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Paper Title: Student engagement with Team-Based Learning in undergraduate entrepreneurship courses: an exploratory study

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STUDENT ENGAGEMENT WITH TEAM-BASED LEARNING IN UNDERGRADUATE ENTREPRENEURSHIP COURSES: AN EXPLORATORY STUDY

ABSTRACT

Student engagement in their courses has been demonstrated to be related to positive learning outcomes. Engaging students is particularly important in entrepreneurship education because of the complexity of entrepreneurship as an activity and field of study. Team-Based Learning has been identified as an effective teaching method for engaging students with course content in a range of fields of study. This paper describes the application of concept mapping as a research method to identify what undergraduate students understand to be engagement with the Team-Based Learning method in an entrepreneurship foundation course. This research identified themes of engagement across three separate deliveries of this course that were largely cognitive, and were generally in accordance with the dimensions of engagement employed in questionnaires used to measure engagement at the institutional and classroom level. The results have value in helping educators to further refine the effectiveness of this particular teaching method. The results also suggest areas for further research.

INTRODUCTION

Student engagement, described as the time and energy that students devote to their learning (Kuh, Cruce & Shoup 2008), is becoming increasingly important, as high levels of student engagement have been demonstrated to be related to positive learning outcomes and student retention (Kuh, Cruce & Shoup 2008; Coates 2009). Student engagement is even more important for entrepreneurship education (Balan & Metcalfe 2012). This is because entrepreneurship students need to develop a wide range of practical and conceptual skills to prepare them to deal with the complexity of the entrepreneurial process (Gibb 2002). Teaching methods in this field therefore need to engage students actively so that they are best able to develop the capability to assess complex conditions characterised by high levels of ambiguity to arrive at appropriate decisions (Arvanites et al. 2006; Kailer 2009), and to learn how to address the complexities of new enterprise creation (Biggs 2003). Although a wide range of methods is used to teach entrepreneurship, (Solomon 2008), there is general agreement that methods that are learner-centred are the most effective in engaging students and in helping them to understand the key aspects of entrepreneurial activity (Gibb 2002; Zahra & Welter 2008; Jones, B & Iredale 2010). In summary, engagement is a key consideration in the selection of teaching methods for entrepreneurship students.

Team-Based learning (TBL) was developed in the late 1970s (Michaelsen, Knight & Fink 2004; Michaelsen & Sweet 2008) by Professor Larry Michaelsen, as a learner-centred method for engaging students in their learning, and fostering effective and productive teamwork. Although this method has been considered for entrepreneurship education (Rushworth 2011), it has not been widely used in this field. The second implementation internationally in entrepreneurship was in April 2010 at the University of South Australia, and this method has since been used systematically in ten separate undergraduate course deliveries. TBL relies on students working independently to learn course content before a class, being tested on that course content at the start of the class using a multiple-choice test, and then completing the same test as a team. Teams obtain immediate feedback by scoring their responses using a “scratch and win” card that shows immediately if they have the

correct answer. The remainder of the teaching session is then used to carry out application exercises of the course content. The individual and team multiple-choice test results make up part of the course assessment.

Although research has shown that this teaching method improves learning outcomes (McInerney & Fink 2003), there do not appear to have been attempts to explore engagement from the student point of view with TBL as a teaching method at the classroom level. This is important, because educators using this method need to know what their particular cohort of students understands by "engagement". This is so that they can fine-tune and improve aspects of this teaching method to achieve as high levels of engagement as possible in order to improve the effectiveness of a particular course in entrepreneurship, and the student learning outcomes.

Understanding engagement at the level of a teaching method is a challenge. Long-established instruments are used for measuring student engagement at the institutional level (Coates 2009), such as the US National Study of Student Engagement (NSSE), and its Australian version, the Australian University Study of Student Engagement (AUSSE). Although their results can be used in a top-down approach at the course level (Balan 2011; Balan & Metcalfe 2012) to form a subjective assessment of the contribution of teaching methods (including TBL) to engaging students, they do not explain how these methods achieve engagement. Course-level survey instruments are available, but require large numbers of respondents (i.e. large classes) for validity. In addition, they measure only overall student engagement with the whole course, and do not provide insights into the engagement of students with particular teaching methods.

This paper describes an exploratory qualitative study that implements the concept mapping research method to explore what undergraduate students taking an entrepreneurship foundation course understand by engagement in the Team-Based Learning method. The results provide important insights into the engagement construct, as perceived by these particular students, and provide valuable and practical guidelines for instructors to reinforce key aspects of the implementation of Team-Based Learning in these classes. In addition, the results suggest further research directions, and provide the basis for further empirical study.

THEORETICAL FOUNDATIONS

Entrepreneurship education

Entrepreneurship has been demonstrated to be linked to regional economic development (OECD 2003). Governments in many countries have encouraged the development and delivery of education programs to support and encourage individuals for self-employment. Entrepreneurship education, therefore, is an important growth area internationally, with a corresponding growth in the number of chairs entrepreneurship (Gibb 2002), and proliferation of entrepreneurship courses.

Entrepreneurship education is typically defined as "about developing attitudes, behaviours and capacities at the individual level. It is also about the application of those skills and attitudes that can take many forms during an individual's career" (Wilson 2008, p.127). Different aims of entrepreneurial education can be distinguished. For example, Jamieson (1984) divided entrepreneurial education into three purposes or categories; education *about*, education *for*, and education *in* enterprise. Each purpose has a strong influence on teaching methods and content. For example, education *about* can be described as giving students an

understanding of the nature of entrepreneurship and the entrepreneurial process, while education *for* can be described as preparing students to start their own business, and education *in* can be described as hands-on training for entrepreneurs in their own business (Taatila 2010, p.51).

Nevertheless, a general view in the literature is that entrepreneurship courses should aim to develop the particular skills, capabilities, or attributes that are identified as characteristics of successful entrepreneurs. For example, Schumpeter (1934) stated that successful entrepreneurs should be innovative, creative and risk-taking and be prepared to engage in "creative destruction" to build new ventures that would displace existing industries. Kirzner (1979) proposed that opportunity identification in a changing business environment was the critical element in entrepreneurship, and so opportunity recognition was identified as an important requirement for success. Research into entrepreneurial practice has identified numerous other elements that are considered to be characteristic of the entrepreneurial process, and should be included in entrepreneurship courses.

Given these general objectives, specific activities and teaching approaches need to be undertaken. Gibb (2002, p.255) suggests a range of activities for each of the major stages in the development of the new venture, as well as a large number of teaching methods (including lectures, cases, discussion groups, projects, simulations, games, and investigations) to support the development of entrepreneurial behaviours and skills (p. 269). The use of a wide range of teaching methods in entrepreneurship courses was identified in colleges and universities in the United States (Solomon 2008, p.104), and these included case studies, business plan writing, lectures by entrepreneurs, computer simulations, on-site visits, and in class exercises. Educators have sought creative approaches to help students think like an entrepreneur, and act as an entrepreneur, using delivery methods including games, case study discussion, workshop presentations, and reflective diary writing designed "to create an environment in which students would be encouraged to engage actively with the entrepreneurial process rather than simply read about" (Jones, C 2007, p.409).

A similar search for approaches to engage entrepreneurship students is described by Biggs (2003), who outlined the value of what he described as "constructive alignment" in a teaching program, based on the proposition that good learning is deep learning. Deep learning is supported by a common understanding of learning objectives, student motivation, student freedom to focus on the task (rather than on the assessment), and interaction between fellow students as well as with teachers (Biggs 2003, p.13). The focus is on designing the curriculum so that each of these aspects is aligned in a constructive manner. In particular,

> "the curriculum as stated in the form of clear objectives, which state the level of understanding required rather than simply a list of topics to be covered. Teaching methods are chosen that are likely to realise those objectives; you get students to do the things that the objectives nominate. ... all components ... address the same agenda and support each other. The students are 'entrapped' in this web of consistency, optimising the likelihood that they will engage in the appropriate learning activities" (Biggs 2003, p.26).

Similarly, in the search for methods to best engage students, Fiet (2000) proposed that entrepreneurship courses implement a range of experiential activities where the focus is on what the student does. This view is also supported by Zahra and Welter (2008), who argued that "entrepreneurial skills are learned in a variety of ways and methods. Some are best learned by doing and observing others. Lecture-based education has its place in the

curriculum, but the training of future entrepreneurs should also include interactive and action oriented methods" (Zahra & Welter 2008, p.188).

In summary, the entrepreneurship education literature proposes that courses should focus strongly on "experiential", or "learning-by-doing" teaching methods, and describes a wide range of teaching methods. The challenge facing educators is that there do not appear to be guidelines for selecting which of the many activities and methods might be the most engaging for their particular cohort of students, and in their particular teaching context. In addition, once having fixed on a method that appears to offer high levels of engagement, educators need to understand how this teaching method engages their students, and how to improve or enhance the engagement of entrepreneurship students with that particular method.

Student Engagement in Learning

Student engagement has been described as the degree to which students make a psychological investment in the learning process, and participate in these processes to promote higher-level thinking. In particular, engagement, "defined as students' involvement with activities and conditions likely to generate high-quality learning, is increasingly understood to be important for high-quality education" (Coates 2009, p.3).

There have been attempts in Australia to identify the components of university experience that students identify as most engaging them in productive learning. For example, Scott (2005) analysed over 160,000 open-ended comments made by more than 94,000 graduates of 14 Australian universities between 2001 and 2004, and found that "it is students' total experience of university – not just what happens in the traditional classroom – that shapes their judgements of quality, promotes retention and engages them in productive learning" (Scott 2005, p.vii). In particular, the analysis showed that "practice-oriented and interactive, face-to-face learning methods" were the most frequently mentioned as being highly favourable. These findings do not provide guidance at the level of a particular teaching method. Krause and Coates (2005) studied retention of first-year students in Australia, and identified seven dimensions of students' engagement with the University study and learning. However, the results do not appear to be readily translatable into specific actions for improving student engagement at the level of a particular teaching method.

The most substantial body of empirical research in this field is The National Survey of Student Engagement (NSSE) in the United States that was launched in 2000. More than 320,000 students from 577 institutions in the US and Canada participated in this study in 2012 (NSSE 2012). This continuing study uses elements that have been found to engage students in productive learning, and measures the dimensions at the institutional level that influence learning, as well as student retention. The NSSE has been translated to the Australian environment by the Australian Council for Educational Research and implemented as the Australasian Survey of Student Engagement (AUSSE). This survey was designed to gather information on the time and effort that students devote to educationally purposeful activities as well as on their perceptions of the quality of other aspects of the university experience, and is reported in "Engaging Students for Success" (Coates 2009).

In 2009, more than 30,000 university students in Australia and New Zealand responded to this survey of student engagement. The instrument includes five scales from the NSSE study: academic challenge, active learning, student and staff interactions, enriching educational experiences, and supportive learning environment. It also includes a "work integrated learning" scale, developed specifically for the Australasian study (Coates 2009, p.vii). It has

been shown that the results of this institutional-level study can allow an instructor to form a subjective assessment of the contribution to student engagement of their own teaching methods (Balan 2011; Balan & Metcalfe 2012), and to obtain an indication of which methods are likely to be the most engaging for their particular class. This information can be supplemented by resources such as those provided by Barkley (2010), who provides a general indication of how a number of different teaching activities might contribute to the NSSE engagement dimensions. These approaches and resources do not, however, give the instructor specific dimensions or measures of engagement for different teaching methods that might allow the instructor to further develop or improve their effectiveness.

Course-level survey instruments have been developed with the aim of giving educators a better understanding of engagement at a finer level of detail. These include the Class-Level Survey of Student Engagement (CLASSE) that was adapted from the NSSE to measure course-level engagement (Ouimet & Smallwood 2005), and the Student Course Engagement Questionnaire (SCEQ) instrument developed by Handelsman et al. (2005). These instruments require large numbers of respondents for validity, and they have the further shortcoming of measuring only overall student engagement with the whole course.

In summary, although engagement is demonstrated to be important for enhancing learning outcomes, the literature does not appear to give educators guidance on the nature of engagement of particular teaching methods that could be directly applied to their particular cohort of students, or their own teaching context and objectives.

Team-Based Learning as a teaching method

This teaching method was developed by Professor Larry Michaelsen (currently at the University of Central Missouri) in response to the challenge of teaching group work in classes when student numbers were increased from about 40 to 120 (Michaelsen, Knight & Fink 2004). Team Based Learning has mainly been implemented in the field of health education, where it has demonstrated stimulation of out-of-class study, increased levels of in-class engagement, and improved teamwork between students in medical courses (Searle et al. 2003; Thompson et al. 2007), as well as increased content retention and improved critical thinking in physiology courses (McInerney & Fink 2003) This approach has been shown to improve student performance in summative assessments in pharmacy studies (Letassy et al. 2008). It has also been shown to improve problem-solving, interpersonal communication and organisational skills (Cestone, Levine & Lane 2008). This is therefore a teaching method that is worth considering as an approach for engaging students in entrepreneurship courses.

The key components of Team-Based Learning are a "readiness assurance process" linked to "in-class activities" implemented with students allocated into groups of ideally seven members, and a peer review process that allows students to provide feedback to their team members on their contribution to teamwork. The following overview is taken from Michaelsen and Sweet (2008).

The "readiness assurance process" occurs at the beginning of specified teaching sessions, and forms part of the course assessment. Students are required to learn designated course material (such as a text book section, reports or papers) before the session. At the start of the session, students complete a number of multiple choice questions (typically 15 to 20 questions) addressing the prescribed material. Immediately following this exercise, students complete the same questions as a team, but using a special type of scoring card known as an IF-AT ("scratch and win") card. Team members negotiate which of the multiple choice question

answers to choose, and then scratch off an opaque coating on the card corresponding to their selected answer. If a star is revealed, it indicates that the team has arrived at the correct answer. If the team does not discover a star, they continue to discuss the question and sequentially select other choices until they have selected the correct answer.

This process makes students individually accountable for acquiring before the session the knowledge that they will need for the individual test and for the team test, as well as for in-class exercises that follow. It also requires students to negotiate within their teams to arrive at collective answers, and this means that there is forced communication between team members. This testing process includes a mechanism for students to appeal the outcomes if they consider that a question is not appropriately worded, or if they disagree with the selected results. The process is followed by a mini-lecture where the instructor reviews the areas of content that the testing process reveals to be the most problematic for students. This testing and review process reinforces learning and replaces the traditional lecture session.

The "in-class activities" follow the testing and review stages and take up the major part of class time. These activities are designed to give individuals, teams and the whole class opportunities to reflect on the application or implications of the content that they have learned and that has been tested. These activities are designed around four key principles (4 S's) to reinforce learning: "Significant Problems", "Same Problem", "Specific Choice", and "Simultaneous Report".

In-class activities address "Significant Problems" that are relevant to the course content and to students, and are designed to illustrate the application of constructs, models or principles relevant to the particular course. Each team works on the "Same Problem" as this creates the opportunities for teams to arrive at conclusions that can be subsequently discussed, challenged, examined and defended. Each team is required to make a "Specific Choice" or conclusion, that focuses discussion and negotiation within the team, and subsequently provides the basis for classroom discussion. This ensures that decisions can be compared, and is one of the major strengths of the TBL reporting process. Following negotiations within the team, they "Simultaneously Report" their decision indicating a particular choice, and this is typically done by displaying a card indicating that choice. This method allows teams to see the decisions that others have arrived at, and provides the starting point for discussion at the classroom level where teams are encouraged to challenge each other and defend their own thinking to support the decisions that they have made. This gives immediate peer feedback that is focused on how the decision was arrived at, rather than what was the correct answer. It also gives the instructor the opportunity to comment on both the process of decision making as well as the specific decision arrived at. Finally, a peer review process gives student valuable feedback on their contribution to teamwork.

Team-Based Learning appears to be an effective method to achieve a number of desirable objectives for effective entrepreneurship education (Rushworth 2011). It can be applied to problems that students might expect to encounter as potential entrepreneurs (Fiet 2000), it focuses on building problem-solving capabilities, and by the application of learned knowledge through the in-class activities (Stephenson 1998). In addition, it allows the development of knowledge at different levels of Bloom's taxonomy (Athanassiou, McNett & Harvey 2003), it is founded on student-directed learning (Fiet 2000), it is implemented as an experiential learning cycle in the classroom (Kolb 1984) and it supports strongly the value of working in teams (Stevenson, Roberts & Grousbeck 1989).

In summary, entrepreneurship education is a complex field of instruction, in which student engagement is very important, and perhaps more important than in other fields of study. There is a range of tools for measuring student engagement, but these have been implemented only at the level of the institution, or of the whole course. Team-Based Learning is reported to have a favourable impact on learning outcomes, and appears to be an appropriately teaching method for engaging students in entrepreneurship education. There do not, however, appear to be existing methods for investigating the specific ways in which a teaching method such as Team-Based Learning engages particular groups of students. The aim of the research was to help to understand in what ways Team-Based Learning engenders engagement among students in these courses, and to identify ways in which engagement can be enhanced or improved.

The specific research questions in this exploratory study were: (1) what are the dimensions of student engagement with TBL as a specific teaching method, and (2) are the dimensions of engagement consistent for different deliveries of the same course?

RESEARCH METHOD

An undergraduate entrepreneurship foundation course was re-designed around the principles of Team-Based Learning, as described above. This is an elective course that is taken by students from across the University. Assessment of the motivations and expectations of students indicated that the most appropriate approach was to teach *about* entrepreneurship, as the large majority of students enrolled in the course simply out of interest in entrepreneurship in general, and to meet study program requirements. Only a small number (perhaps only one or two in each class) indicated an intention to start their own enterprise.

Participants in this study were students in three separate classes of this one course that were conducted over a year. None of the students had experienced the Team-Based Learning method, and in the very first lecture session, students were randomly allocated into teams of six or seven. They were introduced to the method in the form of a “test run” (that was not assessed) and this allowed students to become familiar with the process and the materials. The course is delivered in intensive mode, and each of the following five sessions (spread over two weeks) started with a Team-Based Learning multiple-choice individual and team test that counted towards their course assessment. Students were given two opportunities to provide peer-review feedback to their team-mates on their contribution to teamwork. This was done as a formative exercise, and was not used to moderate assessment marks.

Towards the end of the course, students were given a blank sheet of paper, and were shown a slide stating that “engagement is the time and energy put into educationally purposeful activities”. Students were asked to write on their sheet of paper “two reasons why Team-Based Learning is engaging”. The data collected using this “minute paper” method (Angelo & Cross 1993), consisted of anonymous, voluntary and unprompted qualitative comments. Each class was taught by the same instructor using the same teaching approach, and this person carried out the data collection in the same way. Comments for each class were analysed separately in an inductive approach, using the concept mapping method (Borgatti, Everett & Freeman 2002; Kane & Trochim 2007).

The concept mapping method was selected because:

- it is appropriate for addressing the research questions in this study;

- it is a rigorous mixed-method approach that combines qualitative interpretation with qualitative analysis;
- it is appropriate for analysing data in the form of short comments (as in this case);
- the output consists of maps showing links between the comments and clusters or themes of similar comments;
- themes can be explored at different levels of detail, and this allows great scope in interpreting and understanding the construct being investigated:
- the nature of the graphical output helps to identify relationships between the underlying themes represented by the clusters of similar comments;
- in particular, it provides a detailed audit trail that allows each step in the analysis to be assessed and critiqued, thus allowing collaboration, verification and replication.

This method was implemented in the following manner:

- the raw data (qualitative comments) were entered verbatim into an Excel spreadsheet;
- one of the researchers coded the three datasets separately by identifying similarities between statements. This was done as objectively as possible, without interpreting the statements. This was a systematic coding process with each similarity recorded;
- similarity relationships were entered into the UCINET6 social network analysis software (Borgatti, Everett & Freeman 2002);
- the software produced a three-dimensional map showing the relationships between the statements in the dataset;
- using Girvan-Newman subgroup analysis (Girvan & Newman 2002), the number of clusters was varied between two and 11, and the researchers collaboratively evaluated each set of clusters. They determined that, in each case, 10 clusters appeared to represent an optimal solution of "saturation", when additional clusters did not add to the overall analysis;
- the data elements in the Excel spreadsheet were grouped together, using the clusters as a guide;
- the two researchers collaboratively checked these groups of comments for homogeneity, and items that did not "fit" had their coding corrected;
- the cluster maps were re-drawn following coding corrections;
- the two researchers interpreted the themes from the elements in each cluster to arrive at names or labels for each theme. This was carried out by referring to the original statements that were grouped as described above to arrive at an inductive interpretation;
- this analysis was carried out separately for each of the three datasets.

RESULTS AND IMPLICATIONS

The classes included a significant proportion of international students, as shown in Table 1.

Class	1	2	3
Number of students enrolled	45	36	54
Females	33%	47%	32%
International students	33%	61%	34%
Participants in study	39	34	43
Numbers of comments/data elements included in the concept mapping analysis	91	76	96

Table 1: Profile of participants in each of the three entrepreneurship classes

Analysis of data for these three classes produced separate maps showing the clusters or themes describing perceptions of student engagement in TBL. Figure 1 shows the "optimal" number of clusters (10) for one of the datasets. In this Figure, the nodes represent each data element, and these are shown as a projection of a three-dimensional map where the lines between each data element are the same length. The circular shapes were applied by the researchers to highlight the clusters created by the mapping process, and the labels are the names that the researchers gave to each cluster. These labels are the engagement "themes".

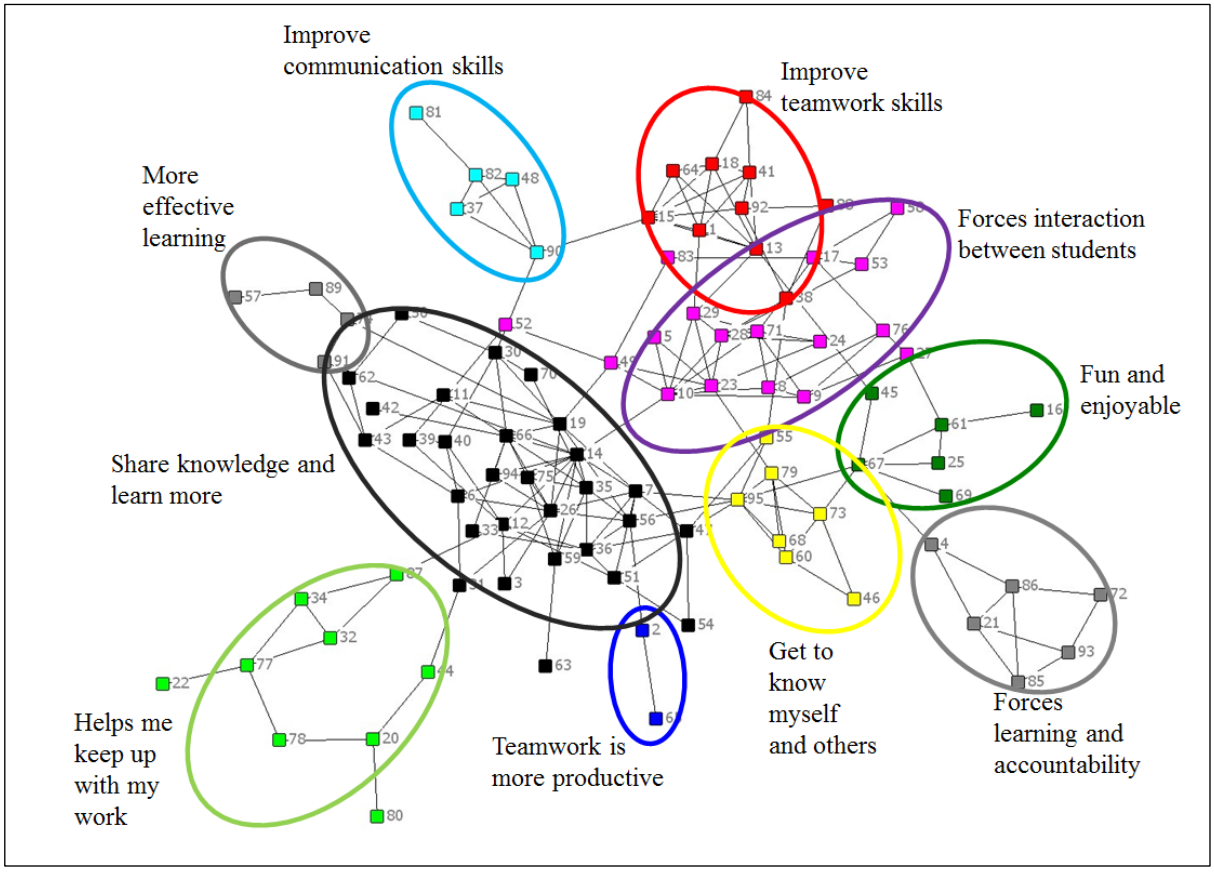

Figure 1: Cluster map for one of the datasets

These clusters can be described as themes or dimensions of engagement with descriptors shown in Table 2 (thus addressing the first research question). These are shown separately for each class, and are ranked in decreasing order of the number of comments making up each theme or dimension. Note that this ranking may suggest importance, but does not necessarily provide a measure of importance.

There are similarities between the labels or themes for each of these three classes, but they are not exactly identical. This result suggests that there is a "moderate" consistency between the themes or dimensions of engagement with this teaching method for the three deliveries of this course (thus addressing the second research question). This outcome suggests noteworthy differences between classes.

Class 1	Class 2	Class 3
Improve understanding through teamwork	Stimulates thinking and ideas	Share knowledge and learn more
Entertaining and fun	Learn to communicate in a team and improve teamwork	Forces interaction between students
Improve communication with others	Encourage preparation by being a more interesting method	Improve teamwork skills
Help to understand self and others	Allows us to learn from others	Helps me keep up with my work
Develop good teamwork	Fun and enjoyable	Get to know myself and others
Makes me learn content and be prepared for class	Helps me to get to know other people	Fun and enjoyable
Improves my marks	Helps to improve our scores and marks	Forces learning and accountability
Practical personal improvement	Like a real-world exercise	Improve communication skills
Good preparation for the workplace	Makes it easier to understand course content	More effective learning
Sharing ideas with others	Competition aspect of assessment engages	Teamwork is more productive

Table 2: Themes of engagement identified for each of the three entrepreneurship classes

In an attempt to better understand possible commonalities between the results for these three classes, the concept mapping method was applied to the results shown in Table 2. This analysis resulted in the consolidated themes in Table 3, that are ranked in decreasing order of the number of times these are mentioned in this particular analysis.

Consolidated themes resulting from this research	Aspect of engagement (Fredricks, Blumenfeld & Paris 2004)		
	Behavioural	Emotional	Cognitive
Improve understanding and learning			√
Improve communication skills			√
Know myself and others			√
Fun and enjoyable		√	
Share ideas			√
Preparation for the workplace			√
Improves marks			√

Table 3: Consolidated themes of engagement for the three entrepreneurship classes

These results can be compared with the dimensions used in other engagement studies. As mentioned above, the CLASSE instrument was derived from the NSSE survey, and uses the same dimensions, so it is not included separately in the comparison shown in Table 4. This was arrived at by comparing the consolidated themes identified in this study with the detailed items making up each of the scale dimensions for each of the NSSE scales, and the SCEQ scales.

This subjective comparison indicates that the consolidated themes identified in the study relate reasonably well with the dimensions identified in the two relevant empirical studies. This suggests that the results of this study could be relied on to provide a reliable indication of the key aspects of engagement of students with the Team-Based Learning method.

SCEQ Class-level dimensions (Handelsman et al. 2005)	NSSE Institution-level dimensions (Coates 2009)	Consolidated themes identified in this study
• Skills engagement	• Academic challenge	• Improve understanding and learning
• Emotional engagement	• Enriching education experiences • Work-integrated learning	• Improve understanding and learning • Know myself and others • Preparation for the workplace
• Participation/interaction engagement	• Active learning • Student and staff interactions	• Improve communication skills • Fun and enjoyable • Share ideas
• Performance engagement		• Improve marks
	• Supportive learning environment	• Know myself and others

Table 4: Comparison of the dimensions identified in studies of student engagement

It can be noted that the apparent importance of the theme of "improve understanding and learning" identified in this study (Table 3), is aligned with one of the key objectives of Team-Based Learning as a teaching method (Michaelsen 2004, p.44). In addition, the cumulative themes identified in Table 3 are well aligned with other key objectives of this teaching method (Knight 2004, p.205; Parmalee et al. 2012, p.e284).

The results shown in the Table 3, however, indicate that these themes address only two of the aspects of engagement (behavioural, emotional, and cognitive) that are identified in the literature (Fredricks, Blumenfeld & Paris 2004). This suggests that, either the other aspects of engagement were not considered to be important to the students in these classes, or that there were features of the particular teaching method that addressed the behavioural aspects of engagement sufficiently so that they were not noticed by these students.

In summary, the results are aligned with those of other engagement research and with stated objectives for this teaching method. The results confirm that these particular groups of entrepreneurship students find TBL to be an engaging teaching method, thus supporting assertions in the Team-Based Learning literature. The results have given the instructor useful information for refining the implementation of Team-Based Learning for future class deliveries to strengthen student engagement by reinforcing the dimensions identified by these particular students. For example, the instructor has introduced classroom activities such as informal quizzes with humorous prizes (chocolate frogs) to reinforce the "fun and enjoyable" aspect of the teaching method.

Limitations of this exploratory study include the limited number of classes included in this study, and the inability in these results to distinguish engagement themes between different types of students (gender or international versus local). A further limitation is the particular method used to consolidate data across the three groups that were studied, but further research will be carried out to address this particular aspect of the study.

The results provide the basis for further research. In particular, data collection for further classes can be designed in a manner to identify possible influences of gender, and type of student (international or local). In addition, further work can be carried out to refine methods for consolidating results obtained for different classes or groups of students. Further, the concept mapping analysis identifies links between these clusters or themes. These links suggest relationships between the clusters identified, and these relationships can be explored

in the context of the engagement literature to help to clarify dependencies between themes. A further area to be investigated is the interplay between behavioural, emotional, and cognitive aspects of engagement in these classes and with this particular teaching method. This research can also provide the basis for the development of a scale for measuring engagement at the level of this particular teaching method.

CONCLUSIONS

Student engagement is recognised to be important in education, particularly at the secondary and tertiary levels, as it is identified as having a positive relationship with learning outcomes, as well as student retention. There has not, however, been a great deal of attention given to identifying what engagement means to students with regard to particular teaching methods. One possible reason for this gap in the literature is the availability of research methods that are relatively quick and easy to implement at the classroom level, particularly with smaller classes where the implementation of survey questionnaires is not likely to provide reliable results.

This exploratory study implemented concept mapping as an appropriate qualitative research method to identify the themes of engagement for three separate classes of students taking the same undergraduate entrepreneurship foundation course. In particular, these classes were delivered in a consistent manner using the Team-Based Learning method which is generally regarded as a teaching method that engages students and helps them to achieve improved learning outcomes. This study identified a number of important cognitive engagement themes that were generally aligned with the dimensions used in quantitative instruments used to measure engagement at the institutional and classroom levels. In particular, the results showed that there were only general commonalities between the themes of engagement for different classes, and this is an area that requires further investigation.

The contribution of this paper is that it addresses themes of engagement at the individual classroom level and in relation to a specific teaching method. This exploratory research shows support for the broad dimensions of engagement used in existing NSSE/CLASSE and SCEQ scales. The results can be used to develop more refined quantitative scales for further research. In addition, these results give instructors insights into the ways that their particular students perceive engagement, and provides valuable and practical information that can be used to enhance engagement at the classroom and activity level. Results already have demonstrated practical value in revealing ways to increase student engagement in class activities and hence improve learning outcomes.

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