitment required to provide meaningful feedback to students could be a deterrent, they also said that the outcome (i.e., improvements in students' performance) could be very meaningful.

### Relatedness

The students' ability to analyse the weekly journal article and write the group assessment depended on whether they attended the weekly lectures. Each week, the lecturer would specifically link the lecture topic to the group-assessment questions and give examples of how students could analyse the issues. The classroom activities encouraged students to engage with the content and socially construct knowledge within a new environment (Blanchard & Thacker 2010).

According to the tutors, students who attended lectures regularly seemed to actively participate within small learning groups and show a deeper understanding of the topics covered in the subject. For instance, students who attended the lectures regularly tended to understand the link between the subject material and the journal article. Consequently, these students seemed to perform better in the weekly group assessment. One of the teaching-team members commented:

*The shift in attitude and understanding of the value added through this exercise [workshop material and weekly in-class group assessment] began after the mid-session test. Some of the students, the more diligent ones and those who attended lectures more frequently, began to see the value of the weekly group assessments and understood how the incorporation of journal articles with the management theories served to enhance conceptualisation and obtain a deeper level of knowledge of these topics. (Teaching-team member 7)*

The process of weekly group work and feedback was helpful for developing students' writing skills and for encouraging learning among peers. Tutors believed that the group assessment transformed the learning experience into a social activity, enhancing student interaction. Tutors tended to attribute the improved student ability to read, research and analyse issues academically to the weekly group assessments. They saw this improvement in the student skill level and performance in the third assessment and final exam case study analysis as linked to the scaffolded assessment structure and the active-learning approach used within the subject. However, a few students in each tutorial did not use the group assessment as an opportunity to learn the necessary skills to improve their performance in the individual assessments. This seems to be reflected in their marks. One of the teaching-team members stated:

*Individual results for the final exam and assessment 3 varied quite significantly. There were the ones that presented strong evidence of learning from the weekly exercises. They contained examples of critical reading and academic argument and how they should be structured and organised. At the same time, there were performances that showed little of what had been taught, discussed and practiced in the class. (Teaching-team member 2)*

This variation in performance might be due to the group dynamics and the level of cohesion in each group, which may have influenced their level of engagement in the group assessment. A member of the teaching team commented that the groups with evident performance improvement were those whose members had prepared before tutorial classes, and had clearly delegated duties, and used both the opportunity to learn from their peers and their peers' strengths, thus demonstrating social learning in the weekly class activities.



***Influence on major assessment task***

The improvement in students' performance is evident in the results of their final exam, in which the students were asked to independently answer the case-study questions. The abilities of academic reading, analysis and writing they had developed via the scaffolded assessments and active-learning approach could have led to the reduction we saw in the number of technical fails, compared to the 2014 autumn session cohort. Technical failure occurs when a student passes the subject overall (scores 50 or over for the subject) but fails the final exam. The outcomes of the 2014 spring session (Table 2) demonstrate improvements in the students' results over the 2014 autumn session. We believe that using the scaffolding approach in conjunction with the active-learning approach may have helped to achieve this.

**Table 2. Outcomes (comparison with previous session's performance)**

Mark	Spring Session 2014		Autumn Session 2014	
	Number of students	%	Number of students	%
85+	20	5%	26	7%
75+	111	27%	86	22%
65+	155	38%	131	33%
50+	87	21%	92	23%
Received less than 50 overall in the subject	23	6%	26	7%
Technical fail (failed exam but passed subject)	6	1%	22	6%
Total declared	411	100%	397	100%
Average	67.87		65.9	
Standard deviation:	13.12		16.01	

The comparative results demonstrate the possibility that the students benefitted from the scaffolded assessment structure and the ongoing feedback. Moreover, the peer learning, as part of an approach to knowledge development as an element of social learning, contributed to students' greater competence to complete their final task.

**Discussion**

The aim of the study was to assess how university academics can align first-year business students' motivation to generate better engagement, learning and performance by using active-learning approaches. Specifically, we aimed to assess how scaffolding the assessment structure, providing continuous feedback on scaffolded assessments and encouraging socially constructed

peer learning develop individual student's competence, and, in turn, support students' performance in the final examination. The study adds to the research on the significance and influence of the use of self-determination theory in adapting an active-learning approach and developing assessments. The assessments were structured around autonomy, competency and relatedness.

**Autonomy:** the teaching team designed scaffolded assessments to support autonomous learning to help students co-construct knowledge with peers and engage with the subject content in a more meaningful manner. Such autonomous engagement can help students to be more intrinsically motivated and perform better in the subject. The first assessment, which required students to work in teams, seemed to generate opportunities for active learning, which can help students become autonomous while having the support of their peers. This may have helped students to adapt to the tertiary educational setting, and acquire the confidence to do the third assessment on their own while remaining more intrinsically motivated. Thus the scaffolded assessment structure allowed students to become autonomous gradually.

Teachers are integral to students' developing autonomy, particularly in developing assessments, providing feedback and determining criteria and standards (Nicol & Macfarlane-Dick 2006; Niemiec & Ryan 2009). Ongoing specific feedback on the scaffolded assessments from week four onwards seems to have helped most of the students to develop autonomy and intrinsic motivation as they learned from the feedback. All four assessments were scaffolded and designed to develop learner autonomy. Lectures provided the students with the basic understanding of the theoretical content; this was tested in the online quizzes held during the semester and the questions presented in the final examination. However, as explored by Jones (2017), students found quizzes to be valuable, but preferred team-based activities. We included both quizzes and team-based activities using an active-learning classroom approach. In this way, we transitioned slowly from a traditional pedagogical teaching approach to one of andragogy, in which the teacher is a facilitator, and students' motivation and desire to learn and develop, succeed and flourish in the context of higher education become apparent (Chan 2010).

Beaumont, Moscrop and Canning (2016) found that scaffolding the assessments helps students to cope with the demands of university learning. In tutorials, the teaching team provided students with the guidance to understand and analyse the journal articles. After reviewing and analysing the articles, the students worked independently on answering the questions. The social construct of the peer-learning context enhanced the students' individual abilities in reading, analysing and writing. The first assessment led the students to perform better in their final exam compared to the previous cohort, who did not have the same scaffolded assessment structure, or the opportunities for peer learning. The changes in students' performance were evident in their final-exam marks, where there was a reduction in the number of technical failures compared to the 2014 autumn-session cohort. This result is in accordance with Rose, Gray and Cowey (1998), who also found that students become more autonomous and positively benefit from a scaffolded assessment structure.

**Competence:** Enabling students to master knowledge in a given subject area allows them to become effective learners (Sheldon & Filak 2008). The teaching team supported the learners in the initial stages of assessment by providing instructions and guidance during the lectures and tutorials. Providing positive and negative feedback (Vallerand & Reid 1988) at an appropriate frequency (Nicol & Macfarlane-Dick 2006) contributes to students' competence. We constructed assessments to ensure that the students received ongoing feedback from the very beginning of the semester (week three) through the online portal, creating an opportunity for them to reflect on their learning and improve their performance on future assessments. The students submitted the individual essay (the third assessment) via the online portal, and the feedback was provided before

the final exam. This created further opportunity for individual reflection, and thus knowledge creation, through the scaffolded assessment structure. The teaching team could see gradual improvement in the students' performance that reflected the students' competence to be independent and critical learners in a university setting. This is aligned with studies by Boud (2000), Nicol (2010) and many others, who argue that the importance of providing reflective feedback in a timely manner has a positive influence on developing competence.

Even though Butler (1987) argues against the grading of assessments, the teaching team, each member of which has at least three years of experience, argues that grading the assessment motivates students to proactively develop knowledge to increase competence. We provided the students with ongoing feedback for the scaffolded assessments. This ongoing feedback provided an opportunity for the students to master the analytical skills required in the individual essay and the final examination. Providing the students with grades did not have an adverse effect on their performance because the scaffolded nature of the assessments provided the students with opportunities to improve their performance. Further, the structure of the assessments and feedback presented students an opportunity to develop internal motivators and self-direction in learning, which, in turn, provided a greater level of learner focus, in accordance with the principles of andragogy.

**Relatedness:** Unlike baby boomers, millennials seem to prefer teamwork (Kleinhans et al. 2015). When young-adult learners become connected learners, who are able to pursue a personal interest with the support of peers and are, in turn, able to link their learning and interest to academic achievement, they can develop resilience to overcome adversity (Ito et al. 2013). This study highlights that group assessments and peer learning can help students to challenge their understanding of concepts by engaging in dialogue and critical analysis. The students used online tools, such as Facebook, to work collaboratively. Van Nuland et al. (2012) state that students are likely to flourish when they work with their peers, as it provides them with a sense of security. While the majority of students benefited from working in groups, some were critical of the process, feeling that the marks allocated for the group work did not reflect the time and effort they had spent on completing the task.

In contrast to Burke and Fedorek's (2017) findings, the current study indicates that encouraging a collaborative learning approach amongst the students provides a better feedback loop for both the academic and social transition of university students. It also encourages the interactional aspect of scaffolding and recognises academic literacy as a social process (Bauer & Liang 2003), rather than a set of mechanical skills. Nonetheless, as this study has shown, students' enhanced academic literacy and better performance can be realised as the collective effect of adopting a collaborative learning process, supplemented by scaffolding (Figure 1). However, we compared the results to only one semester, as this research uses a case-study method, and thus the results cannot be generalised. However, the study does not underestimate the significance of a multitude of other factors affecting the outcome, including, but not limited to, the context and environment in which the processes took place, and how the processes themselves unfolded.

## Implications and Conclusions

This study adds to the existing literature on active classroom learning by integrating it with the principles of self-determination theory. Specifically, our study provides empirical evidence for how a collaborative, socially constructed peer learning approach, scaffolded assessments and ongoing specific feedback on assessments can help to enhance business tertiary students' learning

experiences, competence, motivation and performance, which in turn can help to improve retention during the first year of tertiary studies. Given current young adults' decreased tolerance for traditional lectures, an active-learning approach was implemented in the introductory subject to develop three key elements among the students: competence, autonomy and relatedness. The assessments helped students to challenge their understanding of the concepts by engaging in critical analysis with their peers, and created a platform to develop critical reading and academic arguments. Students used online tools, such as Facebook, to bring their groups together. Researchers could consider extending this research by using self-determination theory to understand the dynamics between autonomy, relatedness and competence using a longitudinal study incorporating both student and teacher perspectives.

Further, academic developers might implement alternate online tools, such as Storify, Wikispace and Skype, to enhance students' experience. Researchers may also look to determine links between findings and organisational learning, and consider if the learning is continuous throughout students' tertiary education and applicable to the workplace; links to knowledge management may be an area of focus. There is also an obvious opportunity to determine the influence of team dynamics and individual variances in group members as a foundation for knowledge development, and how these characteristics can serve as beneficial approaches for ongoing learning in a university context.

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