1-1-2012

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Marketing educators are often faced with poor preclass preparation by students, declining student interest in attending classes as the semester progresses, and student complaints regarding previous bad experiences with team assessment activities. Teambased learning (TBL) is an innovative teaching strategy using semiformalized guidelines aimed to enhance student engagement and improve teamwork and, hence, overcome the typical problems faced by educators. This case study examines the firsttime use of TBL in a postgraduate marketing subject at an Australian university. The results indicate that the TBL innovation has a positive influence on student engagement and offers opportunities to assist learning. The study concludes that TBL is an effective teaching process enabling educators to offer students enhanced and stimulating learning experiences. The case study contributes to the marketing education literature by assessing the first-time TBL experience of students and educator. Key issues addressed are student engagement, opportunities for learning, and the benefits of teamwork in preparing students for the workforce. Significantly, the research also offers practical advice for marketing educators desirous of developing and implementing effective and engaging pedagogy via TBL.

Keywords

approach, learning, team, engagement, marketing, increased, students, case, study

Disciplines

Business | Social and Behavioral Sciences

Publication Details

Chad, P. (2012). The use of team-based learning as an approach to increased engagement and learning for marketing students: a case study. Journal of Marketing Education, 34 (2), 128-139.

The Use of Team-Based Learning as an Approach to Increased Engagement & Learning for Marketing Students : A Case Study

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KEYWORDS: group, marketing education, student engagement, team based learning, TBL

Abstract

Marketing educators are often faced with poor pre-class preparation by students, declining student interest in attending classes as the semester progresses and student complaints regarding previous bad experiences with team assessment activities. Team-Based-Learning (TBL) is an innovative teaching strategy utilising semi-formalised guidelines aimed to enhance student engagement and improve teamwork and hence overcome the typical problems faced by educators. This case study examines the first-time use of TBL in a postgraduate marketing subject at an Australian University. The results indicate the TBL innovation has a positive influence on student engagement and offers opportunities to assist learning. The study concludes that TBL is an effective teaching process enabling educators to offer students enhanced and stimulating learning experiences. The case study contributes to the marketing education literature by assessing the first-time TBL experience of students and educator. Key issues addressed are student engagement, opportunities for learning and the benefits of teamwork in preparing students for the workforce. Significantly, the research also offers practical advice for marketing educators desirous of developing and implementing effective and engaging pedagogy via TBL.

Student engagement and development of student skills that are valued by the workplace are key issues that marketing educators need to consider. There is an ongoing search within higher education for methods to assist and improve student learning (Bobbitt, Inks, Kemp, & Mayo, 2000) and overcome students' disinterest in some traditional teaching and learning delivery processes. Within the global higher education sector, some issues and responses are country specific (Rundle-Thiele & Polonsky, 2009). Developed in the United States of America by Professor Larry Michaelsen, team-based-learning (TBL) is a teaching strategy that aims to promote genuine student collaboration. TBL is characterised by permanent student work groups throughout the semester, each unit of instruction commencing with a multiple choice test which students firstly complete individually, then in teams, with provision of immediate results during the team testing. Small 'application exercises' completed in teams are also utilised throughout the semester (Michaelsen & Sweet, 2008). The advantages of TBL are claimed to include 'improved attendance, increased pre-class preparation, better academic performance, and development of interpersonal and team skills' (Michaelsen & Sweet, 2008, p. 5).

To date, use of TBL in various countries including Australia is relatively sparse, with very few marketing educators currently having first-hand experience in delivering subjects via TBL. This case study expands the marketing education literature regarding TBL by reporting the experiences of both students and educator when introducing TBL into a postgraduate final year capstone marketing subject within an Australian university. The paper is unique in that it not only reports the impact and outcomes of TBL upon students, but, it specifically describes the learnings gained by the educator and thus offers various tips and guidelines for other educators considering using TBL in their classes.

Following justification of using TBL as a teaching process, the paper specifically describes the TBL process used within the marketing subject, describes the impact and outcomes of TBL on students, discusses the experience from the educator's perspective and subsequently offers recommendations regarding the practical issues that need to be considered by educators and support staff when preparing to deliver marketing subjects via the TBL process.

Influence on Enhancement of Student Engagement

A significant issue for higher education is the development of employable students (Treleaven & Voola, 2008). Discipline specific knowledge is not sufficient (Hager, Holland, & Beckett, 2002) and educators need to ensure appropriate graduate attributes are developed to enhance student employability (Hoban et al., 2004). The 'ability to work with a group' is a valued attribute when employers hire business school graduates (Chapman, Meuter, Toy, & Wright, 2010, p. 39) and universities are vital in preparing students to be willing and able to work effectively with others and appreciate the benefits of working in teams (Pfaff & Huddlestone, 2003). Effective teamwork requires knowledge, skills and abilities (KSAs) which cover five key areas, namely conflict resolution, collaboration, communication, goal setting as well as planning and coordination (Stevens & Campion, 1994). Similarly, Katzenbach (1997) regards communication, cooperation, collaboration and compromise as requisite skills for effective team operation. Communication is identified as a key required graduate capability and is often taught in specific learning employment aptitude programs (LEAP) (eGrad School, 2011). It is considered that students learn more through teamwork as they teach each other and become active rather than passive learners (Williams, Beard, & Rymer, 1991). Key benefits that

students gain from having experience working in teams thus include learning to work with others (Williams et al., 1991) and exposure to new perspectives (Amato & Amato, 2005).

However, while there is numerous research highlighting the importance of developing students' skills to work in a team, there are issues regarding students' attitudes and willingness to work in teams, and there is growing evidence that some students find working in teams difficult, somewhat frustrating, time-consuming and ineffective for their learning (Lancellotti & Boyd, 2008). Of particular concern to these students is the issue of shared workload and responsibility. Educators need to be aware that students should be learning within their team, pulling their weight and be deserving of the grade given to the overall team (Lejk & Wyvill, 2001; Melles, 2004). Team members who do not pull their weight are referred to as 'social loafers or free riders' (Dommeyer, 2007, p. 175) and such members are the primary reason given by some students for not liking teamwork (Williams et al., 1991). Similarly, Felps, Mitchell and Byington (2006) refer to students exhibiting difficult behaviour within teams as 'bad apples' with such behaviour falling into three categories – withholding effort, possessing a negative mood or attitude, or violating interpersonal norms. Students are more likely to have positive attitudes towards group work if methods to evaluate individual performance (e.g. peer evaluations) are included (Chapman & van Auken, 2001; Williams et al., 1991) as they are a 'key to promoting individual accountability' (Hernandez, 2002, p. 79) within a team. Some students, due to their individualistic personality, simply dislike working in teams (Wagner, 1995) with 'lone wolves' preferring to work alone due to a dislike of the ideas of other people, a dislike of group process and often seeing others as inferior (Barr, Dixon, & Gassenheimer, 2005).

TBL is claimed to be an effective method to assist development of appropriate team skills, engage students for the benefit of all team members, and to also overcome any previous student issues with team activities, and enable students to learn effective team skills. TBL requires students to prepare for, and attend classes regularly throughout semester and is thus a mechanism to motivate students to stay up to date with their readings. The benefits of working together include development of teamwork skills, enhanced interest and motivation, potential to learn from each other, multicultural experiences (Williams et al., 1991) and critical thinking (Pascarella & Terenzini, 2005). Via effective team processes, interactions and discussions, critical thinking is stimulated amongst the students which assists students to progress through the stages of learning, from knowledge and comprehension, to application, analysis, synthesis, and evaluation (Roy & Macchiette, 2005). In individual activities, 'learning is equated with recall or memorization' (Hernandez, 2002, p. 74) and represents the lowest level of learning outcomes (Bloom, Ehgelhart, Furst, Hill & Krathwohl, 1956). Team learning offers multiple sources of knowledge and team interactions assist higher-order learning and reflection as well as introduce individual students to (new) modes of thinking used by fellow students (Peltier, Hay, & Drago, 2005). Oral communication skills are also likely to be improved via collaboration with fellow students during the team activities that may involve discussion of divergent views and subsequent negotiations (Crosling & Ward, 2000).

TBL is claimed to offer a framework through which the benefits of teamwork can be successfully introduced to students (Michaelsen & Sweet, 2008). There are four key guidelines for TBL (Michaelsen, Knight, & Fink, 2004); first, team formation (equal distribution of ability across teams); second, student accountability (preparation prior to class, and appropriate input during team exercises within class); third, team activity; and fourth,

feedback (for learning and team development). The characteristics of TBL include utilisation of permanent student work groups throughout the semester, commencement of each unit of instruction with a readiness assurance process and a majority of class time utilised for small team activities including application exercises (Michaelsen & Sweet, 2008). Thus, at the commencement of each instructional unit, students individually undertake a 'Readiness Assurance Test' (known as an 'iRAT'). This test consists of a multiple-choice test based on prior allocated readings. Immediately after submitting their individual answers to the test (and prior to receiving their results), students undertake the same test again (known as a 'tRAT'), this time in their pre-determined student team. The tRAT is conducted utilising an 'instant lottery' style answer sheet, whereby the team scratch off the silver coating over the letter corresponding to the answer they consider is correct. An asterisk underneath the silver coating indicates a correct answer. If students have chosen an incorrect answer, they continue answering the tRAT question until they discover the correct answer. The benefit of this test is the immediate feedback regarding the accuracy of the students' team answer. Feedback should be timely and usable (Michaelsen & Schultheiss, 1988) and the tRATs provide this type of feedback. Not only is the feedback timely (instantaneous), but also usable to assist learning, as students know exactly which questions they answered correctly, and which they answered incorrectly (leading to subsequent discovery of the correct answer).

While the tRAT is being completed by student teams, the educator is able to observe the student activity and listen-in on the team discussions to gain an understanding of the thought processes and team dynamics being utilised by students towards determining the answers to the questions. Application exercises are another characteristic of TBL and are utilised later within each instructional unit.

While the nature of educator-student interactions are a key factor in active learning (Lilly & Tippins, 2002; Peterson, 2001), marketing students prefer the opportunity for both student-student interactions as well as educator-student interactions (Matulich, Papp, & Haytko, 2008; Paladino, 2008). These collaborative interactions not only increase a student's motivation to learn (Denton, 1994; Wee, Alexandria, Kek, & Kelley, 2003) but are indeed regarded as necessary to enable reflection and learning (Faranda & Clark, 2004; Young, 2005). Likewise, an active learning environment combining academic and social activities offers students the best opportunity to learn (Drea, Tripp, & Stuenkel, 2005). The tRATs assist students to develop communication (Meyer, 1994) and co-operation skills (Kunz, 1994). TBL affords educators the opportunity to provide a face-to-face learning environment combining both the opportunity for students to interact with fellow students (during the tRATs) as well as the traditional educator-student interactions.

Student Engagement

Based upon a review of numerous definitions of student engagement, Taylor, Hunter, Melton and Goodwin (2011) regard the perspective of Kinzie and Gonyea (2009) as the most appropriate, namely, student engagement is regarded as the amount of effort (time and energy) students devote to educationally purposeful activity. Similarly, student engagement can be regarded as 'the active involvement, commitment and sense of belonging that dictates the time and effort students devote to educationally purposeful activities' (Cleary & Skaines, 2005, p. 1).

What are the specific aspects of TBL claimed to increase student engagement? The format of lectures is a key factor in a student's enthusiasm regarding attending classes and becoming involved in a subject (Dolnicar, Kaiser, Matus, & Vialle, 2009). Although listening to lectures should stimulate knowledge capture and comprehension, there is not a progression to learning until students apply this knowledge (Paladino, 2008). TBL claims to address these issues. The nature of TBL, requiring students to sit ongoing RATs throughout the semester in itself is a motivator to attend lectures. This also motivates students to prepare for lectures throughout the semester, rather than simply cramming for a final exam. Various strategies to increase student engagement in marketing courses have been reported in the literature (Taylor et al., 2011). These include: link activities to intellectual growth (e.g. Desautel, 2009), increase use of active learning (e.g. Chi, 2009), increase interactivity in learning (e.g. Chi, 2009) and increase use of personalisation (e.g. Lucas, 2010). It is regarded that TBL utilises these strategies. The nature of the RATs in TBL offers opportunity for intellectual growth and interactivity with other students in a specific learning activity, and a mix of individual then team activities enables personalisation of input.

Representing a significant and innovative shift from traditional teaching and learning strategies previously utilised within the Faculty of Commerce at a mid-sized Australian university, TBL was introduced within the School of Marketing for the first time during 2009 in the final year capstone postgraduate 'Marketing Strategy' subject for a postgraduate Masters level course. Given the beneficial claims regarding TBL (Michaelsen & Sweet, 2008), the key reason for deciding to introduce TBL was due to students' reducing interest in attending classes, students' less than optimum pre-class reading and preparation, as well as complaints from some students regarding previous bad experiences with out-of-class team

activities in which some team members provided little input. TBL was seen as a possible method to address these existing student issues.

Thus, the overall aims of this case study were to – explore the usefulness of TBL as a teaching approach for improving student engagement and learning; and assess the experiences of the educator delivering the subject. The key objectives were to explore the impact of TBL on -

1. the performance of individual students compared with their teams
2. enhancement of student engagement
3. the educator's learnings from the experience.

The paper thus provides a case study in an Australian postgraduate capstone marketing subject context of the results when introducing TBL for the first time. Significantly, the paper also documents practical implementation aspects relating to delivery of TBL based on the experience of the educator, which is a key aspect lacking in previous papers regarding TBL. These practical implementation aspects are of particular benefit for any educator considering using TBL or other variants of team learning.

Research Approach

In this research, a single case study was examined. A case study can be defined as 'a research strategy which focuses on understanding the dynamics present within single settings' (Eisenhardt, 1989, p. 534). For a specific amount of resources available, single case studies

provide more in-depth analysis than multiple case studies (Dyer & Wilkins, 1991; Gummesson, 2007). As indicated by Blaxter, Hughes and Tight (2003, p. 73), data from case studies is 'drawn from people's experience and practices and so are seen to be strong in reality'. This research case studied the first-time introduction of TBL within a final year, postgraduate marketing subject and focussed on the individual (iRAT) and team (tRAT) multiple choice readiness assurance tests rather than application exercises that are the other component of TBL (and are the subject of planned future research). As this was a final year subject; students were already familiar from previous semesters with the typical non-TBL delivery format within the University. These previous experiences with the non-TBL delivery format enabled students to compare their experiences with their new TBL delivery experience.

Utilising 'responsive evaluation', progressive informal and formal evaluation of the merit and worth of use of TBL RATs was conducted throughout delivery of the subject. Grounded 'in a social constructionist perspective to knowledge' (Abma, 2005, p. 392), responsive evaluation was first proposed by Stake (1975) and developed in the field of education (Guba & Lincoln, 1989; Stake, 1975) partly as an alternative to possible shortcomings of over-reliance on experimental methods (Abma, 2005) and is recommended when evaluating particular programs (Stake, 1976). The responsive evaluation approach utilises mixed methods (Stake & Abma, 2005) and the 'information may be quantitative or qualitative' (Guba & Lincoln, 1989, p. 42). Denzin (1978) contends that validation strategies via use of mixed-methods triangulation cancels out any inherent bias in a particular data source. Similarly, Bacon (2011) suggests that assessment of team testing is best done via a combination of both direct measures (e.g. tests) as well as indirect measures (e.g. student surveys). Lincoln and Guba (1980) consider evaluation of the value of a program is based on two aspects – merit and

worth. Merit is regarded as context free, whereas worth ‘can only be determined in relation to an actual context’ (Lincoln & Guba, 1980, p. 61). Assessment of programs using responsive evaluation is thus based on evaluating the merit and worth of the program upon participants.

Participants

In the class of fifty students, thirteen teams were formed (eleven teams of four students and two teams of three students) at the commencement of the semester. The fifty students comprised twenty-nine female and twenty-one male students. The teams remained the same for the duration of the semester. The size (hence number) of groups was determined by the educator and all teams had a mix of genders. Team size and gender diversity have little effect on team performance (Bacon, Stewart, & Stewart-Belle, 1998). Formation and resultant composition of each team was based on self-selection at the students’ discretion, with no ‘forcing’ of students into particular teams by the educator. Self-selected groups were used as they have the potential to ‘add more value to students’ experiences of group work’ (Chapman, Meuter, Toy, & Wright, 2006, p. 568). The subject was taught by one educator who designed and implemented all course material.

Class Procedure

The class procedure is reported in detail to assist educators who may be interested in implementing TBL in the future. iRATs and tRATs were conducted at the commencement of eight classes during the thirteen week semester. The length of the tests was ten multiple-choice questions per test. Each multiple-choice question had four answer options. Unlike traditional multiple-choice tests where students simply select one answer, in the iRATs within

the TBL process, for a specific question, students are allocated four ‘points’ and can allocate all four points to a specific answer if they are very sure of the correct answer. However, if the student cannot decide between the possible answers, the student has the option to allocate the four points as they see fit across one, two, three or all four possible answers. For example, if the student was totally uncertain of the correct answer, they could allocate one point to each of the four possible answers and be guaranteed of gaining at least one point out of four for the specific question. Thus, with four points allocated for each of the ten questions in the multiple-choice iRAT, students’ results were marked out of a maximum mark of forty. Following completion and submission of iRAT answer sheets (with students also retaining a copy of their answers), students formed into their respective teams to complete the tRAT. Unlike the iRAT where individuals are offered four points per question, in the tRAT, students are only offered one point per question. No specific time limits were imposed on students to complete the iRATs and tRATs. This was partly due to the diverse range of students (with differing levels of English language comprehension), and, in the tRAT phase, the desire by the educator to allow team development to occur. Educators need to ensure the provision of a comfortable setting for students to enable a safe environment to engage in debate (Peltier, Hay, & Drago, 2005) thus the students should not feel overly pressured by time constraints. However, for lesson planning and scheduling reasons, the educator does need to ensure the RATs are completed within a reasonable time period.

Each iRAT was worth 3.5% and each tRAT was worth 1.5% of a students’ overall grade for the subject. Thus, each combined iRAT and tRAT was worth 5%. A student’s best six out of eight combined iRAT plus tRAT scores were utilised with the total weighting of RATs for the semester therefore worth 30%. The RATs were utilised in place of the traditional mid-semester and end-of-semester individual examinations typical in non-TBL delivery. Selecting

the best six out of eight RAT scores gives students the opportunity to ignore any 'bad day' performances. Also, given the specific nature of the RATs, particularly the tRAT, which makes it inappropriate to offer students the opportunity to sit a 'supplementary' test if they are unable to sit a scheduled RAT, the use of the best six out of eight RATs gives students the opportunity to miss up to two RATs due to illness without adversely affecting their assessments. Whilst the best six out of eight RAT scores were used to determine students' final grades, the specific research analysed and reported in this paper included all student scores, not just their best six.

Date Collection Procedures

To fulfil the objectives of the research, both quantitative and qualitative data were obtained and evaluated. Following Freeman, McGrath-Champ, Clark and Taylor (2006), the impact of the TBL RATs upon students was determined via comparison of the iRAT and tRAT scores obtained from the formal RATs throughout the semester as well as via a perception survey. Students were specifically surveyed regarding their views of the TBL approach relative to their previous experiences with non-TBL subjects. The mean values from the RATs were subsequently compared using paired t-tests to determine whether there were significant differences across the individual and team scores. These data were utilised to assist achievement of objective one (impact of TBL on the performance of individual students compared with their teams). To obtain data to assess objective two (enhancement of student engagement), a questionnaire containing seven-point Likert scale ratings, multiple-choice and open response questions was provided to students during the final week of semester following completion of all TBL activities (refer to Appendix).

Thematic analysis informed by guidelines developed by Patton (2002) and Creswell (2003) was utilised to examine the student answers to the open response questions to identify emergent themes. Additional data for objective two (enhancement of student engagement) was gained via regular class observation, field-notes and self-reflection by the educator throughout the semester. This also assisted data gathering for objective three (the educator's learnings from the experience). Peer debriefing of the educator was conducted regularly throughout the semester 'for the purpose of exploring aspects of the inquiry that might otherwise remain only implicit within the inquirer's mind' (Lincoln & Guba, 1985, p. 308) and also to enhance the trustworthiness and credibility of the research (Lincoln & Guba, 1985; Creswell 1998).

Analysis and Discussion

Performance of Individual Students Compared With Their Teams

The raw RAT data were analysed as suggested by Freeman et al. (2006). Thus, initially the raw data from each of the student iRATs (maximum score of forty based on ten questions each worth four marks) and the results of the tRATs (maximum score of ten based on ten questions each worth one mark) were converted to percentage scores. Next, for each of the eight iRATs, the score for the lowest scoring individual and the highest scoring individual in each of the thirteen teams was identified. Mean scores across all thirteen teams were subsequently determined for the lowest individual, all individuals and the highest individual for each of the eight iRATs. The mean score from all eight tRATs was also determined. Mean values from each of the eight RATs for the lowest individual score versus team score, average

of individual scores versus team scores and also highest individual scores versus team scores were compared using paired t-tests to determine differences. Overall means based on the results of each of the eight RATs were also determined.

Table 1 thus contains a summary of the test results and specifically compares the individual (iRAT) and team (tRAT) test scores. The mean team score for each of the eight tests was higher than the mean individual score for each test, resulting in the overall team mean of 90.7% being significantly higher (22%) than the overall individual mean of 74.5% ($p=0.000004$). Likewise, the overall team mean of 90.7% was significantly higher (52%) than the overall mean of the lowest individual in each team ($p=0.000001$). Similarly, the overall team mean of 90.7% is also higher (6%) than the mean of the highest individual (85.8%) within each team ($p=0.0042$). Thus, the impact of the TBL process on students resulted in higher team scores. This re-affirms previous research suggesting that team activities result in better performance situations than individual situations (Dana, 2007). These results provide evidence in answering objective one. Whilst the specific reasons for this improved performance in team situations relative to individual situations may require further research, it is considered that the tRAT component provides students an opportunity for peer teaching and learning to occur, with particular learning opportunities for students who obtained lower individual scores. Additionally, results of the questionnaire completed by students indicated that 87% of students considered they 'learnt more' and 68% of students considered they were 'more likely to remember' via the TBL RATs compared to other subjects the students had taken that didn't utilise TBL. This self-reporting data from students should however be viewed with some caution as it is possible some students perceive themselves as learning more in exercises that they simply enjoy relative to less enjoyable exercises (Sitzmann, Ely, Brown, & Bauer, 2010).

INSERT TABLE 1 HERE

Table 1: Individual and team test results

Influence on Enhancement of Student Engagement

As previous mentioned, Kinzie and Gonyea (2009) regard student engagement as the amount of effort (time and energy) students devote to educationally purposeful activity. Not only did students gain higher scores working as teams, but students indicated that the regular RATs conducted throughout the semester motivated them to spend more time in study and preparation throughout the semester compared to what they indicated they would do for a standard mid-semester and end-of-semester individual test that they typically receive in non-TBL delivered subjects. For example, as commented by students, the RATs 'encourage and motivate me to study more for each week to prepare for the test' and 'forces us to really know the chapter well' and 'forces me to read'. In essence, students indicated the regular RATs provide them a motivation and incentive to stay up to date and prepare for classes each week rather than let their readings slip and only catch up in the days immediately before the mid-semester or end-of-semester tests as often occurs when students receive traditional subject delivery. Thus, it can be inferred from the survey of students that increased individual student engagement (time and energy) occurred due to the TBL process.

The end of semester questionnaire contained an open-ended question asking students what they 'liked most about the team component' of the tests. Typical student comments were - 'it was fun to find out who is right', 'improve teamwork skills', 'good to have a collaborative

approach and discuss why we chose the answer we did', 'participation in the team component of the quiz is a good way to learn from each other', 'inter-dependency', 'share knowledge and thinking with my team', 'we can discuss ideas that are different from each person, then, I had learnt more about the lesson'. These student comments are evidence that the students became highly engaged and enjoyed the team process and thus addresses objective two of the research.

Likewise, based on educator observation, the tRAT activity was perceived to be engaging for the students. The educator observed a large amount of energetic discussion occurring as students debated and negotiated a consensus answer to each question. A level of excitement built amongst the students as they scratched the answer sheet to immediately determine if the group had answered the question correctly. As the semester progressed, it was apparent that a level of friendly competition also developed between teams. This can have useful consequences for student satisfaction and learning (Baldwin, Bedell, & Johnson, 1997). Observation by the teacher of the students' strong preparation for the tests and the student interactions during the tRAT's throughout the semester assisted the fine-tuning of formative teaching processes. Utilising tRATs results in bringing the need for teamwork into the classroom rather than it being done external to the classroom, thus providing students with a structure and process for developing their team skills.

In regards to what students 'liked least about the team component', 28% of students indicated any dislike, and in all cases this related to team dynamics in determining a team answer to the multiple choice questions, with typical comments being - 'too many opinions', 'conflict of group members'. The questionnaire asked students to rate their liking of the iRATs and also the tRATs on a one to seven scale. Overall, 45% of students had the same level of liking for

both types of RATs, while 29% of students preferred the tRAT, and 26% preferred the iRAT. Of the 26% of students who preferred the iRAT to the tRAT, approximately 50% of these students achieved high individual results and could potentially be regarded as lone wolves. Asked if students considered the tests to be a good idea, 88% indicated a 'yes' response and 12% gave an 'undecided' response. Of the 12% 'undecided', approximately 50% of these students were low achievers in the iRATs and approximately 50% were high achievers.

The Educator's Perspective

Both student and educator have a shared responsibility in the student learning process (Sierra 2010). Objective three of this research related to the educator's learnings from the experience and is based on the educator's observations and reflections during the semester as well as educator analysis of some of the student responses to the questionnaire. Educators are likely, at least in their first usage of TBL, to require more preparation and administration to deliver TBL relative to traditional subject delivery processes. For example, designing, delivering and recording the results of eight iRATs of ten questions per test (a total of eighty questions overall) takes significantly more time than simply providing one end-of-semester test of eighty questions (which is then usually electronically marked). The size of classes is likely to have a significant effect upon administrative requirements. While one educator can effectively manage a class of, say, fifty students, more supervision would be required for larger classes. Portable scanners can be utilised to mark multiple choice answer sheets from the iRAT if only one answer is selected, however, it is not possible to automatically mark answer sheets where students can allocate four points per question as occurred in this specific research and is a characteristic of TBL.

There are also other logistical aspects that need to be considered. When conducting the iRAT, there is a need to ensure students cannot glance or copy the answers of other students. However, as soon as all students have completed an iRAT, students then need to be able to readily form into their teams to complete the tRAT, and be able to conduct a discussion within their team regarding their answers without other teams being able to listen-in on discussions. Additional administrative support (hence expense) and appropriate classroom formats may be required for large classes. However, educators should make the case to their management that the additional cost of delivering TBL is offset by the increased student engagement, satisfaction and team learning opportunities. Delivery of TBL also requires additional materials – the iRAT and tRAT printed forms. Extra administrative time is also required to mark and record the results.

A key decision for educators when using TBL is deciding the frequency, length and assessment weighting of RATs. In this case study, eight multiple-choice RATs, each of ten questions in length was utilised. When surveyed at the end of semester, the majority of students indicated that they considered this number of RATs and the length of each RAT was appropriate. As indicated in Table 2, the number of RATs desired by students per semester ranged from three to ten, with a median of eight. In regards to the length of each RAT, while some students preferred either 15 or 20 questions per RAT, the majority (80%) preferred ten questions per RAT. In relation to the assessment weighting of each RAT, nearly half of the students (48%) considered the current situation of 3.5% per iRAT and 1.5% per tRAT was appropriate. Only 3% of students considered the tRAT should be worth more marks than the iRAT. While this feedback from students should be considered by the educator when setting the overall subject assessment structure, it is ultimately the educator who needs to make a judgement call. It needs to be noted that the TBL process should utilise a RAT at the

commencement of each unit of study. The definition of a unit of study can be open to debate, but educators should examine the overall nature of the subject content to be delivered then divide the content into relatively uniform sized units to ensure RATs can be scheduled at regular intervals throughout the semester. Once the appropriate number of RATs for the semester has been determined, the length of each RAT to adequately cover the content should be determined as well as the appropriate assessment weighting of each RAT.

INSERT TABLE 2 HERE

Table 2: Student preference for frequency, length and value of each test

Issues such as breadth of impact and concern for equity and diversity are criteria utilised by the Australian Learning and Teaching Council (2011) to assess programs and need to be considered when evaluating potential new teaching processes. In regards to breadth of impact, TBL impacted positively on students. Students considered the iRATs were ‘fun’ and ‘encouraged and motivated’ students to ‘study more for each week’ enabling ‘learning week by week [thus resulting in keeping] up to date’. Only 2% of students disliked more than liked the iRATs (5.67 out of 7 mean liking). The group interaction via the tRATs enabled ‘sharing of knowledge’, ‘communication’, ‘negotiate’, ‘inter-dependency’, ‘working together and realising our strengths and weaknesses’. Only 1% of students disliked more than liked the tRATs (5.69 out of 7 mean liking). In regards to the impact on the educator, the introduction of TBL was a new teaching process within this case study, and thus required additional administrative time. This was offset, however, by the educator’s subsequent satisfaction in delivering what students regarded as an improved learning situation.

With respect to concern for equity, students should be provided with a comfortable learning environment in which to engage safely in debate. The very nature of TBL involves students working together rather than individually. The team RATs enabled a regular and ongoing development of team dynamics in a non-threatening setting. Instant feedback regarding accuracy of answers in the tRATs quickly ensured that potential dominant members of the team were 'put in their place' if their answers were shown to be incorrect. This enabled quieter students with quality input to become more involved, valued, and resulted in a better overall team dynamic. Thus, it was considered that TBL assists students to put forward their views in a considered and respected manner. In regards to diversity, TBL is well-suited to classes with high levels of student diversity (Fink, 2004). In this specific case study, 84% of the class were international students representing ten different nationalities. As reported earlier, 87% of the students considered they learnt more via the TBL process compared to traditional approaches. It was also observable by the educator that the tRATs actively engaged the diverse range of students.

Conclusions and Future Research

TBL is claimed to improve student engagement and learning as well as develop team skills so valued by employers. However, use of TBL in various countries including Australia is relatively sparse and unproven, with very few marketing educators currently having first-hand experience in delivering subjects via TBL.

TBL was a significant departure from the typical teaching and learning process previously used for marketing subjects within this Australian university. This case study examined and showed in the context of a postgraduate capstone marketing subject that TBL provided increased student engagement and the belief by students that they learnt more via TBL relative to traditional teaching delivery modes that students had previously experienced. The case study also indicated that students gained higher marks when undertaking the team test than when doing the same test individually – whether this was due to increased learning or other factors is perhaps unclear. Students also gained in both their group and intercultural competence. This case study contributes to the broad knowledge of delivering a postgraduate university marketing subject. More specifically, it also contributes by assessing and clarifying aspects of one delivery process, namely TBL. A further, and key contribution of this case study is identification from the educator's perspective of issues and aspects of TBL that need to be examined and considered when introducing TBL, something typically lacking in previous studies of TBL.

As with most studies, this study has some limitations that offer areas for future research. This research involved a case study of one medium sized final year postgraduate marketing class. Further research opportunities include studies of classes covering a wider range of settings (e.g. undergraduate vs postgraduate classes, small vs medium vs large classes, first year vs latter year students). The research focussed on the individual (iRAT) and group (tRAT) readiness assurance tests rather than the other component of TBL, which is the application exercise component. This offers the opportunity to explore the application exercise component of TBL in future research – either in conjunction with, or separate from further analysis of the RAT component of TBL. As this was the first time TBL had been utilised for a marketing subject within this University, there may have been a novelty factor in the process

for students. To examine any possible novelty factor effect, further research could examine use of TBL on students who have had previous experiences of TBL. This research utilised teams of (mainly) four students. There is arguably no ideal size for university team assessment tasks however Aggarwal and O'Brien (2008, p. 255) suggest that 'social loafing increases with … the size of the student group'. There is potential to conduct future research that involves differing team sizes.

While TBL is an accepted 'broad' process with generic guidelines, there is a need for educators who utilise TBL to 'fine-tune' their own practice to meet the specific needs of their classes. For example, the number, size and overall value of RATs in a student's assessment needs to be determined by educators. Are ten questions per multiple-choice RAT appropriate? Are eight tests per semester appropriate? Should each iRAT be worth 3.5%, or more, or less? Thus, there is a need by educators to assess and develop the optimal factors associated with delivery of TBL within a specific setting. This is an issue that educators can address based on examination of practices and experiences of other educators who have used TBL and their own developing experiences with TBL. Thus, future research could involve evaluation of RATs of differing number, size and value.

Teaching university students teamwork skills rarely occurs in university curricula but can be regarded as beneficial to students (Chen, Donohoe, & Klimoski, 2004; Prichard, Bizo, & Stratford, 2006). TBL is regarded as a process that aids team development. Future research could involve examining the performance of student teams under TBL delivery for two sets of conditions - one condition whereby teams have had specific teamwork skills training, the other condition under which another set of teams have had no specific teamwork skill training. This would assist in determining how much of the improvement in student

performance is due solely to TBL, versus how much improvement in performance is due to prior teamwork skills training.

We live in a climate where educators are challenged to look for innovative teaching and learning activities to better engage students and empower them to learn more effectively. TBL has been shown in this case study to be an effective tool for marketing educators to address this challenge, as it provides students with a more stimulating and engaging environment than traditional teaching methods to which these students were accustomed. TBL thus has merit for the immediate stakeholders (students and educator) as well as worth for the broader audience including potential employers of the students.

APPENDIX

Perceptions of MARKXXX Regarding the In-Lecture Tests

1) How many tests should be held each semester?

0 1 2 3 4 5 6 7 8 9 10

2) How much should each test be worth?

Individual component of each test = _____ % e.g. this semester it was 3.5%

Team component of each test = _____ % e.g. this semester it was 1.5%

Total per test = _____ % e.g. this semester it was 5%

3) How many questions should be asked in each test?

5 10 15 20 25 (this semester we had 10 questions per test)

4) Compared to other subjects I have taken that don't use in-lecture tests, I think I have:

a) Learnt more via the RATs
b) Learnt less via the RATs
c) Learnt about the same amount via the RATs
d) Don't know

5) Compared to other subjects I have taken that don't use in-lecture tests, I think I am:

a) More likely to remember what I learnt now that I've finished the subject
b) Less likely to remember what I learnt now that I've finished the subject
c) Neither more likely nor less likely to remember what I learnt now that I've finished
d) Don't know

6) How strongly did you dislike or like the Individual component of the tests?

1 2 3 4 5 6 7

Strongly Dislike Strongly Like

7) How strongly did you dislike or like the Team component of the tests?

1 2 3 4 5 6 7

Strongly Dislike Strongly Like

8) What did you like MOST about the Individual component of the tests?

9) What did you like LEAST about the Individual component of the tests?

10) What did you like MOST about the Team component of the tests?

11) What did you like LEAST about the Team component of the tests?

12) What was your overall grade in the Individual component of the test?

Below 75% 75% or Above

13) Overall, do you think use of the tests is a good idea?

No Undecided Yes

14) Any other comments regarding the tests?

Thank you for completing this survey

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Table 1. Individual and team test results

	Individual Test (iRAT) % Scores						Team Test (tRAT) % Scores	
	Lowest individual in team		Average of individuals in team		Highest individual in team			
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
Test 1	52.5%	16.7%	67.2%	8.9%	81.9%	6.6%	83.8%	10.4%
Test 2	57.3%	19.1%	74.8%	10.7%	88.5%	10.5%	93.8%	8.7%
Test 3	57.9%	12.9%	70.2%	7.0%	81.3%	6.6%	90.0%	9.1%
Test 4	63.1%	10.8%	73.3%	7.4%	80.8%	7.9%	87.7%	10.9%
Test 5	59.2%	8.6%	72.6%	8.7%	82.7%	11.1%	89.2%	12.6%
Test 6	57.5%	15.3%	75.3%	8.2%	87.3%	10.5%	95.4%	5.2%
Test 7	73.8%	16.1%	84.2%	9.9%	94.2%	7.3%	94.6%	6.6%
Test 8	65.2%	15.8%	78.5%	10.4%	89.8%	8.4%	90.8%	8.6%
Overall	60.8%	15.5%	74.5%	10.0%	85.8%	9.6%	90.7%	9.7%

Table 2. Student preference for frequency, length and value of each test

	How many tests per semester?	Questions per test	% of overall assessment per iRAT	% of overall assessment per tRAT
Maximum	10	20	7	5
Minimum	3	10	2.5	1
Average	7.5	11.8	3.9	2
Median	8 (34%)	10 (80%)	3.5 (48%)	1.5 (48%)