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BRIDGING THEORY TO PRACTICE THROUGH A FLIPPED CLASSROOM APPROACH IN AN ENTREPRENEURSHIP COURSE

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Introduction

While entrepreneurship education (EE) finds itself middle in a debate of whether entrepreneurship can be taught or not, it has more relevance today than ever before (Neck & Greene, 2011). At the University of Pretoria, the focus is on starting up businesses, self-employment and creating employment. While the curriculum is set and allows little foray, lecturers strive to improve the quality of teaching and learning, making the best use of the available infrastructure, class-time and technology. There is a lively debate on the merits of teaching traditional lecture-based classes versus using technology for teaching, and how they can be improved, blended, hybridised or flipped. In the developed world with ubiquitous access to technology and internet, flipped classroom teaching has become synonymous with blended learning and very much the norm. While video lectures are not new, the affordances of videos, screencasts, audio lectures and the like can add real value to a flipped classroom. It is in this arena that a third-year course in entrepreneurship was flipped in 2015, and reported in this article. The study investigates both the instruction method as well as the application of theory through tutorials.

This study focuses on how to apply theory to practice in a representative way in an attempt to simulate a real business experience. According to Sams and Bergmann (2013) lecturing may not be the best use of in-class face to face time. Therefore, this study explores the use of teacher created videos that students could watch in their own time at home or on campus and then come to class to practice what they have learned, thus flipping the classroom. Students watched the videos outside class to master the theoretical component of the course. This was followed by a tutorial in class to apply the theory in an attempt to engage students in higher-order thinking. Tutorials used case studies that linked to a real life business that provided students with an opportunity to experience, to apply theory in practice and receive feedback as they developed new abilities. It also allowed the lecturer to check understanding and to explain unclear interpretation. Therefore, the purpose of the study was to investigate student perceptions of the benefits of using videos and tutorials to link theory to practice.

Literature review

Entrepreneurship education

Entrepreneurship education as an academic and practice field is booming (Neck & Greene, 2011). As in any field of research with a practical application, there is a need to reflect on the effectiveness thereof (Fayolle, 2013). Furthermore a study on the effect of classroom-based entrepreneurship courses indicates that the entrepreneurial intention of students was not significantly affected (Støren, 2014). This testifies to the need for different pedagogies. The constantly changing world and business environment have important consequences for entrepreneurship education, entrepreneurial learnings and competencies, needed to effectively function in modern societies (le Roux, 2015). In devising EE programmes, it is important to also reflect on the target population and educational objectives, given that one size does not fit all (Rideout & Gray, 2013). As Fayolle (2013) points out the beneficiary of EE is the society in which it is embedded and practitioners need to consider which pedagogies adequately meet the social and economic needs of all the stakeholders involved. The realm between entrepreneurship activities and national economic development is inseparable. Tang, Lai, Chou and Chen (2014) further argue that EE can elevate national entrepreneurship standards and the innovative abilities of individuals. Such education requires development of innovative entrepreneurial competencies, thus moving away from only knowing facts to a way of thinking and acting (Gibb, 1993). For the purpose of this study an attempt is made to close the gap between what we teach and what entrepreneurs do. The prime challenge in EE is understanding the theory and then connecting theory to practice. Case studies are believed to be effective in achieving the above.

Flipped classroom

While lecturers claim personal connection and communication taking place in class and students expect traditional lectures at University, using class-time for lecturing is strongly contested (Albó, Hernández-Leo, Barcelo, & Sanabria-Russo, 2015; Bishop & Verleger, 2013; Breivik, 2015; Sams & Bergmann, 2013), as teachers claim that they do not make the best use of the time with students physically in class. Students in lectures adopt a passive attitude to learning (Kellogg, 2013), while there is mostly very little interaction among students or between lecturer and students. Teachers are not able to differentiate instruction during a lecture according to student progress levels (Sams & Bergmann, 2013). While some students find it hard to focus their attention in class, lectures seldom foster learning or higher-order thinking (Breivik, 2015; Sams & Bergmann, 2013). The time is ripe for flipping the classroom. We follow the restricted definition of a flipped classroom where video lectures (and not only prescribed readings) are provided for outside class learning, and problem solving activities in class, with no lecturing taking place in classtime (Bishop & Verleger, 2013).

Instructional lectures featuring large amounts of conceptual content translate successfully to rich media formats including videos, online presentations or interactive content, replacing class-delivered lectures (Albó et al., 2015). Criticism against videos includes possibilities of being impersonal and overrated learning-tools, that compare poorly with lectures that

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supposedly contain interaction (Breivik, 2015). Ash (2012) relates more criticism against video teaching, as it is only a better version of undesirable teacher-centred and lecture-based pedagogy. Flipped classrooms may fail due to boring video lectures that inevitably lead to poor class attendance (Kellogg, 2013). Breivik's research, however, found that students quickly adapted to video lectures and liked the flexibility. Videos can provide effective overviews or illustrative examples showcasing diverse situations and cases (Breivik, 2015; Maina & Alsina, 2015). Students benefitted from taking notes without missing lecture content, while some found it easier to focus attention on videos than in class. They also watched at convenient times and re-watched videos to prepare for exams (Breivik, 2015), eventually spending more time on the subject than otherwise. Pre-reading from textbooks for homework rarely happens (Kellogg, 2013). Students learnt better from videos through listening to the subject being "talked", that made understanding easier (Breivik, 2015). Being able to view the video multiple times, as well as pause and rewind, also aided understanding the content, particularly for students who struggled with the language (Sams & Bergmann, 2013). Video therefore provides multiple representations of information accommodating diverse learners who prefer visuals, audio or text (Sams & Bergmann, 2013).

Students prefer doing interactive activities in class over lectures (Bishop & Verleger, 2013). Therefore the active content engagement traditionally reserved for homework is moved to class, joined by active, problem-based learning activities founded upon a constructivist ideology (Albó et al., 2015). There they solve problems, and apply their knowledge in new contexts (Kellogg, 2013). The classroom becomes a student-centred environment, where they complete tasks at higher-order cognitive levels like apply, analyse, evaluate and create (Sams & Bergmann, 2013). If the difficulty level of the in-class problems is too high, it meets resistance from both students and faculty (Kellogg, 2013). Li et al. (2015) emphasise the vital importance of instructor-student interaction in flipped courses. Claims of classes being depersonalised by the videos, were refuted by Breivik (2015), whose students developed a close relationship with their teacher and reported that it was easier for them to ask questions during the "workshops". In class, when relieved from lecturing, a teacher can spend more time with individual students, including those who struggle, while other students have the freedom to learn independently (Tucker, 2012).

Course redesign for flipping is hard work, but doing it well improves the quality of teaching as well as learning (Tucker, 2012). Well-executed flipped classrooms are better structured and organised and lead to better learning outcomes, independent learning and critical thinking (Atef, 2015; Breivik, 2015; Kellogg, 2013). Students have more autonomy in a flipped classroom, feel in control of their learning as they follow their own pace (Breivik, 2015; Li et al., 2015). Learner-centred flipped classes also facilitate active interactions among learners (Atef, 2015).

The research question was informed by Sams and Bergman (2013): "Flipped learning is not about how to use videos in your lessons. It's about how to best use your inclass time with students". Because the critical importance of the classroom component, where activities should be designed to address student-centred learning (Bishop & Verleger, 2013; p.3), this

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research focused equally on the students' perceived value of both video and classroom components. This leads to the formulating of the research question namely: How do students experience the different components of the technology-enhanced flipped classroom in entrepreneurship?

Context and teaching intervention

The study was done in a third year B Com Entrepreneurship course in the faculty of Economic and Management Sciences, Department of Business Management at the University of Pretoria. Thirty students enrolled for the 14 weeks' duration course that was facilitated and managed by a senior lecturer. The following topics were covered in the course: The model for business growth; dynamics of growth; managing the venture life cycle; growth strategies and methods; business turnaround and financing growth. Each topic was covered in one or more chapters in the prescribed textbook, and as such identified. Videos were professionally recorded and consisted of the lecturer outlining the topic, explaining the concepts in the topic with the help of PowerPoint slides, graphs and relevant visual material that were cut into view. Concepts were also illustrated with examples from the business world. Videos were published as unlisted content in YouTube, and then shared by embedding in the university's Blackboard Learn CMS (course management system). The accompanying PowerPoint slides were uploaded into the CMS and released simultaneously with the videos a week before the planned tutorial on each topic.

Three contact sessions of fifty minutes per week were assigned to the course of which two adjacent slots allowed for application of theory. The third time-slot was earmarked for self-study of the videos on campus for the benefit of students with inadequate access to ICT. No formal face-to-face lectures took place. Contact time was used for a tutorial where case studies of on-going businesses were analysed, and students first formulated answers individually, discussing answers in a small group to decide on the best answer to report. The groups presented their answers to the peers, ensuing in class discussion on the given answers and feedback from the lecturer to fill in the gaps and clarify uncertainties. After every unit a short written assessment was administered to determine how well students have learned the concepts required and to avoid students falling behind. Thus the activities used in the course were both theoretical and practical with the opportunity to apply theory to practice. After the last videos and practical tutorials, students reflected on their learning.

Research methodology

The research approach in this study was interpretive, using both qualitative and quantitative methodologies. Data were sourced from anonymous written feedback provided by students at the end of the semester. In two questionnaires, students had to rate different characteristics of videos and tutorials using a simple 3-point scale. Those responses were numerically weighted, with 0 for *Not Important*, 1 for *To some extent Important* and 2 for *Very Important*, the weights added and the characteristics sorted accordingly. The questionnaire also contained open-ended questions where students could reflect on how the tutorials or videos helped them. Written feedback was captured electronically and thematically analysed using

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computer-based qualitative analysis software, ATLAS.ti™. The same code set was used in analysis of both questionnaires so that themes could be compared between the two. These findings would ascertain how the course components in the flipped classroom contributed to integrate theory and practice. To ensure transparency and validity in the process, coding was checked by two seasoned academics, resulting in minor re-naming of categories.

Findings and discussion

The findings report the benefits that students perceived they gained from taking part in a flipped class approach, as captured in their reflections and the research questionnaire. The qualitative findings were interpreted using the guidelines of Sams and Bergmann (2013), Ash (2012) and Tucker (2012) to understand perceived benefits in an entrepreneurship classroom. Rating the characteristics of the videos, showed in decreasing order: Having another resource in addition to the textbook (53); View it again to understand better (51); Use for revision (50); View again for deeper insight (48). It showed that videos were highly rated as an additional resource. Almost equally important was the ability to view them more than once whether to understand better, for revision or gaining deeper insight. Many students reported viewing slides more than once, and opening the slides at the same time as watching the video on that topic, which was confirmed from logs in the CMS.

The students also rated the characteristics for the tutorials. The ratings were: Having another opportunity to engage with the content (53); Answer aspects you did not understand (53); Link to theory & real world (52); Wider understanding of topic (52); Learn to think critically (50); Solve problems (48) and an Opportunity to communicate clearly (40). The first four characteristic received a very similar rating, all indicating that most students needed to engage again with the concepts. It is clear that the case study application helped with understanding, allowed for theory to be linked to practice and clarify uncertainties.

Qualitative analysis of the open-ended questions that required reflection on the two teaching modes yielded rich thematic material. The open-ended feedback on the videos and tutorials was coded and the roles of each resource in the flipped classroom were compared.

Table 1: Codes and themes in feedback compared

Theme	Total codes	Codes	Feedback on videos	Feedback on tutorials
Student learning activities	68	Understanding the Content	23	15
		Learning, Repetition, Remember and Own Learning Preferences	29	1
Link Theory, Apply	42	Applied to Real World and critical thinking	12	30
Teaching Resource	31	Summaries, Outline	12	
		Explained, Elaborated	10	
		Supplemental Teaching Resource	9	
Others	8	Assessment, Collaboration	1	7

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It is seen in Table 1 that three main themes surfaced during analysis, with by far the most comments representing value to student learning activities (total of 68 codes). Videos were reported as contributing very strongly to this theme, particularly Understanding the Content (23 codes) as is illustrated in the following quotes:

> *"The videos helped me to understand better and clear misunderstanding"*
>
> *"The videos helped to gain a deeper understanding and insight regarding the content"*
>
> *"The combination of videos and tutorials is a brilliant way to learn, understand and apply theory"*

Videos also prominently added value by enabling independent learning, video being easier to understand, while repetition helped with remembering the content longer and in that way helping learning. The pace of lectures does not suit everybody (Li et al., 2015). The students confirmed that videos made it possible to be more autonomous in their studies, as reported by Ash (2012), that in self-paced flipped classes, previously unchallenged students could fly through the work, while others needed to move slower, while others did not maintain any pace. In this specific entrepreneurship class, all students progressed as planned, because they were third-year students in their last semester before graduation, and aptly motivated. The videos were close to their personal or preferred way of going about learning the work. This is an interesting finding, as some literature describes videos as teacher-centred and representing little more than lecturing in another format (Ash, 2012). The students therefore reported on how videos represented their own learning preferences (13 codes):

> *"The videos gave me the opportunity to work on my own and at my own speed"*
>
> *"It allowed for studying in a more personal way"*
>
> *"It allowed me to view it over and over again, not a once off as a lecture"*

Students also perceived the videos as a useful Teaching Resource and mentioned many of their advantages. The codes indicate that the biggest contribution videos made, was adding organisation through summaries and outlines, while explanations and examples supplemented the other learning material. They were better than a once off lecture, and could be combined with notes and slides. The students reported on the advantages of video as resource as follows:

> *"I don't like to read so listening to the videos and making notes worked better for me"*
>
> *"It explained the work better than the text book and answered all my questions"*

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> *"The videos gave a different way of explaining theory which helped to clear misunderstandings and helped me with interpretation"*

Video lectures are effective for conveying large amounts of content, (Sams & Bergmann, 2013). These findings confirm students' note-taking behaviour while viewing videos (Breivik, 2015), their lack of enthusiasm for reading, and understanding the content better due to the explanations in the videos (Sams & Bergmann, 2013). These videos clearly contributed significantly to the learning, despite being teaching resources that required little active engagement from students. Findings on the videos agree to some extent with Ash (2012) who stresses the need to engage students, for watching the videos does not signify engagement.

In this course viewing the videos was a prerequisite to do the application in the tutorial class, where knowledge gained from the videos was applied to a case study. Feedback on tutorials (Table 1) confirmed that applying knowledge after mastering the content improved understanding, helped the students in the entrepreneurship course to structure their thinking and made it easier to understand. The class became a place to solve problems, advance concepts and collaborate with peers, findings that confirmed the literature (Li et al., 2015; Tucker, 2012). Learning activities included structuring thinking and working through case studies to improve understanding, assumedly through the lively discussions and feedback, that is suggested by references to collaboration (7 codes). The findings confirm literature (Bishop & Verleger, 2013) that proposes that a flipped classroom should promote student-centred active learning activities to do in class. Lively debates on the finer points of the theory often ensued in the tutorials. Students reported on learning within the context of the tutorial as follows:

> *"Helped me to structure my own thinking and better understand the content"*

> *"Helped me to work through the case study on my own and understand the theory better"*

> *"It was easier to understand the work when applied to a case study and then discuss it with the group"*

The most significant contribution that the tutorial classes made, was providing the platform to apply learning theory to the real world, apply to business cases, while examples were reportedly better than the textbook. Applied critical thinking was also attributed to the tutorials. The students reported the applied learning as follows:

> *"It gave practical cases of how to apply the theory to a real business"*

> *"Made the theory more practical, discussing with my friends, using real life business cases and also explained the work in more detail"*

> *"It linked the work to the real world of business and work"*

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These findings clearly affirm Tucker's (2012) suggestion that it is not the teacher-created instructional videos alone, but how they are integrated into an overall approach that makes the difference. The videos greatly improved understanding and learning, as an additional resource was highly valued for structuring content and allowed students to re-visit, revise and study autonomously, while tutorials improved the understanding further, and particularly linked the theory to the real world, providing the key to bridging theory and practice in entrepreneurship.

Conclusions and recommendations

Before a student can bridge from theory to practice, a solid understanding and knowledge of theory is needed. Videos can therefore be regarded as very successful tools to support mastery of theory. Understanding and learning the theory, particularly within students' preferred learning style, all point toward student initiated activity, representing by far the most salient theme in the qualitative analysis. Considering that lecturing is regarded as passive and lecturer-centred, and videos as lectures that have just switched delivery mode, the students in this study reported the value of different independent learning activities taking place in response to watching the videos, suggesting that the videos used in this course were more student-centred than lectures. A seasoned lecturer knows what the difficult concepts are, anticipates the misunderstandings and from experience uses illustrative examples and applications in an organised well-planned, and -executed video. The tutorials were the opportunities where the application of theory in the real world had most value and two-way bridges between theory and practice were built, with understanding improving further. This confirms the superior teaching value of the flipped classroom, particularly when complicated theory has to be understood and applied in practice, which clearly will not happen to any great extent in a classroom lecture. Not only did the flipped classroom provide opportunities to identify knowledge gaps (Li et al., 2015) but also allowed for some lecturer-student interaction, peer-interaction and collaborative learning. Interacting with students while applying their knowledge to a case study helped to clarify, simplify and address confusion but also provided guidance, an opportunity to critically analyse and solve problems while creating an opportunity for deeper learning.

The study has implications for both educators and practitioners. Linking case studies to real business benefit students by exposing them to the world of work and practice. It can be applied across disciplines and is therefore ideally suited in many higher education subject areas. It helps students not only to master theory but also to understand and apply what they have learned in a wider context. The study therefore confirms the notion that education is capable of making a significant contribution to the development of well-rounded individuals ready to enter the world of work.

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