Flipping the Jigsaw

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Abstract

Enterprise and entrepreneurship is identified as a topic that has broad relevance to the purposes of higher education and its wider context in society (QAA 2018) and with countries from across the globe promoting its importance in connection to local, national and economic growth its demand is now on an increase. The UK entrepreneurship education policy highlights and draws out categories of learning 'About', For' and 'Through' entrepreneurship (QAA, 2018). Over the years many teaching strategies have been adopted and adapted for purposes of context around these categories, however, further enhancements are necessary to reflect the changing needs of the learners. Learning 'About' entrepreneurship places a focus on theoretical underpinnings and therefore, can be demanding in terms of content and challenging in terms of knowledge retention and student engagement. This paper focuses on the 'About' element, in the view of combining two pedagogies 'Flipped Classroom' style that maximises on time and content for individual learners and 'Jigsaw Strategy' that requires learners to work in collaboration to complete tasks. These two pedagogies have been combined to coin and advocate 'flipping the jigsaw' pedagogy in this paper. The philosophy behind the technique was to maximise on time, space, content, and stimulate student engagement, whilst also enhancing other skills such as critical thinking, evaluation and problem solving as well as collaborative and cooperative working, furthermore, develop employability skills set. The study is based on first year BA Enterprise and Entrepreneurship students at the International Centre for Transformational entrepreneurship Coventry University. This study is cross-sectional, practiced-based with a combination of action research. The sample size is 25 students studying on a theory-based module. The findings of the study have yielded some interesting outcomes such as heightened student engagement, increased understanding and grasp of the topics, demonstration of critical discussion skills, heightened subject retention with overall student satisfaction reaching 86% with students finding the module intellectually stimulating and engaging.

Keywords: Flipping the Jigsaw, Flipped classroom, Jigsaw Strategy, Collaborative and Cooperative Learning, Teaching strategies, innovative and creative teaching

Introduction

Entrepreneurship plays a significant role across the globe impacting at individual, economical and societal levels. Its rapid growth and evolution over the past fifty years has been capturing the attention amongst others of governments, policy makers and scholars. The past decades have seen rising importance of entrepreneurship education in view of encouraging venture and value creation as well as obtaining intrapreneurial skills that equip the workforce for employment (EntreComp 2016). Investing in entrepreneurship education yields high returns (British Council 2019), and it is no surprise that there has been rapid growth in entrepreneurship education at a global level (Neck and Green, 2011, Solomon and Fernald 2014), with country-specific demands being fuelled by national government policies. The UK has seen a rising demand for business courses the recent years (HESA 2019), and increasing interest in entrepreneurship related courses.

The discipline of entrepreneurship is a wide a varying field of study ranging from venture creation to growth and expansion, creativity and innovation, to finance and strategic processes. In the context of the UK, teaching in this field is underpinned by 'About, For and Through' entrepreneurship (QAA, 2018). Entrepreneurship undergraduate degree programmes often require both practical and theory-based learning and a range of pedagogies are used to deliver education in this field. However, the past years have seen pressure on higher education institutions in being 'responsive to learners needs' and to provide engaging pedagogies to the new generation of student/learner clientele across the academic disciplines. In order to gain and retain students universities are faced with challenges of making their teaching creative and innovative with focus on increasing student engagement and satisfaction, as well as providing employability skills.

This paper seeks to explore creative and innovative entrepreneurship pedogogy in context of theory-based module (learning 'About' entrepreneurship) which is part of the BA Enterprise and Entrepreneurship course at Coventry University. Students often find theory-based modules challenging due to the acquisition and retention of extensive knowledge that is necessary for the module. In delivering theory content lecturer-led sessions often appear to be the most appropriate, however, these tend to dissuasion students. In order to fully engage students and ensure that learning is taking place it has become crucial to re-address and innovate the teaching strategies in the view of optimising on understanding content, time and space. Furthermore, ensuring that skills such as critical thinking and evaluation and problem solving among others are also evident. To address these challenges, two teaching strategies: Flipped Classroom style and 'Jigsaw Strategy' have been fused to provide an innovative and creative way of teaching the theory-based module. The overall aim in this paper is to coin and advocate 'Flipping the Jigsaw' pedogogy.

Background

The UK's education governing body the QAA (2018) highlights the value of Entrepreneurship Education as providing 'supporting behaviours, attitudes and competencies' that impact the individual learners' in their career and therefore, have a chain effect on adding 'economic, social and cultural value to the UK' (QAA 2018 p2). Along with home students, the UK appears to attract a number of international students on business related programmes. The past five years (2013-2018) have witnessed a high number of students on business and administrative programmes (HESA statistics 2019). Entrepreneurship is now being recognised as a separate area of study from Business courses, although the majority of the time is still placed in the business schools.

Entrepreneurship courses at the International Centre of Transformational Entrepreneurship place focus on making their teaching creative and innovative through a range of styles, however, the theory-based module still appears to be challenging for students. The module 'Introduction to Entrepreneurship Theory' takes place in semester one for first year students. Although, both lecturer-led and student-centred teaching styles are evident, students find the module to challenging in terms of too much content to learn, understand and apply in the time period. This has often resulted in loss of interest and disengagement in sessions. Therefore, the rationale behind this study was to create an innovative pedogogy that would maximise on time, content and space, as well as incorporated employability skills.

Literature review

Entrepreneurship Education

Entrepreneurship education traces back to 1938 in Japan (Mariana, 2015; McMullan and Long 1987) and 1947 in the USA (Mariana 2015). Its evolution has witnessed its multi-dimensional aspects, from providing a knowledge base to businesses processes, opening up mind-sets for creativity and innovation to equipping individuals with necessary tools and techniques for business entry (Fayolle 2013). There have been a chain of definitions emerging over time coupled with the outline of core objectives for entrepreneurship teaching (Solomon 2007, Vesper and McMullan 1998). Terms such as business education, enterprise education and entrepreneurship education have also been used interchangeably in the earlier years, however, more distinctive definitions have now emerged. Although, there are some similarities there are numerous differences, one of the main objectives that differentiates business education and entrepreneurship education is the generation and rapidity of how to 'exploit business opportunities as well as a wide range of activities for business entry' for the latter (Solomon 2007, Vesper and McMullan 1998). Entrepreneurship education has a number of purposes, including the transfer of knowledge creation processes, cognitive knowledge, venture creation, the ability to discover new opportunities (Wahid et al 2017, Mwasalwiba, 2010)). Gibbs (2002) highlights three key objectives for entrepreneurship education; developing an understanding of entrepreneurship, creating and developing an entrepreneurial mind-set and venture creation and operation (Gibbs 2002). In terms of teaching strategies Fayolle (2013) emphasised that focus is often placed on active pedagogies, however, there is a lack of research in regards to 'adequacy between methods used and audience specificities and methods and contents, methods and institutional constraints (culture, time, space and resources)' (Fayolle 2013 p.696).

There are a number of studies that highlight the categories of entrepreneurship education (about, for and through). Learning 'about' entrepreneurship places focus on building a knowledge base about entrepreneurship (Mäkimurto-Koivumaaa and Belt 2016), the 'For' places emphasis on preparation for students to act as entrepreneurs (Johansen and Schanke 2013) the idea is to help students discover what is to be enterprising (QAA, 2018) and the 'through' focuses on being involved in a entrepreneurship through business projects, enterprises or business incubators (Kirby 2002). A range of studies have explored various perspectives of these elements (Jamieson 1984, Henry et al 2005 Herrmann et al 2008). Politis (2008) highlighted that that entrepreneurial activities via formal training and education do not have a strong impact on entrepreneurial knowledge development. Jack and Anderson (1999) highlight that students are required to have knowledge and theories of entrepreneurship and the ability to combine them with practice in order to become reflective practitioners. In order to create effective learners the responsibility rests on teaching styles that draw out the passion for engaging in learning.

Programme and course delivery can be a challenge for educators as a result of various expectations from students, employers and the university. In that educators need to adhere to course learning objectives and outcomes, placing focus on the educators to implement relevant and adequate teaching in entrepreneurship education (Balan et al, 2018). Skills and knowledge in entrepreneurship can be taught in the right environment and education is key in entrepreneurial development of individuals (Gibb & Hannon, 2006). Entrepreneurship teaching styles are important contributors in entrepreneurship education. It is vital that entrepreneurship students are exposed to diverse pedagogies in their teaching to develop a range of skills and tools that would enhance their ability in entrepreneurship related activities. This is imperative as students are required to deal with the entire entrepreneurial process (Fayolle, 2010). Other areas of entrepreneurship education place importance of effective teamwork which is often significant in successful entrepreneurship (Balan and Metcalf 2012).

Pedagogies and Methods

Teaching strategies are the 'back bone' of student learning in the university environment. There are an array of teaching methods in reviews of the content of entrepreneurship courses (Kailer, 2009, Balan, et al2018). The decades have seen an evolution in the field of teaching and learning styles and this has been further fuelled by the driving force of technology, therefore, reshaping the teaching and learning environment of the education sector.

Historically, teaching was associated predominately with lecturer-led styles as this was considered the most relevant and adequate way to deliver content and for students obtain and retain knowledge. Inspired by the constructivist learning theory, there has over the recent decades been the emergence of the learner-centred approaches (Beaten et al 2016). Within the learner-centred pedagogy framework are the cooperative and collaborative learning styles. Collaborative and cooperative learning has its similarities and differences, however, overall it involves student participation with teachers/lecturers being facilitators of learning. Collaborative learning enables students to 'provide explanations of their understanding' thereby enhancing their knowledge (Boxtel et al 2000), it further provides a 'powerful effect' for students, especially low achieving students (Lai, 2011). It further provides engagement when problem solving (Dillenbourg et al. 1996, Dillenbourg, 1999). In collaborative learning motivation of learners' increases as a result of each group member striving not just to contribute to the group but attain their personal goal via group success (Johnson & Johnson, 1989, 1994; Slavin, 1995). This type of learning also provides the opportunity for group members to maximise their efforts as they work part of a team, thereby away from the individual competitiveness. Cooperative learning is also recognised for its engagement, and further for it 'cognitive, social and affective outcomes' (Slavin, 1995 in Ghaith, 2003). The jigsaw strategy is a cooperative learning technique introduced by Elliot Aronson in 1971 (Adam 2013). The strategy positions the students as viewing one another as resources and not competitors (Mengduo and Xialoling 2010, Holliday 2002).

The jigsaw technique involves dividing a task in order for the learners to work on the assigned part individually in class and then come together to bring the knowledge of their assigned work to share. This method is recognised for having a number of positive outcomes, including student achievement, improvements in self-esteem, interactive engagement, and building of relationships. It promotes students' motivation in learning as well as the development of interpersonal skills and enrich students' achievements (Marhamah & Mulyadi, 2013). However, the jigsaw strategy is limited as it requires the entire task to be taken in the class session and therefore limits the student in terms of time to reflect on their own learning individually. Furthermore, the student is

under pressure to complete the assigned individual task in order to move to the cooperative working element of the strategy.

The shifting of learning environments has also become popular in the teaching and learning arena. In particular the flipped classroom instructional strategy has received much attention in higher education circles (Milman 2012). Flipped classroom is not a new concept with earlier recording dating back to the 1800s, where General Sylvanus Thayer adopted it in the US military for engineering students to self-source material prior to class sessions, thereby freeing up class time for critical thinking and problem solving (Moffett 2015). In a flipped classroom the class-based roles are inverted, the class lecture is assigned to homework and class time is then utilised for more active learning. There are many advantages to flipped classroom and learning, these include learner-educator interaction (Bergmann et al, 2012), the opportunity to maximise time, and provide individualised education (Johnson 2013). Flipped classroom and learning process involves leaners to source their own material or are provided with material to review before class session. It provides the learners with flexibility of going through the material (Butt 2014), and once in class it allows lecturer-student interaction. Studies have demonstrated an improvement in student self-direction and responsibility (Bergmann et al 2012). However, learners do need to be self-motivated (Moffett 2015) and course materials often has to be remodelled (Wagner et al 2013). The flipped classroom strategy has limitations as students work individually on their task outside classroom time and therefore there is no scope to share the knowledge with peers.

Student learning experience has become a key part of the teaching process and contributes to student engagement and satisfaction. The importance of class participation is also aligned to this, therefore, asking questions, participating in discussions and activities and offering opinions' (Fuchs 2014) are becoming even more significant. Teaching strategies that involve engaging students in activities and discussions, opportunities of questioning are crucial to ensure that learning it taking place in the most effective way. Over the years innovative ways of teaching have been created to fit subject and discipline specific pedagogies and ensuring that the needs of diverse learners are met. The Flipped classroom and the Jigsaw strategy are effective contributors to this, however, strategies benefit from further enhancements and by fusing and combining pedagogies for single tasks provide re-enforcements to learning and teaching.

Methodology

The purpose of this study was to combine two teaching strategies –the Flipped classroom and the Jigsaw strategy in the context of theory-based modules in entrepreneurship education. Both pedagogies have been practiced independently previously across academic disciplines, however, there remains a research gap in fusing/hybridising teaching strategies in order to maximise on time, space, content and full student engagement, whilst also providing employability skills. This paper aims to coin and advocate a pedogogy 'Flipping the Jigsaw' in the context of entrepreneurship education.

The study is based on 'Introduction to Entrepreneurship Theory' module which is part of the BA Enterprise and Entrepreneurship course. The module is scheduled in semester one for first year students. The semester is made up of 11 weeks, with 2hours twice a week of face to face sessions, as well as 200 self-study hours as per module requirements. The module is a crucial element of the course as provides a foundation in terms of theoretical underpinnings of entrepreneurship across modules. The module consists of two components to the final assessment (written literature review and a 2 hour examination). The sample size is 25 students from diverse background based on race, culture and religion, geographical locations and pre-entry qualifications.

Methods, data collection and analysis process

The methodology of this study is three-hold: Practice-based (practice-led), action research and partly observational research. Practice-led research 'gives rise to new concepts in generation of original knowledge' (Candy, 2006). This study aims to advocate flipping the jigsaw strategy in the context of theory based modules. Action research was deployed for its relevance due to contributing to creating new knowledge and improvements in real-life practical problems (Elden and Chisholm, 1993; Mckay and Marshall, 2001). Here the focus remains on challenges and problems of learning experienced by the students. Both methods bring together the matter of practice and finding solutions and making improvements in a practice based environment. The author's role in this research takes the form of a facilitator and lecturer. The study also partly draws on the

observational approach it becomes necessary for the lecturer to observe the class dynamics in relations to learning.

Narrative research approach was adopted as it studies 'human beings experiences of the world and narratives are drawn from the story telling (Gudmundsdottir, 2001). There is a tendency to use narrative research in education practice and experience studies. Open-ended questions were targeted at the class as a whole, students expressed their experiences of the task, learning and the teaching strategy at the end of the session and the narratives were recorded in field-note book. The Practice-based and action based elements provided other opportunities, such as collaboration between the researcher and the research subjects (Meon, 2006), this provided further opportunity to play out the strategy and record the impacts. The data is reliable as it is retrieved as part of the practice-led research and is obtained under conditions of 'live' classes. Observation method allowed body language of students to be observed during the class. Finally the student survey was used as it is module specific and provides an overall outcome of the module.

Flipping the Jigsaw: Process

The process involved:

1. In class (Stage 1): Divide the students into groups of 3-4s (known as the homework group). Each homework group is asked to explore the topic of the week through sources (journal articles, books, etc). Members in each homework group must read the same piece of work, but different from other homework groups. Lecturer provides instruction for notes to be made and brought to next class session.

2. Outside class (Stage 2) : The homework reading is completed individually away from class. Students to make notes on key points on their piece of work.

3. Back in Class (Stage 3) : Returning to the class students will compare the notes within their homework group/s. No more than 10-15mins allocated for this part of the task. The homework group will then split and join new group/s (the aim is to ensure that no two members are permitted to be together in the new group/s).

4. Stage 4 - Within their split groups, each member will share knowledge of their piece of work (e.g journal article etc) and vice versa. Once the knowledge is shared a discussion of the topic and its perspectives can be evaluated/ critiqued/ debated within the new group (15-20 mins for this task).

5. Stage 5 - Having completed point 4 above the individual member will then move to another new group/s and repeat the process until all members have been subjected to others' expertise knowledge of their paper.

Findings and Discussion

Findings highlighted a number of interesting outcomes. Stage 1- For the individual task students emphasised difficulty in academic reading highlighting *'it was intense and confusing to understand'*, *'Its hard to understand what it meant because I couldn't understand some of the words used'*. The unfamiliarity of academic terminology was challenging and problematic for some of them. However, *'making notes for homework helped, because to make notes you need to have understand'*. For most the note making process for homework helped with the understanding.

Findings for the class task (Stage 2) also had some interesting outcomes. Observation by lecturer showed some students appeared at ease and contentedly took out their notes, whilst others appeared unenthusiastic and reluctant. However, being with their homework group seemed to have put them at ease. When questioned about the 10min task (Stage 3) with homework group students had mixed views. Students pointed out that *'its good because what I didn't understand when I was reading alone was made clear when we were discussing the paper'.* Others pointed out *'they didn't do the reading and it was just us two'*. Despite the drawback here, advantage was gained for the non-reader (non-reading for further tasks is strongly discouraged) as the task provided an opportunity for the work of the two members been shared, and therefore, knowledge was passed over.

Findings for group rotation stage (Stage 4) suggested that students had become more comfortable in discussing the topic of their paper as they rotated to different home groups *'it was easier because I have already talked*

about it'. It was also emphasised that '*listening to others and the way they discussed helped me to think of what I missed out in my paper'*. Each rotation provided further consolidation, and gaps identified in their self-reflection.

The five stage process of 'Flipping the Jigsaw' combines the individual learning task to cooperative learning by the sharing of knowledge between members. The 'flipped' is played out when providing the students to source the topic of the week and come to class with preparation and knowledge of the assigned work. The Jigsaw strategy takes action from stage 2 and has a two-fold element in that the homework group initially comes together to discuss source (critiquing and evaluating and briefly) and then s further splitting to new group/s and consolidation of the work is evident.

The findings suggested that despite the difficulty for some of the students in comprehending the literature initially during the homework task (flipped element), making the notes to brief and discuss the same literature with members of their homework group helped in the learning of the content. The jigsaw strategy provided the opportunity of critiquing and evaluating the literature, and members debated the concepts from the literature and their application. Students also come with personal knowledge and when observing the groups interacting and discussing, it was apparent that relevant cultural and background knowledge was brought into discussions in terms of real-life scenarios.

When lecturer questioned about the impact of the teaching, it was highlighted that '*it's good because we come with knowledge on one piece of work but leave but leave with more'*. Furthermore, '*the debating of the topic was good because we saw different perspectives of the same concepts and their applications in different countries and businesses'*. This suggested that learning was taking place and the debating was consolidating it. In terms of the student survey the results showed an increase from 70% to 86% in relation to finding the class session 'intellectually stimulating and engaging'.

The pedogogy adds value in terms of contributing to students' cognitive learning, critical thinking and evaluation skills. Students have both individual and group responsibility therefore, developing self-management and task management skills. Observation of students during the activity made evident that self-esteem was boosted. Culturally and racially diverse groups benefited from sharing knowledge especially country-specific (Adams, 2013). Students had the opportunity to reflect on their own learning and raise any questions. Debating the topic provided further enhancements of mastering the knowledge. Cooperative activity allowed relationships to be enhance and therefore contributing to team building skills. However, it was not without challenges as those who appeared less motivated often contributed very little, this was a drawback. Peer-led sessions created a shared learning experience. The pedagogy allowed lecturer-student time to be increased, therefore optimising time and space. Learning had become central in the session rather just delivery of content through lecturer-led. The session provided an opportunity for the facilitator to give formative on-going feedback. The added advantage was that all students were involved. The only drawback was the students had to be committed to the task, this was addressed in the initial weeks by monitoring the students to ensure that they were completing their share of the work.

The philosophy behind this pedogogy is to aim to provide the opportunity for students to gain expertise over a topic, whilst being subjected to others' expertise through cooperative learning. Furthermore, the opportunity to develop and enhance additional skills, such as critical thinking, evaluating, debating, team building and time management, all become part of the overall learning.

Limitations and Further Research
There were some methodological limitations. The study was limited by a small sample size. As a practice-based and action research it was problematic for the lecturer to record narratives whilst facilitating the activity and therefore. Less motivated students were always challenging. For future research it may be an idea to implement technology in terms make the pre class notes via virtual learning forum.

Conclusion
Entrepreneurship Education's importance and necessity in the context of individual, societal and economic development, has continued to have policy implications, and therefore has driven demand for entrepreneurship education. Higher Education institutions over the past decade have witnessed much change, especially in terms of ensuring good student experience, a key part of which is that learning is taking place throughout and in creative and innovative ways. Educational policy guidelines (QAA, 2018) place emphasis on being 'responsive' to the learners' needs, especially taking into account the diverse student clientele. In keeping with creative and

innovative ways of teaching and learning - the focus of this paper has been to address the learning needs of entrepreneurship students at Coventry University In order to optimise on content, time, and space, 'Flipping the Jigsaw' pedogogy has been implemented and has yielded interesting outcomes. Overall findings demonstrated the development and enhancement a range of skills: critical thinking and evaluation, problem solving, team building, time management, discussion and debating.

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