

## Facilitating a deep approach to learning: An innovative case assessment technique

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### Abstract

*This research is an attempt to explore the impact of an innovative case assessment technique on a deep versus surface approach to learning as adopted by a large cohort of undergraduate management students studying in a reputed University. Specifically, a case assessment incorporating peer assessment in the form of a Case Challenge was introduced by the researchers to enhance deep learning, as an innovation to compartmentalized approaches to case assessment that may foster surface-level approaches to learning. Data collected through structured interviews suggest that inclusion of a challenge component in case analyses, directed and led by a peer group, substantially increased the level of preparation and ownership assumed by both the presenting team and challenging team in their own learning as also learning for the rest of the class. Results are discussed in the context of contemporary literature on learning-oriented assessment in general and the impact of peer assessments on deep versus surface approaches to learning in particular.*

**Keywords:** deep vs. surface approaches to learning, learning-oriented assessment, case assessment, peer assessments

There is a rising level of consciousness among academics about the significance of outcome centred assessment in response to growing competition and increasing pressure from accrediting bodies. As such, there is a growing realization that assessment design needs to enable deeper approaches to learning among students. Furthermore, as a response to meet the dual challenge of adopting student-centred approaches to teaching and learning while meeting national and international accreditation standards, institutions of higher education are increasingly focused on ‘outcomes-centred assessment’ (Salter, Pang, & Sharma, 2009) and ‘constructive alignment’, defined by Biggs and Tang (2009) as a process wherein we:

Systematically align the teaching/learning activities, and the assessment tasks to the intended learning outcomes, according to the learning activities required in the outcomes. (p. 7)

to ensure learning that is more sustainable through development of skills valued in real-life situations.

Indeed, constructive alignment is not about the cosmetic changes one brings to designing

curriculum and subject outlines in alignment with learning outcomes at the level of the subject, program and degree. The true test of constructive alignment is reflected when graduates pursuing a degree program acquire and internalize the knowledge and the skills that the degree outcomes state the students will attain at the completion of the degree program. The quality of placements of students after graduation also has a substantial implication for a Universities’ reputation and thus academic standing in the market. Scholarly research has noted the need for management education and associated content and methodologies of teaching to be revised and redefined to keep up with the demands of a changing business landscape by developing relevant competencies (McDonald, 2010; Jackson, 2009; Bubna-Litic & Benn, 2003; Mathews, 2003; Dimmock, Breen, & Walo, 2003). Further, it was noted that differing learning styles of students warrant a relook at the traditional paradigms with efforts to be made to come up with new content and methodologies when designing business curriculum (McKenna & Williams, 1997). There is an urgent need therefore for academics to identify mechanisms by which approaches to teaching and assessment

design can engage a wider spectrum of students and stimulate deep, as opposed to surface learning, while ensuring that the students are attaining learning outcomes for the subject and the degree.

Biggs and Tang (2009) define good teaching as:

Getting most students to use the level of cognitive processes needed to achieve the intended outcomes that the more academic students use spontaneously. (p. 11)

The significance of designing assessments that support life-long learning as opposed to learning that results in short-term outcomes is increasingly being focused on in assessment literature (Boud & Falchikov, 2006; Gibbs & Simpson, 2004–2005; Boud, 2000). Intense debate also centres on how to facilitate deep approaches to learning through teaching, learning and assessment. The shared focus here is on designing assessments that stimulate students to take an active role in their learning as evidenced by their attempts to engage in in-depth learning as opposed to piecemeal and short-cut approaches that at best lead to surface-level learning (Marton & Salijo, 1976a, 1976b, 1984; Biggs & Tang, 2009; Ramsden, 1992/2003; Gibbs & Simpson, 2004–2005). These concerns provide the impetus for this study, which examines the impact of a creative case study assessment technique in facilitating deep approaches to learning among undergraduate students, while building skills for life-long learning. Typically, case study assessments are situational examples to be reviewed and evaluated to examine how a business problem has occurred and how to ensure that similar problems can be prevented in future. As such, it is widely believed and accepted that case assessment is an effective tool for building meta-skills such as problem-solving and decision-making and leads to higher levels of learning as reflected by participants applying, analyzing, evaluating and creating. However, compartmentalized approaches to case assessment may trigger a surface learning approach devoid of any long-term implications for learning, thus failing to achieve the higher order cognitive thinking that case assessments are designed for. This compartmentalization may result when case assessments are designed as group assessments based on the fundamental assumption

that students would benefit from group preparation and informed case discussions thereby leading to enhanced learning. However, in specific situations wherein individual contributions to group outcomes are unidentifiable, social loafing may result as evidenced by inadequate case preparation resulting in a failure to achieve deep learning. A popular technique to address this lack of shared responsibility and accountability is to incorporate individual questions and peer evaluation into the assessment design. Davidson's (2002) research supports the theory that high complexity questions, test students' higher order cognitive skills acquired through the deep learning approach. However, several research studies have criticized the inadequate and skewed focus of having peers as substitute graders in academic institutions. It has been noted for example, that peer assessment as a 'summative assessment tool' may have very limited benefits for learning, and may be ineffective due to lack of time and peers' lack of familiarity with the assessment criteria itself (Sivan, 2000; Cheng & Warren, 2000; Liu & Carless, 2006). Literature documents that using peer assessment leads to increased competition which is in direct contradiction with the collaborative mindset and skill-set that group assessments such as case assessments in groups are trying to foster (Lopez-Real & Chan, 1999).

To address the specific issues as highlighted in the aforementioned section, the research team designed and implemented an innovative case assessment technique. Specifically this study examines the impact of this creative peer assessment technique (within the context of case assessment) on a deep versus surface approach to learning as adopted by students, besides developing relevant work and life skills. The fundamental motivation that drove this research team teaching large group of undergraduate students was how to find ways to make students more accountable for their own learning as opposed to being passive recipients of learning, through enabling them to take a deeper approach to learning.

This paper is structured as follows: the first section provides a review of assessment literature with specific reference to guidelines that must be met for deep learning to occur. These

include references to formative and summative assessment, self-assessment and peer assessment. This section will conclude with a critique on case assessment and related literature. The second section elaborates on the methodology adopted for the study and the final section concludes with the results and discussion.

## REVIEW OF LITERATURE

The key question in a particular assessment practice is 'How does this assessment practice support learning?' At the heart of Biggs' (1999) notion of 'constructive alignment' is the close link of assessment tasks with learning activity. Biggs and Tang (2009) further state that 'it is not what *teachers* do, but what *students* do that's important' (p. 19) thus reiterating that higher levels of learning can only be achieved when we first articulate desired levels of understanding to be achieved by students and then design assessment-tools to facilitate the same. According to Biggs and Tang (2009), teaching and assessment that stimulate students to take an active role in their own learning is reflected when students ask informed questions, hypothesize, engage, apply and present problems. Ramsden (1992/2003) further suggests that it is the design of assessments that influence students' perception of task requirements, which in turn will determine what type of learning approach they take. Ramsden (1992/2003) and Ellmers, Foley, and Bennett (2007) also provide evidence that change of learning context such as curriculum, teaching methods and assessment procedures will change the approach students use to learn. This view is supported by Boud and Falchikov (2007) when they state that 'assessment rather than teaching has a major influence on learning' (p. 4). They express concern at the traditional conceptualization of assessment, which reduces students to passive recipients as opposed to enabling students to take ownership of their own learning, thus failing to enhance higher levels of learning. Marton and Salijo (1984, 1997) highlight students feeling of resentment, depression and anxiety when they are obliged to use a surface approach to learning. In contrast, the deep approach relates to a sense of involvement, challenge and achievement, together with feeling

of personal fulfilment and pleasure. Svensson (1977) attributes better performance in exams to higher interest level students experience in the deep approach and vice-versa (Booth, Lockett, & Mladenovic, 1999). Esposto and Weaver (2011) has also reported enhanced student attendance and engagement as an outcome of continuous assessments combined with feedback among tutorial groups. Gibbs and Simpson (2004–2005) also provides a set of guidelines that need to be met before assessment can foster deep learning. These include designing assessments in a way that require students to spend sufficient time and effort of a kind that engages them in productive learning activities. In fact, the authors reiterate that the nature of experience while working on the assessment, such as during group discussions is even more valuable for learning than the outcomes of the project (Gibbs & Simpson, 2004–2005).

A related focus in assessment literature is the urgency for designing sustainable assessments that enable the development of skills required to succeed in real-life (von der Heide & Lamberton, 2011; McDonald, 2010). Drawing on cues from the conception of a learning society and sustainable development, Boud (2000), for example proposed the need to design 'sustainable assessments', which he defined as 'assessments that meet the needs of the present without compromising the ability of students to meet their own future learning needs' (p. 151). This essentially means that assessment design must foster the kind of contextualized learning reflective of real-life challenges. For example, Boud and Falchikov (2006) contend that as opposed to learning through acquisition of knowledge, which most traditional assessments focus on, real-life learning often occurs through collaboration and participation within the communities of practice as real life remains embedded in the specific contexts of socially embedded situations. One of the ways in which this capability may be developed includes providing student communities with opportunity to collaborate, while familiarizing them with criteria and standards of assessment. For example, Hunter, Vickery, and Smyth (2010) have noted the significance of group work in building skills relevant for real life such as communication, and ability to

work in teams. Furthermore, there is evidence for the merit of enabling students to develop skills to assess the quality of one's own work and those of the others within the context of these criteria and standards, a skill vital to a professional's life (Boud, 2000; Boud & Falchikov, 2006).

Another theme in assessment literature that is of relevance to this discussion on deeper approaches to assessment is the formative versus summative aspects of assessment feedback. There is substantial evidence to indicate that as opposed to an overemphasis on grading and summative assessment, formative feedback when detailed and timely, foster intrinsic motivation while fostering student engagement with learning at a deeper level (Gibbs & Simpson, 2004–2005; Sadler, 1998; Black & William, 1998a, 1998b). This learning is effective particularly if there are opportunities to act upon formative feedback because it provides recipients a chance to improve subsequent work thus closing the feedback loop (Zutshi, Mitchell, & Weaver, 2011; Higgins, Hartley, & Skeleton, 2002; Boud, 2000). This finding is further substantiated in a recent study by Boud and Falchikov (2007) who suggest that feedback can reduce students to passive recipients if given as term end feedback or in a way that impedes students' capability to make informed judgments about their learning. It follows therefore that some form of formative assessment must combine with summative assessment. Carless, Joughin, and Liu (2006) for example, have proposed a conceptual framework for learning-oriented assessment, which particularly focused on the significance of formative assessment followed by summative assessment to facilitate on-going learning besides informing the extent of learning and achievement by students.

The preceding discussion signifies the need to balance formative with summative feedback to benefit student learning in the longer term by promoting deep instead of surface learning. Assessment rather than teaching has major influence on learning including students spending sufficient time and effort to engage in productive learning activity. It argues that design of assessment determines if students will adopt a deep versus surface approach to learning. This assessment needs to be sustainable, with contextualized learning, collaborative and

participative within community of practices such that participants are able to assess both one's own work and that of peers. Furthermore, an objective assessment criteria combined with a more formative assessment component that emphasizes one on one feedback helps students make informed judgments about their learning.

However, with the modularization of courses and short semesters coupled with increasing workload and class sizes, and increasing pressure on academics to produce high quality research, it may not always be practical to provide detailed one on one formative feedback. It is within this context that peer learning assumes utmost significance. Carless et al. (2006) coined the term 'assessment tasks as learning tasks' reiterating the significance of not only designing assessments that facilitate learning but also involving students to engage in self-assessment and peer assessment, which when combined with timely feedback further inform students about the criteria and standards, thus raising their capability to review and improve their own and others work. There is substantial support for the significance of peer assessment as a contributor for student engagement with the assessment process besides contributing to their ability to develop critical thinking skills and other skills relevant for practical life such as ability to evaluate one-self and others (Thomas, Martin, & Pleasants, 2011; Higgins et al., 2002; Sivan, 2000; MacAlpine, 1999).

To what extent are these benefits as discussed previously realized in reality? A review of related literature provides evidence that peer assessment has been traditionally used in summative grading. For example, a very popular method of peer assessment is to have peers review each other's contribution during the formative stage of group projects and provide a summative report of the same to aid the tutor in identifying individual contributions. Peers have also been involved in summative grading such as grading of presentations with associated advantages. Cheng and Warren (2000) provide evidence for example that incorporating some form of peer assessment lead to a much wider spread of marks by identifying individual contribution thus enhancing perceptions of fairness and equity.

However, there are some criticisms levelled against the use of peers for grading purposes. For example, there is evidence to indicate that involving peers to grade each other may lead to an in-group versus out-group feeling resulting in unhealthy competition, in turn casting doubt on the reliability of the grades as given by the peers. In order to combat this problem, Lopez-Real and Chan (1999) propose an additive model to foster a collaborative spirit while enhancing perceptions of fairness by combining a *process assessment* involving peer assessment of individual contributions to group outcomes and assessment of the final project or *product assessment* by the tutor. As such however, involving peers in grading adds value only when peers have the knowledge and understanding about assessment criteria and standards, besides having some practice in applying the same (Cheng & Warren, 2000). Several factors may lead to lowering the confidence in peer assessment including lack of reliability in marking by peers due to inadequate understanding of criteria. This may be compounded by the lack of time in making informed assessments, and general discomfort among peers with regard to the need to exercise power over one another that is inherent in the grading process (Liu & Carless, 2006; Cheng & Warren, 2000).

It is evident from the preceding discussion that while there are opportunities for students to extend from *self to others* when engaging in some form of peer assessment, thus facilitating deeper learning (Liu & Carless, 2006), it is necessary to take specific steps to enable a shared understanding of assessment criteria if one is to achieve these benefits (Carless, 2006). Various authors have advocated the need to engage students in the process of setting criteria and standards of assessment early on in the process, while giving them practice in applying the same (Sivan, 2000; Mauffette-Leenders et al., 2007; Cheng & Warren, 2000; Liu & Carless, 2006). This would create more buy-in for the process by not only giving a sense of control, but also enhancing understanding of the process thus enabling them to apply such criteria appropriately.

However, while the reliability of the grading process is substantially improved with

well-informed peers who are familiar with the application of established standards and criteria as per marking grids, this over utilization of *peers as substitute graders* for summative assessment may in itself defeat the purpose of learning. For example, Liu and Carless (2006) suggest that instead of using peer assessment as a *means to an end*, this process of involving peers is treated as *an end in itself*. The authors differentiate *peer feedback*, defined as 'a communication process through which learners enter into dialogues related to performance and standard' that are more facilitative of learning, from '*peer assessment*' which denotes 'grading of peers' (Liu and Carless, 2006, p. 280). This finding extends results from earlier studies that favour peer feedback embedded as a natural process within the context of learning thus providing opportunities to engage with others in meaningful discussions. Such a process aids self-reflection and is much more conducive to learning as opposed to asking peers to classify each other on ill-defined scales (Boud, 2000; Sadler, 1998; Falchikov & Goldfinch, 2000; Stefani, 1998).

The fundamental paradigm that drives the previous discourse is that assessments must enhance deep learning such that it helps students to develop an understanding of important content while cultivating intellectual skills and generic life skills. In the assessment perspective of Gibbs and Simpson (2004–2005) the assessed task should capture sufficient time and effort, distribute student effort across topics and weeks, besides communicating clear and high expectations from students and engaging students in productive learning activity. Furthermore, when summative assessment aligns with formative assessment *deep* rather than *surface* learning is more likely to occur. One of the challenges though is designing assessment tasks with a summative component that can successfully perform a formative function as well. A further challenge that can be identified from literature is how to design learning-oriented assessment tasks in a way that best involves students in the evaluation of their own work and that of their peers. It is evident from the preceding discussion that this would require building feedback or feed forward loops whereby students use information provided to progress on their work. In the process,

students would not only be informed about the criteria and standards of what constitutes good work, but also develop competencies to become independent learners, capable of monitoring and improving quality of their work not only within the context of the class environment but also as life-long learners within their own professions.

The present study builds on the aforementioned findings to:

Examine the impact of a creative peer assessment technique on deep versus surface approach to learning, as adopted by a large cohort of advanced undergraduate management students in a reputed higher education institution.

Specifically case assessment forms the frame within which the criteria and standards of this creative approach to assessment has been designed.

#### RATIONALE AND BACKGROUND

It is well documented in literature that case assessments involve higher cognitive processes requiring student involvement in the learning process (Bonwell & Eison, 1991). Case analyses are student-centred activities based on topics that demonstrate theoretical concepts in an applied setting (Davis & Wilcock, 2008). Business case studies refer to real situations in on-going companies, problems that people in designated roles in organizations need to address in order to run the business successfully and contain considerable real data from the industry and the specific firm. Cases typically include unclear problems that may contain irrelevant or redundant information, which requires the student to isolate the key issues with an identification of the symptoms underlying actual problem. Furthermore, cases are used as learning aids as they allow (the student) to step figuratively into the position of a particular decision maker. The strength of case assessment in management schools lie in students applying business principles to solve real situations and then defending the recommended course of action before their peers and instructors in class. Case assessments when implemented well, not only serve the purpose of facilitating students to understand theory, but

also helps to connect theory with application, and helps to develop critical thinking skills and generalizable insights (Elkin, 2002). To achieve this objective, case assessments require students to engage in scholarly research and some form of peer discussion and application of theory to practice with intermittent interaction with the lecturer thus leading to more in-depth learning. Characteristics of such assessment tasks include close relation with some real-life activity, reflecting what students need to do in the chosen field of practice, promotion of knowledge and skills that the course requires, thus enhancing student appreciation of purpose and value of task, This is further enhanced when the task extends rather than duplicates what is done during class time. Thus, case method is an intensive, engaging and participatory learning method for students and can promote one or more of the following:

- Application of theoretical concepts to help bridge gap between theory and practice;
- Encouragement of active learning;
- Development of key skills such as communication, group work and problem solving;
- Sharing and use of personal knowledge and experience in the case;
- Independent learning skills outside controlled class environment;
- Ability to access and use different resources for information like internet, print, television, library;
- Time management;
- Presentation skills (Davis & Wilcock, 2008; Mustoe & Croft, 1999).

From the evidence as presented here, it is reasonable to assume that case assessments if designed and implemented appropriately can contribute to what has been referred to in the literature as: a) *declarative knowledge* (as demonstrated by factual learning); higher levels of b) *procedural knowledge*, (as reflected by an understanding of how and when to apply the concepts and at the highest level); besides development of c) *strategic knowledge*, (described as a capability to be able to ask the why questions) (Blanchard & Thacker, 2007). However, even if a few intrinsically motivated students engaging in case analyses demonstrate

*declarative* and *procedural* knowledge, overall the opportunities for developing meta cognitive processes such as the capability to ask the 'why' questions may not be achieved, particularly when individual accountabilities are not clearly identifiable. This is possible when case assessments are designed in a fragmented fashion. For example, when case assessments are designed as a group assessment, wherein clear accountabilities and standards are not established at a group and individual level, existing dangers of free riding and secondary internet downloading may result, thereby reducing case assessment to an assessment task involving lower cognitive processes such as *remembering* and *reproducing*. Learning is further hampered with summative assessment by peers on the final presentation by a group, in an environment of limited understanding of assessment criteria.

Mauffette-Leenders, Erskine, and Leenders (2007), stipulate that for holistic learning to result from case assessment, three stages must be adhered to in the strictest sense and these are:

**Stage 1: Individual preparation** (involves individuals to take on the position of the decision maker to address the problem at hand).

**Stage 2: Small-group discussion** (provides an opportunity to test knowledge and understanding, besides fostering idea-generation, team-work and confidence-building).

**Stage 3: Large-group discussion** (comprises class discussion that provides an opportunity to test one's knowledge and to share learning acquired in the first two stages).

**A fourth dimension** includes the *after-class reflection* that closes the feedback loop thereby leading to the highest levels of learning when learning with cases and impossible to achieve when any of the earlier stages are missing (Mauffette-Leenders et al., 2007; Erskine, Leenders, and Mauffette-Leenders, 2003).

Drawing from scholarly research (Mauffette-Leenders et al., 2007; Boud & Falchikov, 2007; Liu & Carless, 2006; Erskine et al., 2003; Gibbs & Simpson, 2004–2005; Higgins et al., 2002; Boud, 2000; Falchikov & Goldfinch, 2000; Sivan, 2000; Sadler, 1998; Stefani, 1998) we therefore propose

that case assessment leads to deep learning only when designed to include:

1. **Formative assessment** as captured in the 'process' component of individual preparation and small-group discussion (Stages 1 and 2 as mentioned before).
2. **Summative assessment** of the 'product', in-class presentation using facts and theory (stimulating large-group discussion or Stage 3) whereby tutor evaluates the final product based on overall performance of presenting and challenge group.
3. **Peer feedback** (as opposed to Peer grading) combined with Summative Assessment by the tutor.

The case assessment technique suggested in this paper includes both formative and summative assessment involving peers and tutors. Furthermore, the case assessment design enables students to take active responsibility for their own learning in addition to developing the capability to review one's own and other's work, which is reflective of higher cognitive processes.

## METHODOLOGY

Participants in the study comprised a large student cohort, studying an undergraduate advanced management class in a reputed private university, based in the United Arab Emirates. The class duration was for 13 weeks and comprised both lectures and tutorials. All students attended the same weekly lecture of two hours followed by 1-hour tutorials. The class is divided into four tutorials with each tutorial comprising approximately up to 25 students.

## Assessment design

Students were assessed on:

1. **Case presentation and defence by presenting group** – This included submission of a written executive summary to tutor and challenging team 48 hours prior to presentation.
2. **A critique of case presentation by a peer group called the challenging team** – This included written submission of a set of questions to the tutor along with academic rationale for each question at the beginning of the

presentation, to be used as trigger for case challenge.

3. **Preparation and participation by all the remaining students in each case presentation, challenge and defence** to be tested through pop quizzes by tutor throughout the semester

Specifically the major assessment component of the course included a presentation and defence of case analyses by a group of up to five students from among the students in each tutorial. Forty-eight hours in advance of their scheduled class presentation, each presenting group was required to provide one copy of the executive summary of their case to the tutor and to the group challenging their presentation. This executive summary and the presentations that followed was expected to identify key themes and issues of the case and provide analyses with recommendations in the context of scholarly literature. This included use of relevant concepts/frameworks learnt in the present course and earlier courses. Another such group of up to five students challenged the presenting group on the case they presented. Each presenting group thus faced a challenging group besides the other students of the tutorial who comprised the general audience. Tutorial groups were pre-allocated in a manner to provide each group an opportunity to present and challenge a case, once, through the 13-week semester. Students were informed in the first tutorial about the assessment requirements, and guidelines provided early in the semester on case analysis and presentation. Furthermore, tutorial groups were engaged in mock presentation and challenge on a test case to further ensure shared understanding of assessment criteria and marking rubrics. Individual preparation by students was ensured by incorporating pop quizzes in class as part of assessment by the tutor to test familiarity and understanding of the case. Attendance was compulsory for tutorials and students were required to inform the tutor in advance in case of absence due to unavoidable circumstances.

### Data collection

Drawing from Mauffette-Leenders et al. (2007), approaches to learning through cases were

mapped in three stages using structured interviews (Table 1).

As indicated in Table 1, case assessment was designed to incorporate the first three stages of *individual preparation, small-group discussion and large-group discussion* as conceptualized by Mauffette-Leenders et al. (2007). As stated by the authors, **Stage 4 (after-class reflection)** that leads to highest levels of learning can only be achieved if Stage 1, 2 and 3 are present. Structured interviews conducted in a staggered manner, had each participant interviewed after they had experienced both

**TABLE 1: INDIVIDUAL PREPARATION, SMALL-GROUP DISCUSSION AND LARGE-GROUP DISCUSSION**

<b>Stage 1: Individual preparation (Mauffette-Leenders et al., 2007)</b>	
Stage 1a	Individual preparation (Presenting Group) Data collected on: impact of challenge component of assessment on breadth and depth of preparation
Stage 1b	Individual preparation (Challenging Group) Data collected on: impact of the 'challenge responsibility' and availability of executive summary of case analysis from presenting group giving breadth and depth of individual preparation
<b>Stage 2: Small-group discussion (Mauffette-Leenders et al., 2007)</b>	
Stage 2a	Small-group discussion (Presenting Group) Data collected on: impact of challenge on quality and depth of group interactions with regard to case analyses and on individual and group accountability of presenting group
Stage 2b	Small-group discussion (Challenging Group) Data collected on: impact of 'challenge responsibility' and availability of executive summary of case analysis from presenting group giving breadth and depth of individual preparation on quality and depth of group interactions, individual and group accountability of challenging group
<b>Stage 3: Large-group discussion (Mauffette-Leenders et al., 2007)</b>	
Stage 3	Large-group discussion Data collected on: impact of the challenge component of assessment on quality and depth of large-group discussion (in class) and achievement of learning outcomes for the general class participants



the presenting and the challenging roles. In addition, the general participant interview captured at the end of the session examined the impact of introducing an additional case challenge component on quality and depth of large-group discussion in class. All participants had assurance of confidentiality of information and their use only at an anonymous and aggregate level.

**RESULTS AND DISCUSSION**

The section below captures student approaches to learning as mapped across the three stages explained in the methodology section.

As illustrated in Figure 1, out of a sample of 71 respondents, as many as 54 (76%) had experience of case analysis and presentation in earlier semesters, as compared to 17 (24%) who did not have any experience of case presentation and analysis prior to this class. As indicated in Figure 2, 43 students (60.5%) had experienced both case preparation in groups and then presentation in groups. Furthermore, as indicated in Table 2, out of these 43 students, 39 (54%) students had prior experience with rudimentary case assessment by tutor/lecturer in the form of questions and answers during group presentations

and based on group reports, reflective of a summative assessment. The remaining 28 students (39.4%) did not have any prior experience with group case analysis and presentation. None of the 71 students however had any prior experience with a formal case challenge by peers based on pre-defined criteria as was being introduced in this study (Table 2).

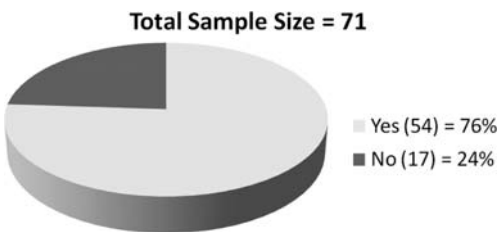
In response to the differing levels of competence and familiarity with case assessments (Figures 1 and 2; Table 2), detailed information was provided in advance by the lecture and tutor for preparing and familiarizing the students with this new case evaluation format comprising both the case presentation and challenge component. This formative preparation of students also helped to ensure that all participants had a shared understanding of assessment criteria (Table 3). This was further

**TABLE 2: STUDENT’S PRIOR EXPERIENCE WITH CASE ASSESSMENT BY TUTOR AND CASE CHALLENGE BY PEERS N = 43**

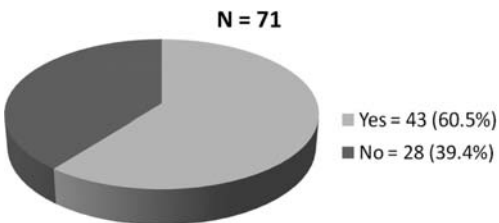
Student prior experience with rudimentary case assessment by tutor/lecturer in the form of Q&As (Summative Assessment)	No. of students = 39 (54%)
Student prior experiences with formal case challenge by peers based on pre-assigned criteria	No. of students = 0

**TABLE 3: STEPS ADOPTED TO PREPARE STUDENTS FOR SHARED UNDERSTANDING OF ASSESSMENT CRITERIA**

1. Case analyses guidelines were posted in the subject folder which all students had access to throughout the 13-week semester
2. Case analyses requirements and corresponding marking template were clearly specified in the subject outline
3. Marking criteria highlighting expectations from presenting team, challenging team were clearly explained during lecture sessions and tutorial sessions
4. A simulation exercise conducted in tutorial as practice using a test case prior to actual presentation and challenge
5. On-going clarification and feedback provided to assist students further with understanding of case analyses and challenge component
6. Case material and required readings related to case provided at least 2 weeks in advance of each case presentation and case challenge



**FIGURE 1: PRE-ASSESSMENT STAGE: STUDENTS’ PRIOR EXPERIENCE WITH CASE ANALYSIS, CASE PRESENTATION AND CASE CHALLENGE**



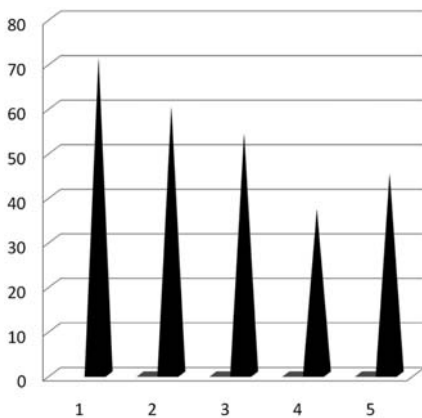
**FIGURE 2: PRE-ASSESSMENT STAGE: STUDENTS’ PRIOR EXPERIENCES WITH CASE ANALYSES AND PRESENTATION IN GROUPS**

confirmed by all participants during structured interviews.

As stated in Table 3, students were adequately prepared through various measures to facilitate shared understanding of assessment criteria. Subsequently structured interviews were conducted with students through three stages of case presentation, defense and challenge. Drawing from Mauffette-Leenders et al. (2007) to identify the quality and depth of individual preparation (Stage 1, individual preparation; Stage 2, small-group discussion; Stage 3, large-group discussion), the following results have been obtained as reported in Figures 3 and 4.

### 1. Stage 1a and Stage 2a – Impact of presence of peer/case challenge component on individual and group preparation by presenting team (Figure 3)

As indicated in Figure 3, out of a sample size of 71, 60 students (almost 84%) reported spending 4–13 hours to prepare for the case presentation (SD = 2.341, Mean = 9.48,  $N = 71$ ) in anticipation of case challenge by peers. Out of 71 students, 54 students (76.05%) reported having engaged in



**FIGURE 3: STAGE 1A AND STAGE 2A – IMPACT OF PRESENCE OF PEER/CASE CHALLENGE COMPONENT ON INDIVIDUAL AND GROUP PREPARATION BY PRESENTING TEAM.** Variables on the x-axis for Figure 3 are as listed below: 1 – sample size ( $N = 71$ ); 2 – longer preparation time ( $N = 60/71$ , 84%); 3 – more in-depth preparation and analyses ( $N = 54/71$ , 76.05%); 4 – extra research from variety of sources ( $N = 37/71$ , 52.11%); 5 – requirement to submit executive summary to tutor and challenge group helped to a great extent ( $N = 45/71$ , 63.38%)

more in-depth preparation and analyses in anticipation of the challenge component. The presenting groups also reported that they considered it important to find all the potential issues and problems in the case, in addition to all possible solutions, in order to reduce the scope of challenge by the peer group. Of these respondents, 52.1% ( $N = 37/71$ ) said that they did extra research to find all potential issues and problems in the case and their solutions. The various sources included review of scholarly literature, prescribed readings and textbook material. Students also reported having engaged in group discussions and discussions with tutor prior to presentation to assist with their analyses. As reported by one student: ‘*Since everyone did more research for understanding the concepts, it did enhance the individual and group accountability*’. Furthermore, 63.38% ( $N = 45/71$ ) of the respondents reported that the requirement to write the executive summary to be submitted to the tutor and challenging group 48 hours prior to the presentation, enabled all group members of the presenting team to arrive at a shared understanding of case problems and solutions. As reported by a presenting group member: ‘*It made us agree on the points and discuss the same so we were sure what to say during the challenge*’.

### Experience of peer/case challenge component on individual and small-group preparation for presentation of case analysis

This section discusses findings as captured in Figure 3 before as also experience narrated by individuals and group members of the presenting group. As indicated in the previous section, although a large majority of students reported that they had experienced case analysis and presentation in earlier semesters, fewer had opportunity of group preparation and presentation and fewer still of question and answer sessions with peers or lecturer/tutor. There was no specific peer group pre-assigned to challenge and question the presenting group on their case in similar contexts in the past thus making this an innovative case assessment. On account of having the new challenge component:

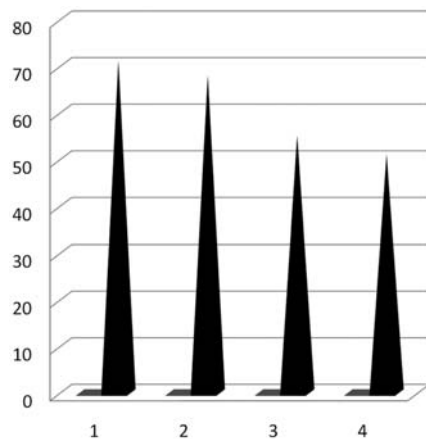
- Presenting group students reported more intense and in-depth preparation involving detailed research on the case situation was required.

- Case preparation required deeper level of analyses as the presenting group needed to pre-empt all possible questions and hence lines of argument and interpretation of case facts by the challenging team in order to have a counterargument ready. This required the group to be familiar with a wider range of concepts/models applicable to the case as compared to when this case challenge by peer groups was not present.
- The inclusion of case challenge made the assessment more complex. The resulting increase in difficulty level required process learning of linking case facts to theory for the specific purpose of addressing the burning problem highlighted in the case. Furthermore, case assessment was now to be conducted in an integrated manner as opposed to a compartmentalized manner, to avoid gaps in argument for challenging peers to exploit. This required thorough preparation and understanding of the case at individual and group level.

Specifically, each member of the presenting group was required to have familiarity with the entire case combined with analyses as any group member could be asked a question or be needed to step in to defend another group member taking on the challenge group argument. This contributed to greater collaboration among and enhanced content-based contributions among group members. For example, as reported by one group member: *'Each member was fully aware of their parts and therefore was able to answer questions made to them. Also other members were able to provide more information while answering questions. ... Since everyone did more research for understanding the concepts, it did enhance the individual and group accountability'*. Most students rated the experience as 'facilitative' for deeper learning with students taking an active role in their own learning. As remarked by a presenting group *'It (challenge by peers) requires the presenters to clearly understand the case and be prepared to clarify and state the facts against the challenge. ... It (requirement to submit an Executive Summary) made us agree on the points and discuss the same so we were sure what to say during the challenge'*.

## 2. Stage 1b and Stage 2b – Impact of presence of peer/case challenge component on individual and group preparation by challenging team (Figure 4)

With regard to the impact of the challenge component on challenging group's approach to learning, results reveal that as many as 68 out of 71 (95.77%) respondents have reported using the guidelines provided by the tutor at the beginning (Table 3) to prepare for case challenge. Seventy-seven percent of students responded that the 'challenge component' of assessment had a positive impact on their learning from the course as it stimulated thinking, leading to deep learning as evidenced by their enhanced understanding of concepts and how to apply them in the context of the case. Most challenging groups reported that they were required to have better, detailed and deeper understanding of the case in order to be able to formally challenge the presenting teams. Fifty-one out of 71 respondents agreed that the challenge component improved the quality of



**FIGURE 4: STAGE 1B AND STAGE 2B – IMPACT OF PRESENCE OF PEER/CASE CHALLENGE COMPONENT ON INDIVIDUAL AND GROUP PREPARATION BY CHALLENGING TEAM.** Variables on the x-axis for Figure 4 are as listed below: 1 – sample size (N = 71); 2 – individual preparation using guidelines (N = 68/71, 95.77%); 3 – challenge component of assessment stimulated thinking (N = 55/71, 77%); 4 – improved quality of small-group discussion (N = 51/71, 71%)

small-group discussion as evidenced by the level of preparedness and the quality of contributions.

### **Experience of case challenge component on individual and small-group preparation for challenge of case analysis**

This section discusses results as captured in Figure 4. The experience of individual and group members of the challenge group in response to the case presentation was documented. It may be highlighted here that the assessment design required the presenting group to submit an executive summary of case analyses to the challenge group members 48 hours before the actual presentation in class. The challenging group in turn was required to provide a set of questions to the tutor (that would be used to challenge the presenting team) combined with academic rationale for them, prior to the presentation.

As a result of the challenge component, the challenging teams reported the following:

- Deeper level of preparation: Most challenging groups reported spending extra time to read the case individually, to do research and then discuss the case in a group. This finding is succinctly captured in one group's remark *'We had to research and analyze hard to find some facts that the presenting team might not consider. Therefore we had to look at scenarios and case problems from multidimensional aspects'*.
- The executive summary provided by the presenting team helped in identifying what the presenting team's main areas of focus was, such that the challenging team could prepare themselves to challenge accordingly. As reported by one of the challenging groups *'First we went through the case and tried to identify the key themes and the key issues in the case independently and then compared our analyses with the executive summary submitted by the presenting team to identify gaps'*. This helped deepen learning by bringing in new and different viewpoints, arguments and interpretation using the same data but different perspectives and frameworks.
- The requirement for submitting the challenging questions along with rationale and possible answers to the tutor prior to the actual

challenge in class was acknowledged by challenge groups as a very useful technique since it *'gives a specific direction to think about the case by narrowing down the focus of the challenge to the most important issues in the case'*.

- The formal requirement to prepare for a case challenge reportedly increased individual preparation and improved quality of small-group discussion through enhanced individual accountability. This in turn led to increased synergy, helping develop skills to challenge the arguments presented and countering them with case facts and their alternative interpretation in line with theory. This was useful training for managerial success. As remarked by a challenge group *'Individual and group accountability increased because preparing the challenge component requires more brainstorming and helped in achieving synergy'*.
- Process related success of the peer group challenge mechanism was instrumental in immediate formative feedback to the presenting group on their analysis of the case. It also allowed the tutor to make a summative assessment of the case presentation and challenge group performance, based on quality of arguments in case defence and challenge together with the learning and engagement of the wider audience comprising other students in class.

### **3. Stage 3: Impact of case presentation, defence and challenge on large-group discussion**

With regard to the impact of the case presentation, challenge and defence components of assessment on the quality of large-group discussion in class, the following findings were reported by students:

- **For the larger class participants, the case presentation and challenge by their peers enhanced student preparation and understanding through self-reflection.**

The case challenge components reportedly had a strong impact on student understanding of the case and its related issues. While making no significant difference to class participation (in comparison with frequency and intensity of class participation in case presentations where no case challenge component was present), most students

reported that the challenging team's arguments and questions helped them think about concepts and points of view that they might not have thought about otherwise. This in turn enhanced their understanding and thereby helping them in their own preparation of cases. As remarked by one student: *'It (case presentation, challenge and defence) helps in the sense that one would know how to prepare, present, challenge, and to avoid mistakes and pitfalls another group has made'*

- **Enhanced clarity in concepts**

The challenge component also helped to clarify issues not completely discussed and hence not understood during the presentation. As remarked by a student: *'I couldn't understand some part of the presentation and when challenging group asked questions, it really helped to clarify issues that had not been completely discussed in the presentation'*.

- **Enhanced problem-solving and decision-making skills**

The case challenge and quality of defence, helped students learn and develop skills relevant for lifetime learning. As remarked by students: *'The case presentation and challenge scenario are like live forums to learn and discuss industry situation. ... It was like when I have this problem in my company in the future, how will I go through it and try to handle the problem. It was a good practice for a real life case'*.

Another important aspect of life-long learning demonstrated by case presentation and challenge is the art of arguing, counter-arguing and defending logically a point of argument using case facts within a peer group with the aim to create buy into an idea. As a deep, reflective self-learning process, the innovative design of case presentation and challenge may be credited for this. An appropriately designed case presentation and challenge task thus helped peer level deep learning through the ability to acquire and apply declarative, procedural and strategic knowledge-concepts closely related to case learning as discussed in the previous sections.

In conclusion, the results provide evidence of deep learning from an innovative case assessment technique comprising case presentation, defence and challenge. Interview data indicate enhanced length and breadth of preparation

and contribution by individuals as evidenced by substantially more time spent by students in case preparation through additional research leading to enhanced small-group discussions of greater depth. The requirement to submit an executive summary 48 hours prior to class (by the presenting group) and challenge questions with rationale (by the challenging group) further resulted in more advanced preparations outside class reflective of rigorous self-driven initiatives of students (active learning ) as opposed to passive learning (as usually observed in conventional assessment approaches). Results also provide evidence for self-learning through reflection and clarification of concepts. Specifically, the opportunity to apply assessment criteria in the context of a peer group encouraged self-learning and increased capability to evaluate others' work reflective of higher cognitive processes (Boud, 2000; Sivan, 2000; Cheng & Warren, 2000; Liu & Carless, 2006).

## DISCUSSION

The present study examines the impact of including a case challenge by a peer group on deep versus surface approach to learning among a large cohort of advanced management students at the undergraduate level of a higher education institution. Results provide evidence that inclusion of peer assessment component encouraged students to take ownership for their own learning besides adding value to group interaction thus ensuring deeper levels of learning. The assessment design focussed on holistic learning with cases, as evidenced by the three stages of *individual preparation* (Stage 1) which in turn impacted the quality of *small-group-discussion* (Stage 2) leading to enhanced *large-group-discussion* as predicted by Mauffette-Leenders et al. (2007). All of these stages together aided self-reflection among the students – the highest level of learning. The creative peer evaluation and questioning process influenced three main stakeholders including the presenting group, the challenging group and the rest of tutorial group who witnessed and participated in case presentation, challenge and defence each week.

The structured component of case challenge based on pre-determined criteria was effective in

stimulating deep learning usually not attained by non-participatory evaluation of peer performance using a limitedly understood grading scale by the audience of a case presentation without a challenge component. As members of the same tutorial, all students were well aware about the marking criteria and standards of evaluation prior to their case presentation and challenge. As is evident from the results, over the course of the 13 weeks, students got an opportunity to assess one's own work and the quality and contribution of other groups' case analysis. This in turn contributed to deeper learning by helping them to adopt and hone techniques of presentation and challenge, a skill relevant for real-life. Specifically, the presenting group not only had to understand the case, the problem and possible solutions in detail but also minimise the possibility of counterargument by the challenge group particularly given that an executive summary of their case analysis was available to the challenge group, as a basis of their challenge, 48 hours before presentation. This process was extra critical for the presenting group as the challenging group was a peer group and the remaining students attending the presentation and challenge was a kind of jury in witness. The challenging group and their arguments too came under similar scrutiny and peer pressure. This innovative evaluation pattern necessarily encouraged deep learning, being an improvement over traditional presentations where no peer group challenged the presentation and only a tutor evaluated the presentation. This is evident from the results of the study, which indicated that students spent substantially more time in case preparation through additional research contributing to deeper levels of small-group discussion. The creative assessment technique presented in this paper thus addresses the criticisms aimed at traditional oral presentations in tutorials, which are often of poor quality, reflective of little or no preparation, free riding in presentation teams, thus failing to engage students or to achieve learning outcomes for the course (Harman, 2010).

Since the presenting group and the challenging group used facts from the same case and concepts from the same lectures to build and defend

their arguments, group members as well as others in the tutorial remained unbiased in judging the merits of a superior argument. The introduction of case challenge also led to higher cognitive processes involving application of case concepts to live scenarios by both presenting group and challenge group creating a more intense and participatory learning environment where process related skills such as presentation, defence, challenge, group work and outside classroom work are acquired besides conceptual skills. Thus, the introduction of an evaluated case challenge component enhanced student accountability for their learning both individually and in groups.

In the absence of a case challenge component, in-group and out-group biases are likely to exist when uninformed peers sitting in an audience grade a presentation using poorly designed and poorly understood assessment criteria. For example, it has been reported in literature that uninformed peers who do not have any understanding of assessment criteria or how to apply them may limit the reliability of such assessments besides leading to perceptions of inequity. (Mauffette-Leenders et al., 2007; MacAlpine, 1999; Sivan, 2000) Further, the traditional use of peers as grader attracts criticism in literature (Mauffette-Leenders et al., 2007; Liu & Carless, 2006) for bringing in an element of rivalry and in some cases elements of error especially if peers are ill informed about assessment criteria. In this study, while peers are brought in to challenge the presenting team, thus enriching the *process* of interaction, the *product* or *summative assessment* was done by the tutor based on arguments presented by both the presenting and challenging sides. The information on grading criteria and perspectives of a challenge group in the innovative evaluation gave the tutor an unbiased picture of class understanding of the case and its problems. This resulted in fairer and more equitable marking in a process triggered by the innovative case challenge, besides further provoking students to take deeper approaches to learning.

Results reveal that both the requirement to submit an executive summary (by presenting team) and questions with rationale (by challenging team) as discussed in the previous section

required the presenting and challenging groups to work extra hard on the case, its problems and solutions using theory to support their arguments, further stimulating a deeper rather than surface approach to learning. Since much of the benefit in case analyses arise from advanced preparations outside class, they are likely to be rigorous self-driven initiatives of students themselves and not received learning in classroom as achieved by conventional approaches. Mauffette-Leenders et al., (2007) have also acknowledged that the first stage of individual preparation of the case outside of class is the foundation on which all the other stages such as small and large-group discussion rests and therefore is fundamental to any learning using the case method. It is clear from our study that the assessment design and particularly the case challenge component has successfully led to achievement of this objective. As each member of group needs to be thorough with complete case facts, arguments and analysis, problems associated with lack of individual accountability and free riding are overcome using the innovative case challenge component of evaluation.

Though limited in its impact on the general class outside the presenting and challenging groups, the innovative case assessment gave a wider, often counterintuitive analysis of a case, particularly from the challenge group. In addition as a formative, detailed and timely feedback on a subject fresh in the mind of the class, case challenge fosters intrinsic motivation to prepare for the case class as highlighted by Gibbs and Simpson (2004–2005), Sadler (1998). Overall the results provide evidence that each student had an enhanced, holistic and life-long learning experience by being member of presenting group, challenging group and general class in the duration of the course leading to both participatory and non-participatory learning opportunity through the unique learning design adopted. The findings of the study support observations that assessment design requires students to spend adequate time in productive learning activity as argued by Gibbs and Simpson (2004–2005).

## CONCLUSION

The results of this study provide further validation for the constructivist paradigm and confirm

that it is the design of assessments and perceptions of the learning environment that determine whether students take a deep or surface-level approach to learning (Entwistle, 1991; Liu et al., 2011; Shepard, 2000; Ramsden, 1992/2003, 1997). From the findings of the research and ensuing discussions, it is evident that introduction of an innovative case challenge component stimulates deep learning (Biggs & Tang, 2009) by involving peers in a case based evaluation process. Peer assessment when introduced as a formative feedback process with tutors responsible for summative grading enhances a learning environment conducive to sharing and learning from each other as opposed to *peers as graders*. The positive impact of formative assessment feedback on deep learning finds mention in literature (Higgins et al., 2002; Hyland, 2000; Black & William, 1998a, 1998b; Biggs, 1999). This learning encourages a collaborative and participative process among students in a tutorial using the case presentation and challenge format as different from simply a passive knowledge acquisition process. Familiarity with the evaluation criteria as provided through initial preparation by the tutor facilitates the process. Furthermore, the opportunity to apply assessment criteria in the context of a peer group encouraged self-learning and increased capability to evaluate others' work, reflective of higher cognitive processes (Boud, 2000; Sivan, 2000; Cheng & Warren, 2000; Liu & Carless, 2006). Results also indicate that a further merit of this creative case assessment approach is that peer challenge incorporated as a *process measure* stimulates discussion around the case, with the summative (product) assessment being done by the tutor. This result is in alignment with earlier findings that such a process dimension of assessment contributed to collaborative learning, while ensuring perceptions of equity and objectivity thus achieving the positive outcomes associated with group assessments (Burdett & Hastie, 2009; Mauffette-Leenders et al., 2007). Such a creative case assessment technique also strengthened communication skills and capability to work in teams among students besides fostering leadership through increased accountability, all of which has been

noted by scholars as necessary skills to be taught through management education (Hunter et al., 2010; O'Shannassy, Kemp, & Booth, 2010). In the case presentation and challenge process, peer feedback was further embedded as a natural process of learning aiding self-reflection and not a mere classification using undefined scales as in peer evaluation in the absence of a case challenge component (Boud, 2000; Sadler, 1998). In line with Gibbs and Simpson (2004–2005) the assessment task does capture sufficient time and effort as also clear and high expectation from students. The assessment design and subsequent data collection in this research (through stages 1 to 3) suitably incorporates Mauffette-Leenders et al. (2007), stages in case analysis, leading not only to higher levels of learning, but also ensuring that the students developed important life skills such as problem-solving and capability to critique others' work. Consequently, this developed among students the capability to reflect on and analyze one's own work. As noted by Boud and Falchikov (2006): 'Preparing students for life-long learning necessarily involves preparing them for the tasks of making complex judgments about their own work and that of others and for making decisions in the uncertain and unpredictable circumstances in which they will find themselves in the future' (p. 402). The significance of designing assessments in business curriculum that leads to sustainable learning has also been noted by recent scholarly research (von der Heide & Lambertson, 2011; Benn & Rusinko, 2011) thus further strengthening the merit of case assessment approach as described in this paper.

This study's limitation remains in its first attempt to introduce such an innovative assessment task and capture its impact on aspects of deep versus surface learning. More information needs to be collected on the impact of repeated exposure of the same cohort of undergraduate students in future courses and semesters to identify the long-term benefits of this assessment tool. With variation in class composition in terms of gender, age, educational background and experience, similar assessment exercises conducted with a different cohort of students in the same subject/course or different subject/course can assess for deviations in learning. Some evidence

for the significance of culture and differing learning styles on assessment preferences have also been noted by theorists (Akella, 2010; Selvarajah, Chelliah, Meyer, Pio, & Anurith, 2010; Dunwoodie & Ainsworth, 1999) and the need to redesign business courses and programs accordingly. Thus, there may be some merit in replicating the case assessment approach in different geographic regions as this may help understand the effect of culture and different learning styles on the responses to the innovative peer assessment tool as described in this paper.

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