

# Active entrepreneurship education and the impact on approaches to learning: Mixed methods evidence from a six-year study into one entrepreneurship educator's classroom

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## **Abstract:**

Taking an active and experiential approach to teaching is often assumed to be the best way to promote learning. However, the empirical evidence to support this assertion in entrepreneurship education is inconclusive, and current practice suggests that delivery in higher education is still quite passive and traditional. This six-year, mixed method study sets out to demonstrate that, in a final-year International Entrepreneurship module at a UK university mapped through the lens of 'about', 'for' and 'through' entrepreneurship, a more innovative, active, experiential and constructively aligned approach to teaching, learning and assessment impacts positively on students' deep and surface approaches to learning. Students viewed the module as significantly more active than passive and the level of deep learning was significantly greater than the level of surface learning. Additionally, the

more active approach was significantly correlated to increased deep learning and reduced surface learning. Students highlighted the active teaching approach and the creation of videos for a local company as part of the authentic assessment as catalysts for deeper learning approaches. The study provides empirical evidence that active entrepreneurship education has a positive impact on student approaches to learning.

**Keywords:**

Entrepreneurship education, active learning, experiential learning, approaches to learning, deep learning, surface learning

One of the more persistent entrenched beliefs and ‘taken for granted’ assumptions in entrepreneurship education (EE) is that active, constructivist, experiential learning approaches are better than passive, behaviourist, knowledge-transmission ones, and will result in improved learning and outcomes. This view is widely expressed in the EE literature (Deakins and Freel, 1998; Cope and Watts, 2000; Rae and Carswell, 2000; Rideout and Gray, 2013; Martin et al., 2013; Lackéus, 2015; Morris and Liguori, 2016; Nabi et al., 2017; Neck and Corbett, 2018; Jones et al., 2019). In their review of the impact of EE in higher education, Nabi et al. state that ‘EE ... has a strong bias towards experiential pedagogy’ (2017, p.292) whilst Neck and Corbett argue that ‘adult learners engage in active learning to solve real problems in real environments that are relevant to them. The connection to EE is obvious’ (2018, p.17).

However, despite the desire that active entrepreneurship education should be preferred, this approach does not appear to be borne out in practice by the evidence of EE as it is delivered in higher education. Reviews acknowledge that creating a business plan, case studies and lectures are still the dominant pedagogical methods, and that the current situation is still heavily influenced by a more traditional, didactic, passive delivery, focusing on knowledge accumulation, rather than by more

active, experiential approaches (Solomon et al., 2002; Pittaway et al., 2009; Mwasalwiba, 2010; Penaluna et al., 2012; Pittaway and Edwards, 2012; Bae et al., 2014). Rideout and Gray (2013) confirm that ‘today’s teaching methods are still overly reliant on ... lectures and case studies, with perhaps a few guest speakers thrown in’ (p.322), although they also suggest ‘a general consensus is developing that more multifaceted constructivist models work better for certain populations but this is just speculation’ (p.348). Pittaway and Edwards conclude that ‘Despite a widespread desire to promote and develop innovative forms of entrepreneurship education, it is quite evident from this study that current educational practice remains fairly traditional’ (2012, p.792). Hence, the rhetoric of more active approaches seems to be trumped by a more passive pedagogical reality in current EE delivery, although much of this evidence concentrates on business school contexts (Penaluna and Penaluna, 2009) and US, UK and European studies (Blenker et al., 2014; van Ewijk, 2018). A meta-analysis of the wider active learning literature synthesized 89 empirical studies comparing experiential versus traditional pedagogies, and concluded that ‘students experienced superior learning outcomes when experiential pedagogies were employed’ (Burch et al., 2019, p.239). However, none of these studies concerned EE and the evidence from within the discipline is inconclusive (Pittaway and Cope, 2007; Rideout and Gray, 2013; Bae et al., 2014; Scott et al., 2015; Nabi et al., 2017). These cited authors call for more research using theory and impact measures from the wider education literature to provide such evidence, and this present study answers that call.

### **Entrepreneurship Education Pedagogy**

A critique of EE studies is that there is often insufficient pedagogical detail to determine whether a more active or more passive teaching approach has been taken (Martin et al., 2013; van Ewijk, 2018), although the EE literature suggests two possible models to help detail the pedagogy employed. The UK Quality Assurance Agency guidance on enterprise and entrepreneurship education (QAA, 2018), developed from earlier guidelines (QAA, 2012), draws on the work of Jamieson (1984) to suggest learning categorizations as either ‘about’, ‘for’ or ‘through’ entrepreneurship, and that these distinctions can help clarify learning and assessment strategies. ‘About’ courses ‘draw upon a more

traditional pedagogy involving lectures and set texts to explore theoretical underpinnings' (QAA, 2018, p.14), whereas 'for' courses 'focus on creating an enterprising approach, aiming to help students discover what it is to be enterprising, as well as offering insights into being an entrepreneur... [and] are normally delivered via experiential learning' (QAA, 2018, p.18). 'Through' courses 'focus on developing the entrepreneurial capabilities of the student and normally involve learning through doing, reflecting on experiences and drawing on theory' (QAA, 2018, p.18). However, mapping or evaluation of learning through the lens of these categories is limited (Kakouris and Liargovas, 2020). Additionally, little consideration is given to the differing roles of the educator, who may at times not deliver teaching (i.e. pedagogy), but encourage self-directed learning (i.e. andragogy) or negotiate learning (i.e. heutagogy). Moreover, moving from dependency on the educator towards autonomy of thought (Bacigalupo et al., 2016), distinctions between pedagogy, andragogy and heutagogy (Jones et al., 2019) enable the educator to facilitate learning in a manner appropriate to the needs of the learner at a given time.

Nabi et al. (2017) offer an alternative approach based on Bechar and Gregoire's (2005) archetypical higher education teaching models of supply, demand and competence. The supply model is a passive, behaviourist approach which highlights the transmission and reproduction of knowledge through lectures and reading, whereas the demand model involves 'personalized meaning through participation in terms of exploration, discussion and experimentation' (Nabi et al., 2017, p.279). The competence model focuses on 'active problem solving in real life situations' (p.279) and, along with the demand model, is a constructivist approach to EE (Löbler, 2006) where 'learning involves actively participating in the construction of new understanding' (Nabi et al., 2017, p.280). It can be seen that 'about' courses and the supply model are similar, 'for' courses and the demand model are similar, and 'through' courses and the competence model are similar, although these neglect the nuanced role of the educator. Both QAA (2018) and Nabi et al. (2017) suggest that different models can be combined (e.g. about-for, supply-demand or demand-competence).

Lackeus (2015) reviewed the wider education literature and its relation to EE, and argued that constructivist education had much in common with the wider progressive education concept (Dewey, 1938). He also claimed that such learning in EE, whether described as constructivist or progressive,

promoted deeper learning. Drawing on the work of Vygotsky and colleagues, Lackéus suggests student activity is better than passivity, because:

‘human activity leads to two main outcomes; “externalization of activity into artifacts” (Miettinen, 2001, p.299) and “internalization of activity and gradual formation of mental actions”, i.e. construction of new mental abilities (Arievitch and Haenen, 2005, p.159). Here, [i.e. in EE] externalization is the resulting value creation and internalization is the resulting deep learning.’ (2015, p.28)

Macht and Ball (2016) also claim that authentic experiential learning-by-doing results in deep learning and supports student learning outcomes. Aluthgama-Baduge suggests that ‘active participation of [EE] students can engage them in a deep learning approach’ (2017, p.318) whilst not engaging with this active approach may lead to surface learning. These authors assert that, in EE, deep learning results from more active, experiential, constructivist approaches in which the educator has heightened awareness of their differing roles, whilst surface learning will develop from more traditional, passive, behaviourist approaches. However, there has been little empirical research in EE which has measured deep and surface approaches to learning to substantiate this claim. The present study aims to investigate whether teaching that results in more active, experiential EE leads to deeper approaches to learning and/or reduced surface approaches to learning for higher education students.

### **Deep and Surface Approaches to Learning**

The concept of deep and surface approaches to learning derives from the seminal studies of Marton and Saljo (1976a, 1976b) on how students processed information and the levels of understanding that were reached. The authors asked students to read and answer questions on an academic article, but found two qualitatively different approaches dependent on the student’s intention. As Marton and Saljo state:

‘the main difference we found in the process of learning concerned whether the students *focused on the text itself or on what the text was about: the author’s intention, the main point, the conclusion to be drawn*’ [emphasis in original] (1997, p.43).

Those students who focused on the text itself did not try to understand but rather to memorise in preparation for answering the questions – they took a surface approach. The students who focused on what the text was about took a deeper approach and ‘seemed to see themselves as creators of knowledge who had to use their capabilities ... and come up with their own ideas’ (Marton and Saljo, 1997, p.43). Subsequent studies have shown that surface approaches are characterized by minimal engagement (often through rote learning), doing only sufficient to complete a specific task, not seeing meaning or value in the task or how it links to other activities. Students adopting surface approaches tend to have difficulty in reflecting or applying any skills developed in other areas. By contrast, deep approaches to learning are characterized by engaging appropriately with the intention to understand, constructing personal meaning through relating new content to existing knowledge and experience, and being able to reflect. Deep approaches help students apply learning in new situations, and create value for themselves and others (Prosser and Trigwell, 1999; Ramsden, 2003; Entwistle; 2009; Biggs and Tang, 2011).

Biggs’s 3P model of teaching and learning (Biggs, 1989; 1993) highlights that both student factors and teaching context determine the approach to learning adopted, and that these will all influence the learning outcomes achieved. The approach a student takes to their learning is not a fixed and immutable characteristic, but is instead dependent on the student’s context or their perception of the context (Laurillard, 1979; Ramsden, 2003). This is demonstrated in practice by Kember et al. (2008) and Moon et al. (2013). So, whilst deep and surface approaches are not characteristics of the student, they are ‘strongly related to the quality of the student’s learning outcome’ (Prosser and Trigwell, 1999, p.3). Ramsden (2003) maintains that deeper approaches are related to higher-quality outcomes, better grades and are more enjoyable, whilst surface approaches are dissatisfying for the student and are associated with poorer outcomes.

Little research has been conducted on deep and surface learning in EE contexts to investigate any potential relationships between approaches to learning and more or less active pedagogy. Moon et al. (2013) provide limited evidence that deep rather than surface approaches tended to be adopted in two first-year undergraduate enterprise modules and that more active teaching methods such as live case studies and questioning appeared to be more effective in promoting deeper learning approaches. However, the use of lecture slides, whilst the most popular teaching method investigated, tended to lead to more surface approaches to learning. These results echo the wider education literature (Bligh, 1998). Limitations of Moon et al.'s (2013) study were the cross-sectional approach during a single year, the low number of students and the lack of any associated qualitative data. The present study applies the wider education literature in an EE context (van Ewijk, 2018), focusing on the level of activity experienced, the differences between deep and surface learning and the associations between these variables in a single EE context over several years. The following hypotheses are anticipated (Biggs and Tang, 2011):

- H<sub>1</sub>: There is no significant difference between levels of activity experienced and equally distributed levels of passive and active learning.
- H<sub>2</sub>: There is no significant difference between deep and surface approaches to learning.
- H<sub>3</sub>: There is no significant correlation between deep approaches to learning and levels of activity experienced.
- H<sub>4</sub>: There is no significant correlation between surface approaches to learning and levels of activity experienced.

### **The International Entrepreneurship Educator's Classroom**

*Active, Applied and Constructively Aligned*

The University of Derby – whose motto is ‘Experientia Docet’ (‘Experience teaches’) – is a UK, post-92 higher education institution<sup>1</sup> with a focus on applied, real-world learning for its students.

International Entrepreneurship is a 20-credit optional module studied by final-year, undergraduate business students. In 2012, the first author took over as module leader, moving the teaching and assessment towards a more active, experiential and constructivist EE approach as suggested by initial QAA guidance (2012), with the second author acting as internal moderator and the third as external examiner. The pragmatic objective was twofold: (i) to get the students to do something, rather than report on what others had done, and (ii) to promote a deep learning approach.

EE was defined in the module as ‘the development and application of an enterprising mindset and skills in the specific contexts of setting up a new venture, developing and growing an existing business, or designing an entrepreneurial organization’ (QAA, 2012, p.8) and the focus was a live brief to help develop and grow an existing local, small business through international expansion. The principles of constructive alignment (Biggs and Tang, 2011) were also applied so that undertaking the teaching, learning and assessment activities enacted the module learning outcomes. These were structured around selecting, applying and critically evaluating appropriate international entrepreneurship models, frameworks and theories, and then reflecting on the experience and learning. Macht and Ball (2016) suggest that constructive alignment leads to deeper learning, especially if active, experiential learning and authentic assessments are adopted.

### *Assessment*

The module assessment was changed from a text-based essay about international entrepreneurship that used past case studies to an active, experiential learning approach that used real-life emerging situations. This authentic assessment (Macht and Ball, 2016) was based on a live brief of developing an international market entry strategy for a local small business. The entrepreneur or company owner came in to launch the assignment, describing their organization, its products/services and its current markets. There was also an interactive question-and-answer session with the students about

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<sup>1</sup> That is, together with various other colleges and polytechnics, it was granted university status in 1992.

entrepreneurial life. Different local companies were used in each of the six years considered by this research.

The assignment involved the students researching the appropriate market/sector, the competitors, and potential regions or countries which the company could enter, and then synthesizing the information to decide on which were in their opinion the best two countries to enter: one inside and one outside the European Union (EU). They also had to decide on an appropriate market entry approach and a marketing strategy for those countries. Therefore, the students had to select, justify and apply appropriate international entrepreneurship frameworks in a real-life situation, and then reflect on their learning (i.e. enact the learning outcomes). Additionally, they were given the choice to work on their own, in pairs or in groups of three.

An innovative assessment feature was the required creation of a 10-minute video in which the students explained and justified their country, market entry and marketing strategy decisions. This could be a live video presentation, a screencast, an animation or another creative approach taken by the students and was worth 50% of the module mark. When first introduced in 2013, no other module in the Business School had video creation as part of an assignment. This again was in keeping with QAA (2012) guidelines, which suggested a move away from written communication towards a wider multimedia approach. The videos were the externalization of activity as artifacts (Lackéus, 2015), and were creating value for others; in this case the entrepreneurs, as the best videos went back to the companies for their use. The internalization of activity was the resulting deep learning which, in this module, was measured.

Students also completed a 1,500-word critical evaluation and reflection report on the process they had undertaken. This accounted for the remaining 50% of their mark and allowed them to reflect on their personal perspective of the assessment and to determine where they had found difficulties or failed in the process, and what they could learn for the future.

### *Teaching*

The schedule of sessions for International Entrepreneurship across the 12-week teaching semester is given in Table 1. The weekly curriculum was developed to apply the principles of the initial QAA

guidance (2012), both in terms of themes and delivery. Each of the seven QAA themes to develop entrepreneurial capability were covered at least twice during the semester, and entrepreneurial effectiveness was demonstrated through an active learning delivery using authentic, real-world activities, innovation and multimedia communication.

Table 1 about here

Delivery throughout the six-year period under consideration was via weekly two-hour, interactive lectures for all students, typically taking place in a tiered lecture theatre, and then two-hour, smaller group seminars (typically 20–25 students) in traditional classrooms, where the material was applied through a variety of active discussions, experiential research exercises and group presentations which were open to tutor and peer review and feedback. The lectures were interactive in that they incorporated videos, activities, quizzes, questioning, discussion and online polls so that the mode of delivery changed every 15–20 minutes, which helped maintain students' concentration (Bligh, 1998). Additionally, each session started with a review of the activities and formative feedback from the previous seminar to reinforce what had been learned. The last lecture was a flipped video summary of the module.

Seminars in weeks 1 to 4 were for applying appropriate models and frameworks to the wider international entrepreneurship context. These approaches would be useful when students attempted their assignment. The first session also introduced deep and surface learning to the students. Seminars during the middle of the semester were developed around a formative authentic assessment exercise which used a 'cut-down' version of a previous year's assignment. Thus, students practised creating presentations and videos in a similar context, but for a different subject, to their own assignment which allowed for tutor and peer formative feedback during the sessions (Black and Wiliam, 1998). The latter seminars were for developing their assessment coursework, applying the feedback they had received and preparing the video and the critical evaluation and reflection report.

In 2017/18, the QAA improved and enhanced its guidance for enterprise and entrepreneurship education. As the module was aligned to the initial QAA (2012) guidelines, it directly informed the revision as it was considered an example of best practice. The updated QAA (2018) guidelines were then subsequently used to classify and map each module session, with 19% containing elements

classified as ‘about’ entrepreneurship, 47% as ‘for’ and 34% as ‘through’. Therefore, 81% of the teaching and learning activities were more active, experiential and constructivist, which exceeds Morris and Liguori’s suggestion that ‘a large percentage (perhaps as much as 60 percent) of the [entrepreneurship] education program should center on experiential learning’ (2016, p.xix).

Applying the classification of Nabi et al. (2017), there are elements of a supply model pedagogy (e.g. somewhat passive lectures, critical analysis), demand model pedagogy (e.g. active learning, subjective experience, reflection) and competence model pedagogy (e.g. authentic real-world activities, presentations, multimedia video creation). However, as 81% are constructivist approaches, the module is a predominantly demand–competence hybrid model pedagogy. Mapping the weekly curriculum against QAA (2018) and/or Nabi et al. (2017) provides a simple but robust approach to classify EE (van Ewijk, 2018). This also demonstrates the need for the educator to adjust their role in order to facilitate learning in a manner appropriate to the needs of the learner at a given time (Jones et al., 2019).

## **Research Methodology**

A convergent, mixed methods research design which combined dominant quantitative and supporting qualitative approaches was adopted for the study (Johnson and Onwuegbuzie, 2004; Creswell and Plano-Clark, 2018). This equates to QUAN + qual = compare results for greater understanding (Morse, 1991) as, pragmatically, the study used data that were already embedded in the module design. The advantage of mixed methods is that the complementary strengths of each helps to negate the weaknesses of the other, or of using only one method (Blenker et al., 2014) and so a more complete, triangulated understanding of the issue is obtained (Teddlie and Tashakkori, 2003). Hence, it has ‘the potential to increase the validity, depth, richness and creativity of entrepreneurship education research’ (Blenker et al., 2014, p.707).

During the last session of the module, students’ deep and surface approaches to learning were voluntarily measured using the 20-item Revised Two Factor Study Process Questionnaire (R-SPQ-2F) (Biggs et al., 2001). This instrument has 10 statements relating to deep approaches and 10 to surface

approaches that students rated as applying to themselves during the module (1 = never/rarely to 5 = always/almost always). Items were then summed and averaged. Students were also asked to determine their overall perceived level of activity during the module on a 7-point scale ranging from very passive to very active. This was to provide a simple measure of the students' own perception of the level of activity of their educational context (Laurillard, 1979; Ramsden, 2003). The level of deep or surface learning was thus partially a response to that perceived context. Analysis of these data to review hypotheses H<sub>1</sub> to H<sub>4</sub> was through non-parametric tests as the data obtained were ordinal. Qualitative data, which were used in the study to help explain the quantitative data, were obtained through the open comments of anonymous institutional module evaluation questionnaires that were also voluntarily completed by students during the last session of the module (Blenker et al., 2014; van Ewijk, 2018). Students were asked what was especially good about the module and what could be improved. The comments were analysed through thematic analysis (Braun and Clarke, 2006) by the first author and the number of comments within each theme was also determined. The second author reviewed a sample of 50% of the comments and agreed with the themes developed.

## **Results and Discussion**

Over the six-year period from 2012/13 to 2017/18, 384 students enrolled on the International Entrepreneurship module and of these 172 completed the R-SPQ-2F (a response rate of 44.8%). The results and analysis from hypotheses H<sub>1</sub> to H<sub>4</sub> are given in Table 2.

Table 2 about here

The students' perceived level of activity was analysed through a chi-square test of the 7-point activity scale. This resulted in a chi-square statistic of 80.9 with five degrees of freedom which was significant at the 0.1% level. Hence, H<sub>1</sub> was rejected and we can conclude that the level of activity was not equally distributed across the activity scale. Out of 172 students, 129 (75%) perceived the module as being more active than neutral or passive. Hence, as the module more closely followed learning 'for' and 'through' entrepreneurship rather than the more traditional learning 'about'

entrepreneurship (QAA, 2018), the objective of a more active, experiential pedagogy seems to have been achieved.

During the same six-year period, 181 students completed the module evaluation questionnaire (a response rate of 47.1%). The themes developed and the numbers of comments in each theme are given in Table 3. The most prominent ‘especially good’ theme developed was the teaching approach that accounted for 26.6% of the 173 comments. One student described the module as a ‘creative way of teaching’ whilst two others specifically said, ‘It’s a very active module,’ and ‘The seminars are really good as it helps to be more active’. However, using a real company for the ‘unique and challenging assessment’ and developing skills for the future were also prominent themes (14.5% and 12.7% of comments, respectively) which required a more active, experiential approach. For example, one student appreciated that they had a ‘real business to work on and base the assessment on so gives it more of a real-world experience feel’. Hence, the active, experiential approach using real-life situations (Nabi et al., 2017; QAA, 2018) seems also to have been recognised by the students.

Table 3 about here

The most prominent ‘improvement’ theme developed was ‘nothing’ with 29.0% of the 93 comments. However, the second most prominent theme concerned the desire for more support and time to practise, with 22.6% of the comments. This resulted in formative video feedback being created for students, including examples from previous assignments (Hattie and Timperley, 2007). Additional support on critical evaluation and reflection was provided, with exemplars being discussed and short anonymous reflection pieces written in class for peer and tutor feedback using post-it notes. These constructivist approaches to EE (Löbler, 2006) have been added to the more recent module iterations following the research.

The difference between the levels of deep and surface learning across the six-year period was analysed through a Wilcoxon signed ranks test for related samples (as deep and surface learning results from the same students were being compared). The level of deep learning was significantly greater than the level of surface learning at the 0.1% level. Hence, hypothesis  $H_2$  was rejected, which provides similar but stronger evidence to that of Moon et al. (2013). The rejection of  $H_1$  and  $H_2$

demonstrates that the pedagogical aim of providing an active EE module which encourages a deep approach to learning whilst trying to avoid a surface approach appears to have been achieved.

This was exemplified by one student who suggested that the module ‘encouraged me to work hard and learn to develop my skills’ and another who stated that it ‘engages the class more than I’m used to at uni’. Other students described the module as ‘engaging’ and mentioned the ‘creative assignment’ of producing a video for a real company. These attributes seemed to act as a catalyst for deep learning, as suggested by Lackéus (2015) and Biggs and Tang (2011). One student specifically said ‘It’s easy to get deep into EE,’ whilst another suggested:

‘Overall the module ... was very clear, and developed a classroom scenario where it encouraged personal development and progression. Showed us the different rooms and facilities without giving us the keys to the mansion so to speak.’

Spearman rank-order correlation coefficients were used to determine associations between deep or surface learning and the perceived level of activity during the module. The correlation coefficient for deep learning and level of activity was 0.310, which was significant at the 0.1% level, whilst for surface learning and level of activity, the correlation was  $-0.198$ , which was significant at the 1% level. Hence, hypotheses  $H_3$  and  $H_4$  are rejected and there is strong evidence of an association between perceived level of activity and both deep and surface learning (Biggs and Tang, 2011). These results would seem to support the view that a more active, experiential approach to EE, using real-world authentic assessment, as suggested by QAA (2018), Nabi et al. (2017), Macht and Ball (2016) and others, corresponds to improved learning – in this case, an increased level of deep learning and a reduced level of surface learning. As Lackéus (2015) suggests, the more active, experiential and authentic creation of value for others (i.e. video artifacts for external companies) seems to trigger higher levels of deep learning. However, further research is necessary to establish the degree of causality.

Students described the module as ‘interesting, interactive and useful’ and ‘very interesting, focuses on real-world scenarios and applies learning to after uni’. Another thought that it taught students ‘to not only thrive but evaluate opportunities within differing countries’. These comments

demonstrate that the desired combination of the active, experiential teaching approach, developing student interest through doing ‘an assignment on a real company!’, and recognizing the added value of undertaking the module for the student’s future was achieved. All these activities help promote deep learning, reduce surface learning and exemplify the association between level of activity and approaches to learning (Ramsden, 2003, Entwistle 2009; Biggs and Tang, 2011; Lackeus, 2015). The adoption of a more active approach seems to have developed deep learning more strongly than reducing surface learning, although associations being significant at the 0.1% and 1% level respectively suggests that increased activity has an effect on both enhancing deep learning and reducing surface learning. Therefore, relatively small increases in activity can help students to start working at a higher cognitive level (Biggs and Tang, 2011). Although evident in this EE context, more research is necessary to determine whether this finding can be extended to other entrepreneurial activities, and other education contexts. For example, different types of students (e.g. male vs female, higher-achieving vs lower-achieving, business vs non-business, entrepreneurial family background vs non-entrepreneurial family background, etc.) may perceive the level of activity differently based on their prior knowledge, abilities or expectations (Biggs, 1993). Hence, they may adopt different deep or surface approaches to their learning and correlations may be different for these sub-cohorts. Alternatively, investigations across different types of EE modules (e.g. prescribed vs optional, first-year vs final-year vs postgraduate, face-to-face vs online delivery) may reveal different associations based on the students’ maturity, their length of time at the institution, their motivation, their engagement with feedback or their metacognitive or reflective skills (Biggs and Tang, 2011). This knowledge will thus help the entrepreneurship educator take the most appropriate classroom approach for a particular set of students (Jones et al., 2019).

## **Conclusion**

This mixed methods study of a single entrepreneurship teaching context over a six-year period has four implications for entrepreneurship education practitioners and researchers. Firstly, higher levels of activity have been shown to significantly correlate with an increased deep learning approach and a

reduced surface learning approach (Biggs and Tang, 2011). This would imply that adopting the guidance of the QAA (2018), Nabi et al. (2017), Macht and Ball (2016), Lackéus (2015) and others with regard to taking a more active, experiential approach using authentic assessment, so that students do not just learn ‘about’ entrepreneurship but rather learn ‘for’ and ‘through’ entrepreneurship, would lead to better outcomes and greater impact for them. In this way, they should be able to better apply their learning to other entrepreneurial situations and this should enhance their enterprising skills, attributes, behaviours and competences.

Secondly, analysing and mapping the curriculum through the lens of ‘about’, ‘for’ and ‘through’ entrepreneurship (QAA, 2018) and/or supply, demand or competence models (Nabi et al., 2017) are recommended to EE practitioners as a simple first step to review EE course curricula in a detailed and comparable way (van Ewijk, 2018). This will allow identification of areas where appropriate, constructively aligned activity can be included (Biggs and Tang, 2011), where the educator can adjust their role to facilitate learning (Jones et al., 2019) and where current EE practice can move beyond the more traditional, passive delivery (Pittaway and Edwards, 2012).

Thirdly, this study has demonstrated that mixed methods research in EE is easily achievable, especially if planned, embedded and conducted within the module curriculum (Blenker et al., 2014; van Ewijk, 2018). Combining quantitative and qualitative aspects through data triangulation can help to explain both ‘what works’ and how or why this is so.

Lastly, as this module was aligned to the initial QAA (2012) guidelines, the results were used to inform the development and enhancement of those guidelines (QAA, 2018). Explaining ‘what works’ in the ‘entrepreneurship educator’s classroom’ can thus benefit the sector and demonstrates the importance of the feedback of EE practice in updating and improving policy and theory.

There are limitations to this research, such as the potential self-report bias, non-response bias and the subjective nature of students attributing the level of activity across the module. However, the study provides empirical evidence of how EE has developed student learning through an active teaching approach, the creation of videos for a real company as part of an authentic assessment and the development of appropriate future skills. The evidence suggests that an increased level of activity is significantly associated with an increase in deep learning and a reduction in surface learning.

Additional research is necessary to further substantiate the strength of these relationships, but it can be seen that active entrepreneurship education does have a positive impact on approaches to learning.

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| Week | Interactive lecture content                         | Curriculum link to QAA (2012) themes                    | Curriculum link to QAA (2012) delivery   | A, F or T | Seminar/workshop exercises   | Curriculum link to QAA (2012) themes               | Curriculum link to QAA (2012) delivery   | A, F or T |
|------|---|---|--|-----------|--|--|--|-----------|
| 1    | Introduction  | All   | Develop student self-reliance & resilience   | A/F/T     | Reflection, including on their own deep & surface approaches to learning | Reflection & action                                | Subjective experience  | A/F/T     |
| 2    | Team quiz to demonstrate what students know already | Implementation of ideas through leadership & management | Active learning  | A/F/T     | Evaluate international market entry decisions                            | Opportunity recognition & evaluation               |  | F         |
| 3    | Impact of globalization                             | Communication & strategy skills                         |  | A         | Critically evaluate globalization & implications                         | Decision making with critical analysis & judgement | Active learning through simulated activities                                   | F         |
| 4    | Impact of culture                                   | Interpersonal skills                                    | Somewhat passive learning (though also using videos, discussion, activities & interactive quizzes) | A         | Apply theory to determine cultural impact                                | Interpersonal skills                               |  | F         |
| 5    | Entrepreneurship & international entrepreneurship   | All   |  | A/F       | Identify & present an entrepreneurial opportunity                        | Opportunity recognition & evaluation               | Authentic, real-world activities through innovation & multimedia communication | F/T       |
| 6    | International market screening & selection          | Decision making with critical analysis & judgement      |  | F         | Select & present a new international market for the opportunity          | Decision making with critical analysis & judgement |  | F/T       |

**Table 1. International Entrepreneurship curriculum mapping to ‘about’, ‘for’ and ‘through’ entrepreneurship.**



|    |   |  |  |       |   |   |  |     |
|----|---|--|--|-------|---|---|--|-----|
| 7  | Assignment launch by entrepreneur including Q&A | All  | Authentic, real-world activities   | F/T   | Video creation software & techniques  | Communication & strategy skills                         | Authentic, real-world activities through innovation & multimedia communication | F/T |
| 8  | International market entry                      | Opportunity recognition & evaluation               |  | F     | Create & present short practice video for the international market          | Creativity & innovation                                 |  | T   |
| 9  | International marketing                         | Creativity & innovation                            | Somewhat passive learning (though also using videos, discussion, activities & interactive quizzes) | F     | Discuss formative feedback given on practice videos                         | Reflection & action                                     | Personal perspectives  | T   |
| 10 | Entrepreneurial & online strategies             | Communication & strategy skills                    |  | F     | Critically evaluate (i) journal article & (ii) academic model               | Decision making with critical analysis & judgement      | Abstract problems  | F/T |
| 11 | Financial implications                          | Decision making with critical analysis & judgement |  | F     | Reflect on their own development including peer feedback                    | Reflection & action                                     | Subjective experience & learn from failure                                     | T   |
| 12 | Summary   | All  | Emerging real-world situations   | A/F/T | Assignment workshop, including deep & surface learning, & module evaluation | Implementation of ideas through leadership & management | Authentic activities with multimedia   | T   |

*Note:* A, F, T – ‘about’, ‘for’, ‘through’.

| <b>Hypothesis</b>  | <b>N</b> | <b>Non-parametric test</b>                  | <b>Statistic</b> | <b>Decision</b> |
|--|----------|---|------------------|-----------------|
| H <sub>1</sub> : Level of activity equally distributed from passive to active  | 172      | Chi-square                                  | 80.9***          | Reject          |
| H <sub>2</sub> : No difference in deep and surface approaches to learning      | 172      | Wilcoxon signed ranks                       | 10.46***         | Reject          |
| H <sub>3</sub> : No association between deep learning and level of activity    | 172      | Spearman rank-order correlation coefficient | 0.310***         | Reject          |
| H <sub>4</sub> : No association between surface learning and level of activity | 172      | Spearman rank-order correlation coefficient | -0.198**         | Reject          |

**Table 2. Hypotheses results and analysis.**

*Note:* \*\*  $p < 0.01$ ;  $p < ***0.001$ .

**Table 3. Thematic analysis.**

| <b>Themes: what was especially good about the module?</b> | <b>No of comments</b> | <b>% of comments</b> |
|---|-----------------------|----------------------|
| Teaching approach   | 46                    | 26.6%                |
| Use of a real company in assessment                       | 25                    | 14.5%                |
| Skills good for the future                                | 22                    | 12.7%                |
| Content/knowledge   | 20                    | 11.6%                |
| Confidence in creating and presenting videos              | 14                    | 8.1%                 |
| Formative exercise and associated feedback                | 12                    | 6.9%                 |
| Others (12 themes, < 5% of comments each)                 | 34                    | 19.7%                |
| Total   | 173                   | 100.0%               |

  

| <b>Themes: what could be improved about the module?</b> |    |        |
|---|----|--------|
| Nothing   | 27 | 29.0%  |
| More support and time to practice                       | 21 | 22.6%  |
| Release assignment earlier                              | 9  | 9.7%   |
| Reduce formative assessment                             | 8  | 8.6%   |
| More focus on entrepreneurship                          | 7  | 7.5%   |
| Others (12 themes, < 5% of comments each)               | 21 | 22.6%  |
| Total   | 93 | 100.0% |