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Active learning in accounting and the impact on student engagement

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Active Learning in Accounting and the Impact on Student Engagement

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Abstract: This paper reports on a range of active learning and online strategies that were introduced into an introductory accounting module. Up until recently the traditional lecture format, where students sit passively and the lecturer delivers the lecture, has been the dominant format in higher education. However, research has shown that formats which provide students with a more active and engaged learning environment result in deeper learning The active learning strategies discussed in this paper were based around an "Active Learning Exercise" where students worked in a cooperative group environment. Before, during and after the "Active Learning Exercise" an additional range of activities and online resources were made available to the students. These additional activities, which promote independent and lifelong learning, include the use of interactive material and cooperative in-class exercises. The additional range of online material included the use of apps, self-test quizzes and video tutorials. The findings indicate that the use of the active learning and online strategies discussed in this paper promoted a supportive classroom environment by increasing student interest and engagement. Both the active learning and online strategies helped create a positive impression on students regarding the quality of teaching.

Keywords: active learning, accounting, online resources, cooperative learning, student engagement

1. Introduction

The purpose of this paper is to present the range of active learning activities that were introduced into an introductory accounting module in the first year of a four year Management Degree programme and to discuss student feedback about the active learning activities and the online resources designed to support them. Active learning was introduced to 1st year Tourism Marketing students. This cohort of students are studying a four-year degree programme that leads to the award of BSc Tourism Marketing.

The introductory accounting module, "Accounting for Tourism", is a core/compulsory module on the degree programme. It is important to note that the Tourism Marketing degree programme is a management degree and not an accounting/finance degree. Therefore, the students enrolled on this module are "non-accounting" students. They are taking the accounting module because it is mandatory. Over the years accounting instructors have noticed that these students have a low level of interest in accounting and in some cases a resistance to accounting. The active learning concept was introduced into this module to try and overcome this lack of interest in and resistance to accounting. Other motivating factors that encouraged instructors were to attempt to engage more with the students, to illustrate the usefulness of accounting in real business situations and to create more interest in the study of accounting.

Currently in the School, the Accounting for Tourism module is delivered across three different programmes over the academic year either in the first or second semester. There is a common exam at the end of each semester which accounts for 60% of the marks for the module. This restricts the amount of change that can be introduced into the module at any one time.

Up until recently the traditional lecture format, where students sit passively and the lecturer delivers the lecture, has been the dominant format in higher education. However, research has shown that formats that provide students with a more active and engaged learning environment result in deeper learning (Fallon et al. 2013). Active learning in education has been the subject of significant research attention for more than a century (Riley and Ward 2017). Basically, active learning refers to activities that are introduced into the classroom. The core element of active learning is students being actively involved and engaged in the learning process (Prince 2004). This involves students "doing things and thinking about what they are doing" (Bonwell and Eisen 1991).

Research across multiple disciplines supports the notion that active participation is effective for deep learning (Peters 2011). Deep learning develops students' abilities to extract greater meaning and then to apply that meaning to other situations and problems (Healy and McCutcheon 2008) while surface learning relies more on

rote memorisation. Active learning helps develop the deep learning skills demanded by modern businesses (Byrne and Flood 2004).

Despite the positive research into active learning, the dominant pedagogy in higher education remains the traditional passive lecture. According to Lambert (2012) inconsistent and disappointing results in some studies continue to raise questions about the true effect of active learning on student performance. Also, lecturers' reluctance to change teaching methods combined with the lack of resources have hindered the introduction of active learning into higher education teaching (Milne and McConnell 2001). There is also the question of perceived student resistance, as some research suggests that accounting students are more likely to prefer the structured, logical and systematic focus offered in passive learning environments (Byrne and Flood 2004).

In this study, the Active Learning approach was centred on an "Active Learning Exercise". The Active Learning Exercise was developed by the author to mimic a real-life business situation (a further description of the "Active Learning Exercise" is included in the Methodology section). The students worked on the Active Learning Exercise in small groups (maximum of 4 per group). Each group received a background scenario (which was the same for all groups) and financial information. The financial information was different for each group. The students worked on the Active Learning Exercise in in class during the semester. Before, during and after the Active Learning Exercise an additional range of activities and online resources were made available to assist the students.

Consistent with prior education literature (Matherly and Burney 2013) feedback about the active learning activities was gathered through a survey that students completed at the end of the semester and after all the activities had been completed.

The findings indicate that the students enjoyed and were engaged with the active learning activities. Moreover, students reported a positive attitude towards the range of online resources made available to them, especially the use of video tutorials. In addition, the activities created a positive impression on the students regarding the quality of teaching.

In the next section of this paper the literature on active learning is reviewed. This is followed by a description of the research methodology, a discussion of the findings and finally a summary of the conclusions.

2. Literature review

Active Learning is a pedagogical approach in which students are actively involved and engaged in the learning process (Brickner and Etter 2008). Active learning, generally described as any instructional method that engages students in the learning process, has been considered as one of the best practices to achieve teaching effectiveness (Gainor et al., 2014).

In many accounting programmes, the lecture format is used extensively in introductory accounting modules. In the lecture-based approach, students engage in passive learning. Typically, the instructor presents questions and then works through the questions and provides solutions (Tan, 2019)

Freeman et al. (2014) created the following consensus definition of active learning: "Active learning engages students in the process of learning through activities and/or discussion in class, as opposed to passively listening to an expert." While traditional learning can be defined as the "continuous exposition by a teacher" (Bligh, 2000). Under this definition, student activity was assumed to be limited to taking notes and/or asking occasional and unprompted questions of the instructor.

In active learning the student, and not the lecturer, is at the centre of the learning process and is engaged in activities. According to Prince (2004) active learning refers to any instructional method that engages students in the learning process through activities that are introduced in the classroom. This is contrasted with traditional instructions where students passively receive information from the lecturer. Gainor et al. (2014) pointed out that discussing a topic can leave more of an impression than reading about it and doing something to demonstrate a topic can leave more of an impression than talking about it.

The development of active learning in accounting gained momentum in the late 1980's when the Accounting Education Change Commission (AECC) was formed with the goal of broadening the curriculum (Healy and McCutcheon 2008). This movement was reflected by other organisations and at around the same time academic research began focusing on deep learning approaches. Research finds that students demonstrate improved outcomes across a wide range of academic measures from being involved in active learning. This growing interest in active learning is supported by researchers such as Michael (2006, p. 164) who states "… active learning works. It should be clear that there are large bodies of evidence from a number of different fields supporting the evidence of active learning".

However, lecturers have been reported as being reluctant to use active learning techniques and to change from the traditional style of teaching. Part of this reluctance to change can be attributed to the extra effort and additional resources required. Other factors include time constraints and a perceived resistance to such methods on behalf of the students. Despite these beliefs there is some evidence that students have responded positively to more interactive teaching methods (Adler and Milne 1997).

In many cases when lecturers are introducing active learning, they make changes for the sake of making changes, without giving enough thought to how effective such changes will be over the long-term (Rebele 2002). Brickner and Etter (2008) suggest that the key to implementing active learning strategies is to keep them simple. They suggest beginning with strategies and assignments that are of short duration and that over time longer and more involved strategies can be introduced.

Group Work/Cooperative Learning

As already noted, some research has found that lecturers may be reluctant to adopt active learning methods. In addition to the issues already noted it is a case that some active learning projects simply cannot be administered with larger classes. One possible way of overcoming this problem is to utilise group work or cooperative learning in large classes (Muroz and Huser, 2008).

Group work or cooperative learning is a subset of active learning in which students work in small groups to maximise individual student learning (D. Johnson, R. Johnson and Smith, 1991). In cooperative learning the focus is on improving individual learning rather than social interaction and teamwork (Prince, 2004).

Unfortunately, there are several issues and disadvantages associated with cooperative learning. Researchers recommend that cooperative learning should be included within regularly scheduled class time. This generally requires a significant amount of additional preparation to alter class plans. It also requires more time in class to cover a topic than it would take in a traditional lecture. Concerns have also been raised about the fact that grades may appear artificially high since the good students will bring up the grades of the poor student (Ravenscroft, 1997).

A problem within group work is the issue of free riding. Free riding is where a non-performing member of the group reaps the benefits of the group work with little or no contribution (Ballantine and McCourt Larres, 2008). A few suggestions are put forward by Brickner and Etter (2008) to discourage free riders. Firstly the groups should be kept small to maximise participation. Secondly the lecturer should walk around the classroom to observe the groups progress and level of participation and finally, selected sections of the work should be included in the final exam.

3. Methodology

There is considerable empirical support for active learning. However, the variety of instructional methods labelled as active learning muddles the issue. Given this variety it is not always clear what is being promoted by broad claims supporting the use of active learning methods. Perhaps it is best, as stated by Prince (2004), to think of active learning as an approach rather than a method. Accordingly, Price (2004) suggests that the core elements of active learning are the introduction of activities into traditional lectures and promoting student engagement.

In this study, the Active Learning approach was centred on an "Active Learning Exercise". The "Accounting for Tourism" module is delivered three hours per week over a 12-week semester. One hour per week was allocated

to the Active Learning Exercise from teaching week two to teaching week ten inclusive. During the Active Learning Exercise, the other two hours were allocated to traditional lectures. The Active Learning Exercise was included within regularly scheduled class time, in line with recommendations for this type of project (Ravenscroft, 1997).

The students worked on the Active Learning Exercise, which consisted of two sections, in groups of four or less. Prior literature on group selection has documented the trade-off among different methods such as self-selection and instructor assigned (Gainor, et al. 2014). In this case self-selection was used because it is simple and convenient.

Each group received a background scenario (which was the same for all groups) and financial information. The financial information was different for each group. The first section, the scenario, outlined the background to the exercise, contained key information and guidelines and set out instructions for the completion and submission of the Active Learning Exercise. The second section contained the financial information. Students received financial statements for a business for the previous two years and a Trial Balance for the end of the current financial year. Based on the scenario and the financial information students needed to calculate some key adjustments such as the closing inventory, depreciation policy and tax rates. When this was completed students could produce the financial statements for the current year.

At this stage students would have financial statements covering three years. They were then required to calculate key ratios and write a report on the performance of the business over the three years. It should be noted that traditional lectures continue for two hours per week during the Active Learning Exercise. Normal lectures were covering the topic "Interpretation of Financial Statements" about one week before students were required to calculate the ratios and write the report for the Active Learning Exercise. Students used the information covered in the lectures to complete the Active Learning Exercise.

The financial section of the "Active Learning Exercise" was developed on and Excel spreadsheet. Using formulae and linkages a range of different financial statement were produced quickly and easily by changing just one or two key figures. Suggested solutions were also produced for use by the instructor. The financial information was generated for the individual groups and distributed by email to each member of the group at the start of the exercise. As a result, the day-to-day running of the Active Learning Exercise became easy and simple, in line with the recommendations of Brickner and Etter (2008).

Students were encouraged to interact with other groups. This created a peer-to-peer teaching environment. Students could share ideas and help each other, but they could not copy as each group had a unique set of financial information. During the Active Learning Exercise, the lecture hour became more student centred rather than teacher focused, with the lecturer taking on the role of facilitator rather than teacher. This is in line with the social constructivist approach where instructors must adapt to the role of facilitator and not lecturer (Bauersfeld, 1995; Piaget, 1971). Whereas a teacher gives a didactic lecture that covers the subject matter, a facilitator helps the learner to get his or her own understanding of the content. In the active learning approach, the emphasis turns away from the instructor and the content and towards the learner.

In cooperative group environments like this, students are more likely to retain information by actively processing it through student interaction (Ravenscourt, 1997). Also, to minimise the incidents of social loafing and reduce the chances of "free-riding" group sizes were kept small (Karau and Williams, 1997; Brickner and Etter, 2008).

Throughout the Active Learning Exercise, support was provided via a virtual learning environment (VLE) or learning management system (LMS). Using this system allows students to engage with the learning material and to construct understanding at their own pace. Before, during and after the Active Learning Exercise an additional range of online resources was made available to assist the students. Some of the resources were created specifically for the exercise (video tutorials) while others were existing resources that were utilised to support students' learning. According to Kaur (2013) this type of approach can assist lecturers cater for the diversity in learners' needs and thus improve student engagement.

One of the key resources was the development of a range of video tutorials. The video tutorials specifically targeted key areas of the Active Learning Exercise and tutorials were made available to the students via the VLE

or LMS. Supporting these tutorials was a series of online self-test quizzes. These self-test quizzes allowed students to test their own knowledge and progress.

During the Active Learning Exercise, use was made of the Socrative App (https://socrative.com/) and the Nearpod App (https://nearpod.com/). The Socrative and Nearpod Apps can help lecturers engage with students and assess the level of their understanding. The Socrative App was used to determine students' understanding of the Active Learning Exercise material as the semester progressed. Lancaster and Read (2013, p.3) highlight the fact that the use of Socrative can create "a real buzz and a purposeful atmosphere" in the classroom, while also highlighting which aspects of different topics were proving troublesome to the students.

The purpose of this paper is to present the range of active learning activities that were introduced into an introductory accounting module in the first year of a four year honours Management Degree and to discuss student feedback about the active learning activities and the online resources designed to support the active learning activities. To achieve this, a questionnaire was designed to capture student feedback on the active learning activities and the online resources. The questionnaire had three sections. Section one asked the students for feedback about the active learning exercise, while section two asked for feedback on the video tutorials. Section three asked for feedback on other activities including the use of apps.

When collecting student feedback concerning the active learning approach a Likert Scale was used. According to Fallon et al. (2013) Likert Scales are a good way to determine student engagement. Four intervals were used with one being the least desirable and four being the most desirable. An even number was selected so that students could not just pick the mid-point or average. It forced them to think a bit more about their selection.

In Section One students completed two separate questions regarding the Active Learning approach and then commented on their experiences with the approach.

The two questions were:

- Question 1: How would you rate the Active Learning Exercise?
- Question 2: Do you feel that you engaged with the Active Learning Exercise?

In Sections Two and Three the students were asked to comment on the video tutorials and other activities, such as the use of apps.

Data were collected by administering the questionnaire to the first-year students studying this module. This was done in line with the University's policy regarding the ethical approval of research. The questionnaire was administered by the lecturer, who is also the author. Students were given 15 minutes to complete the questionnaire. It was distributed in week 12 of a 12-week semester after all students had completed their assessment. Prior to the distribution of the questionnaire students were informed that participation in the survey was anonymous and voluntary. The purpose of the study was explained to the students and they were given assurances that the results would be used only for research purposes.

4. Discussion

The questionnaire was distributed in class in week 12 of a 12-week semester. There were 33 students in attendance on the day the questionnaire was distributed out of a potential 40. Completed questionnaires were received from 33 students. In Section One of the questionnaire students were asked to complete two separate questions regarding the Active Learning approach and then commented on their experiences with the approach.

The two questions were as follows:

- Question 1: How would you rate the Active Learning Exercise?
- Question 2: Do you feel that you engaged with the Active Learning Exercise?

As can be seen from Table 1, when asked to rate the Active Learning Exercise (Question 1) 24 students (74%) either "Liked it" or "Loved it". About 8 students (25%) "Did not really like it" however, it is interesting to note that no students "Really disliked it". One student did not complete Question 1.

When asked to comment on their engagement with the Active Learning Exercise (Question 2) 25 students (76%) either had a "good level of engagement" or were "fully engaged" with the exercise. However, 7 students (21%) reported that they had a low level of engagement with the Exercise while 1 student (3%) reported that they did not engage with the Exercise.

Table 1: Rating questions 1 and 2

Question 1				
How would you rate the Active Learning Exercise (please circle)?				
1	2	3	4	
Really disliked it. Would rather go back to the traditional approach	Did not really like it.	Liked it	Loved it. Felt I gained a lot from it.	
0	8	21	3	32
0%	25%	66%	9%	
Question 2				
Do you feel that you engaged with the Active Learning Exercise (please circle)?				
1	2	3	4	
I did not engage with the Exercise at all.	I had a low level of engagement with the Exercise	I had a good level of engagement with the Exercise	I fully engaged with the Exercise	
1	7	22	3	33
3%	21%	67%	9%	

The students' answers to the two questions in Section One indicate that they rated the Active Learning Exercise highly and that they were engaged with the exercise.

At the end of Section One (Questions 1 & 2) students were given the opportunity to provide open-ended feedback. Of the 33 students who completed the questionnaire 20 provided some type of written feedback. Most of the written feedback was positive and indicated that the Active Learning Exercise facilitated student learning and engagement. Comments such as: "It gives you an opportunity to develop what you have learned in the lecture and see whether you fully understood it" and "I felt that is was a fun way to learn some of the accounting concept, extremely interesting, gets people involved" reinforce the replies to Questions 1 & 2 in Section One.

Despite the positive feedback it is important to note that 8 students did not really like the Active Learning Exercise and 8 students either did not engage with, or had a low level of engagement with, the Active Learning Exercise.

Negative comments from students related to a common problem of group work. One student commented that "It was good. However, I don't think that accounts are group work" while another student commented that "we found it difficult to spread the workload". Another noted that "that certain people would just do most of the work and wouldn't wait for others because they'd take too long".

These comments may reveal an explanation for the 8 students who did not really like the Active Learning Exercise and the 8 students, who either did not engage with, or had a low level of engagement with, the Active Learning Exercise.

As a result of the above feedback and ongoing informal feedback, it is intended to review the formation of groups. According to Ballantine and McCourt Larres (2007) it appears that mixed ability groups are appropriate when used in cooperative accounting group assignment.

In Section Two of the questionnaire students were asked to comment on the video tutorials. The video tutorials proved extremely popular. A total of 30 students (91%) confirmed that they had viewed the video tutorials. All the students that viewed the video tutorials confirmed that they found them extremely beneficial. At the end of

Section Two students were given the opportunity to provide open-ended feedback. There were no negative comments regarding the video tutorials. A couple of typical responses are as follows: "Such a handy resource to have. Allows students to dictate the pace of their learning" and "The videos were so helpful, I got loads of notes and found being able to pause and repeat the videos so handy."

In Section Three of the questionnaire students were asked to comment on the Socrative and Nearpod Apps and other activities. Both the Socrative App and the Nearpod App were positively received with 25 students (75%) responding favourably to their use in class. Typical responses were "Socrative was fun and an educational way of learning terms to do with accounting" and "Socrative and Nearpod – Great learning tools and motivators to learn because they show you what level of material understanding you're at".

The online quizzes were appreciated by the students. Most of the students enjoyed the quizzes and found them useful to test their own knowledge and progress without having to complete a graded assessment.

In addition, it is important to note that the active learning strategies created a positive impression on the students regarding the quality of teaching. The video tutorial had a significant part in creating this positive impression. Many expressed gratitude in having these resources made available to them. Typical comments include "I found them really helpful. Thanks for taking the time to make them" and "They are super helpful" while another student commented "The videos were so helpful, I got loads of notes and found being able to pause and repeat the videos so handy." Ongoing informal feedback from students suggests that they engaged with and enjoyed the learning experience.

5. Conclusion

This paper has discussed the range of active learning and online strategies that were implemented on an Introduction to Accounting module. Several researchers have questioned whether the cost of active learning outweighs the benefits (Gabbin and Ward 2008). The practical costs of implementing active learning strategies need not be prohibitive.

The active learning strategies discussed in this paper did not require course or curriculum revision nor did the active learning strategies demand significant time from other course content. The strategies required similar class time as lectures and were held within scheduled class time as recommended by Ravenscroft (1997).

The author believes that the use of the active learning and online strategies discussed in this paper promoted a supportive classroom environment by increasing student interest and engagement and created a positive impression on the students regarding the effort of the lecture and the quality of teaching. It is intended to run the active learning and online strategies discussed in this paper with equivalent groups of students over the next few semesters. The strategies will be fine-tuned from semester to semester, based on student feedback

As noted by Prince (2004) active learning is not the cure for all educational problems. Nevertheless, there is broad support for the elements most discussed in the educational literature and presented in this paper.

Further follow-up research is planned to explore in more detail the impact of active learning on engagement and student performance.

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