

INNOVATIVE TEACHING IN ACCOUNTING SUBJECTS: ANALYSIS OF THE FLIPPED CLASSROOM

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—Abstract —

Accounting students often have a negative attitude towards the subject and struggle to understand core concepts of accounting standards. A large percentage of accounting students do not prepare for class and homework is either not done or neglected. Many factors contributed to students struggling to prepare for class and complete homework assignments. The flipped classroom approach has grown at a rapid pace and was perceived very successful in many subjects. Little research has been done on the effectiveness of this approach for accounting students.

Videos was created whereby accounting theory was explained and questions with examples were given and explained. All contact sessions were transformed into an active learning environment. During contact sessions, students were provided with questions. Guidance was given with regards to the interpretation of a practical case study. Students had to analyze questions before feedback was provided to them. Contact sessions commenced with easy questions, and progressed to more difficult questions.

Research was conducted in order to determine whether a flipped classroom method could improve the learning experience of accounting students at a higher education institution. The study indicated that students watched the videos before contact sessions, they felt more positive about their performance in accounting and improved their time management. The majority of students that completed the survey preferred the flipped classroom method. It enables students to learn from their own mistakes in class.

Key Words: *Flipped learning, blended learning, accounting, learning approaches, video, higher education, technology-enhanced learning.*

JEL Classification: I23

1. INTRODUCTION

Financial accounting in higher education is a practical subject, which requires the understanding and application of a vast number of complex accounting standards (Van Romburgh, 2014). The class size for an accounting module can range between 100 and 150 students. Students often have a negative attitude towards the subject and struggle to understand core concepts. The traditional method of teaching was used in lectures, also known as the “talk and chalk” lecture method. This method of teaching has left lecturers’ facing a few challenges that needed to be overcome.

According to Gilboy *et al.* (2015), students’ attention declines after 10% in the lecture time and that most students only remember 20% of the material presented. Little learning takes place while the lecturer explains questions and performs calculations, and students merely copy the answers in order to prepare for assessments. The attendance by accounting students for traditional lectures and practical facilitations at university can vary widely from 75% to as little as 25% (Weil *et al.*, 2014), depending on the subject matter for the specific lecture or facilitation class. A large percentage of students do not prepare for class and homework is either not done or neglected. Students were left to complete complex calculations on their own during homework assignments and some students did not complete their tasks.

Language is another factor to consider. Language is seen as a barrier at South African universities, since English is a second or third language to most students (Steenkamp *et al.*, 2009). Furthermore, accounting terminology does not exist in African home languages and translating learning material is often difficult. Students therefor often struggle to comprehend what was required in completing homework, because of the language barrier that exists.

Students commence university with a misconception of what will be expected of them. The South African secondary schooling system makes use of answer sheets in summative assessments, which encourages students to develop the habit of memorizing accounting answers. According to Gabbin (2002), students tend to memorize accounting and subsequently have difficulty applying and understanding accounting core principles. Students lack basic reading competencies and struggle to perform basic accounting calculations (Van Romburgh, 2014). This method of memorizing becomes ineffective as the difficulty level of the subject progresses through the different year levels.

Given the constant juggling between formal lectures and doing practical questions, alternative methods of teaching was explored. The idea was to create videos, explaining the accounting theory by way of easy examples. Many resources were explored to compile these videos, for example, Prezi, smart podium, the Explain Everything-app and document cameras. Prezi is a presentation software tool for presenting ideas on a virtual canvas. Smart podium and the Explain Everything-app is an interactive screen recorder that can be used to make videos. The only preparation needed for classes by students, was to watch the videos before each contact session. The students agreed that they will watch the videos before class and that no extra homework will be given. The applicable videos were uploaded on the Learning Management System (LMS) from which students could access and download the videos at any given time.

Lecture time was changed to an active learning environment, dividing contact sessions into two by commencing with easy questions, and progressing to more difficult questions. During contact sessions, students were provided with practical questions and guidance was given with regards to attempting questions. Students had to read questions and group discussions followed on what the requirements are, the applicable Accounting standard to be used and the necessary calculations that should be done. Students could also get clarity on words that was difficult to translate to the student's home language. Contact sessions gave guidance to students on where to start and what to do. Lecturers helped students with questions and cleared any misconceptions, with the lecturer being actively involved in helping groups of students to solve problems.

The primary objective of this study was to determine whether a changed approach in the method of teaching from a traditional method to a flipped classroom method can have a positive impact on the mastering of accounting by students.

The following research questions have been formulated:

- Can flipped classroom be effective for large classes?
- Can flipped classrooms demonstrate that lecture time can be used more effectively?
- Can a changed approach to flipped classroom guides students to better time management?
- Can flipped classroom change students' perception of Accounting?

2. BACKGROUND

The notion to flip the classroom, was largely initiated by Salman Kahn, founder of the *Khan Academy* which supply free online videos explaining a wide variety of subjects and topics (Roach, 2014). Pioneers in developing the flipped classroom model, Bergmann and Sams (2012), realized they had the opportunity to change the use of classroom time as per the traditional model. The general consensus is that large classes are more suitable for the “talk and chalk” lecture method and there is little scope for change (Char & Collier, 2015). Many factors was considered, such as that each student has unique needs and educators are expected to address these needs (Bergmann & Sams, 2012). Personalization is suggested as a solution, but to personalize for a large class is nearly impossible due to constraints (Bergmann & Sams, 2012). Flipped classroom has often been seen as replacing lectures with videos and lecture time for homework (Kim *et al.*, 2014). There is not a prescribed way to flip a class, it is more a mindset and an ongoing process of improving (Bergmann & Sams, 2012).

Even though there are many definitions on flipped classroom, no consensus on the definition has been agreed upon and basic concepts of this model should be adapted for each learning environment (Bergmann & Sams, 2014). In terms of this study, flipped classroom can be defined as providing students with videos to watch before lectures, to help students prepare for class and lecture time can be used for more interactive and higher-order activities (Kim *et al.*, 2014). According to Bergmann and Sams (2012), the attention was redirected away from the lecturer in lecture time and putting it on the student and learning. This type of instruction guides students with help from the lecturer through more difficult and complex questions (Gilboy *et al.*, 2015).

The flipped classroom method has grown at a rapid pace due to the rapid development in technologies (Bhagat *et al.*, 2016). Research evidence shows the use of flipped classroom has a positive impact in many disciplines, including chemistry, English, mathematics and statistics (Bhagat *et al.*, 2016), however little evidence exist on the impact on Accounting students.

According to Weil *et al.* (2014), there is limited research done on the education methods of Accounting. This paper aims to contribute to this field of studies and evaluates the flipped classroom model in context of an accounting classroom.

3. RESEARCH DESIGN AND METHOD

Research was conducted from 2012 to 2015, at the North West University, Vaal Triangle Campus situated in Vanderbijlpark, in order to determine whether a flipped classroom pedagogy could improve the learning experience of accounting students at a South African university. A mixed method research approach involving the administration of questionnaires to students registered for exit level accounting between 2012 and 2015.

3.1 Sample

Over a four year period, an average of eighty exit-level accounting students participated in the study each year. The research was divided into two semesters for the first year, between a traditional method for the first semester and a flipped classroom method for the second semester. The first semesters was from February to June and a traditional approach was applied. Between July and November a flipped classroom approach was applied. Students completed Survey A and B in the first year of this study, and for the next three years only Survey B.

3.2 Measuring Instruments

At the end of each semester, the standard university lecturer's evaluation, Survey A, was completed by students to evaluate the experience in class for the specific lecturer. This is standard procedure done for all lecturers at the end of each semester.

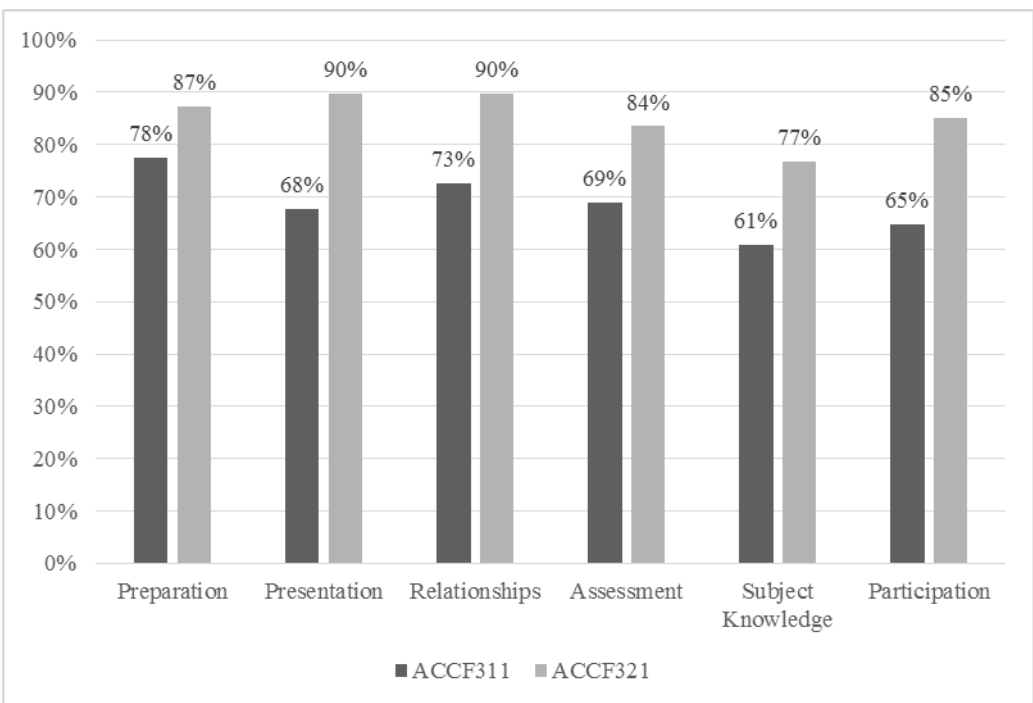
Survey A used a four point Likert scale, ranging from "Strongly disagree," "Disagree," "Agree," to "Strongly Agree." The evaluation was divided into six sections: preparation, presentation, relationships, assessment, subject knowledge and participation. Students evaluated the lecturer on the first five sections whilst the last section, participation was for the student to evaluate their own participation in the subject field.

Survey B used a five point Likert scale, ranging from "Strongly disagree," "Disagree," "Undecided," "Agree," to "Strongly Agree." Survey B was completed by all students registered for the module in 2012, in the second semester in order to determine their attitude towards the change in the teaching approach. Students completed eleven questions for Survey B on LMS, with questions grouped into two main focus areas, the change in teaching method and the videos that was made. Data was analyzed using Microsoft Excel software.

4. FINDINGS AND DISCUSSION

Figure 1 shows the findings in Survey A completed for the first year by students in 2012. These students could compare the two teaching methods lectured by the same lecturer for the two semesters. In the sample the students preferred the flipped classroom to the traditional, talk and chalk method. Interestingly, students evaluated the lecturer's subject knowledge higher in the flipped classroom method. The students participation also increased by the change in teaching method.

Figure-1: Survey A: Comparing the two teaching method for the first year

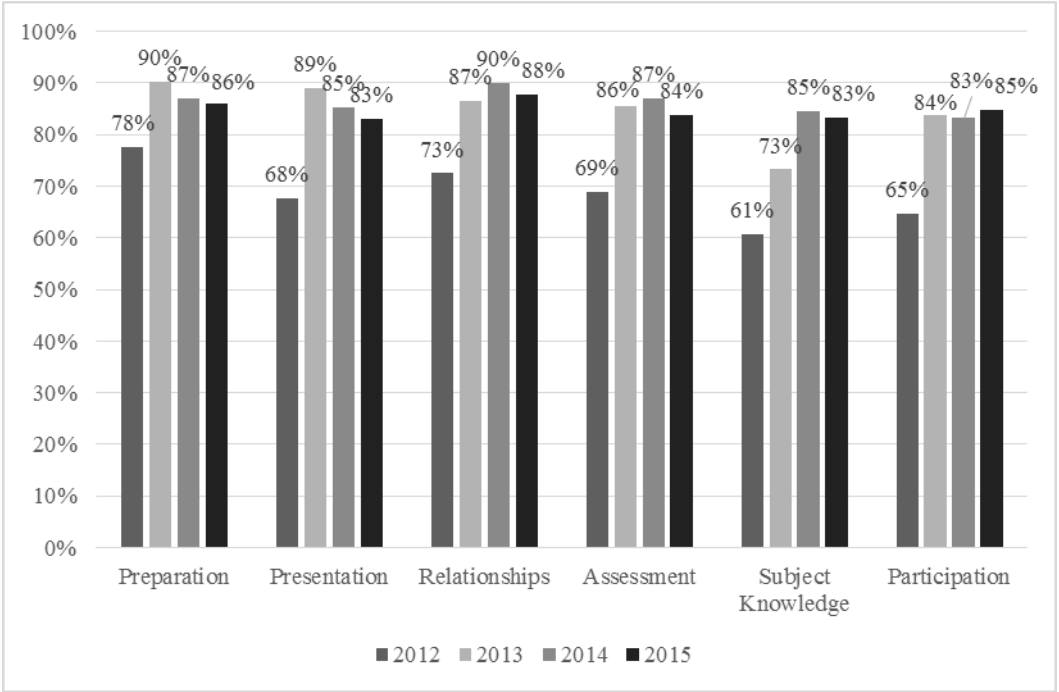


ACCF311 was the module code for the first semester subject and ACCF321 for the second semester. The average evaluation percentage of the lecturer increased with 16%, from 69% for the first semester to 85% for the second semester. The change in presentation increased with 22% to 90%, by changing the method of teaching. The student and lecturer relationship also improved to 90%. Students rated the subject knowledge of the lecturer to have improved from 61% to 77%.

The students' participation towards the subject field increased from 65% to 80%, with an increase of 15%.

Figure 2 shows the findings in Survey A completed for the period 2012 to 2015. The students evaluated the lecturer on a constant level using the flipped classroom method and still higher than when the traditional, talk and chalk method was used.

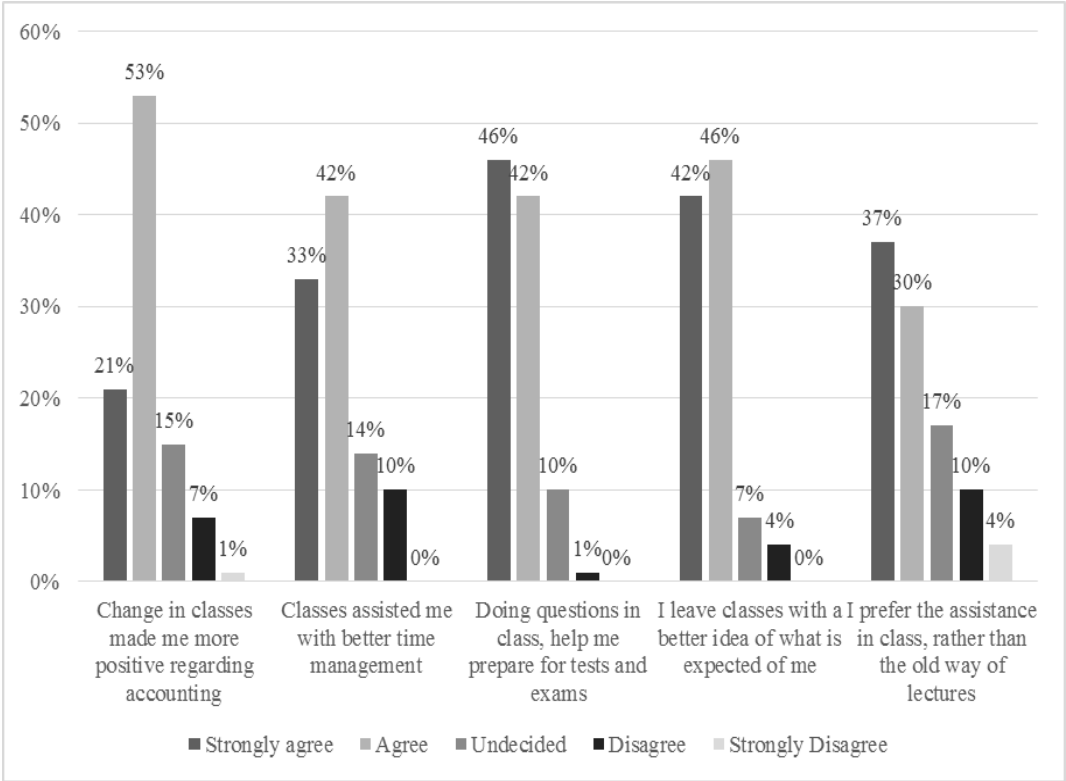
Figure-2: Survey A: Lecturer evaluation for the four year period



Students evaluated lecturer from 2013 to 2015 on average above 80% and students' participation remained constant at above 80%. Figure 2 clearly shows the benefit in the change in teaching method in 2012 to next three years.

Figure 3 shows the findings in Survey B completed for the first year by students in 2012. The students evaluated the change in teaching method. The student's attitude towards accounting became a lot more positive since the change to a flipped classroom approach. Students left classes with a better understanding of the subject matter and the change in teaching method helped them with time management. Students also used the videos for revision purposes.

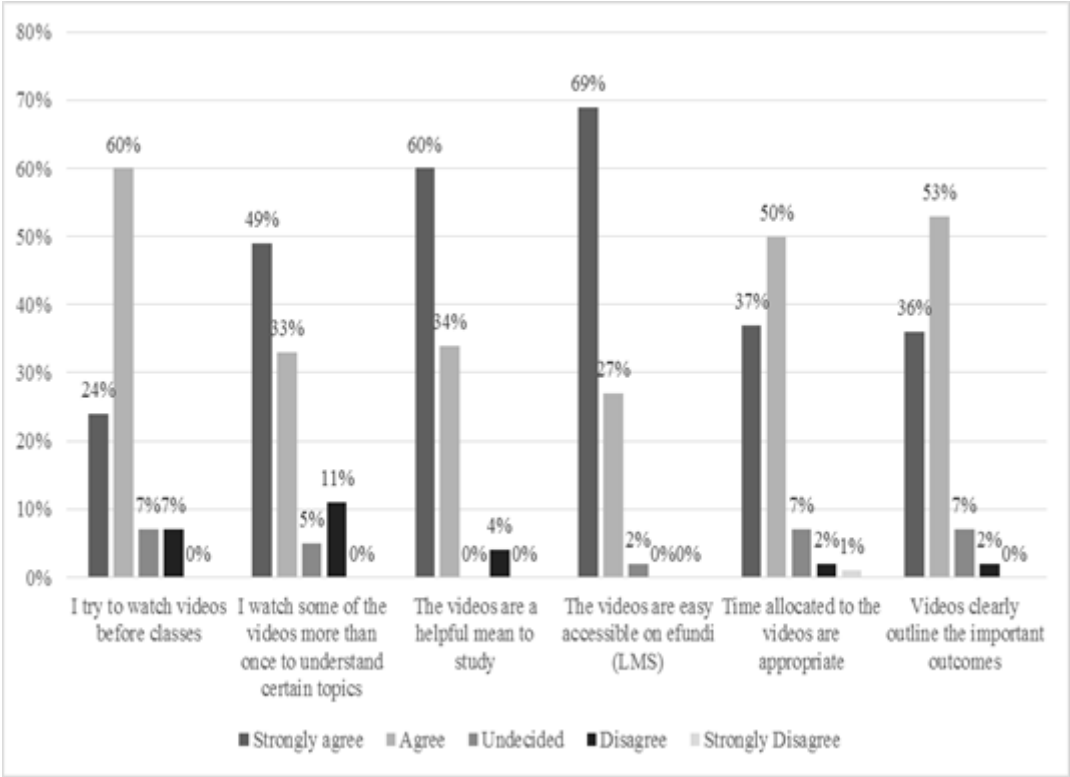
Figure-3: Survey B: Change in teaching method



A total of 74% of students felt more positive about their performance in accounting. Better guidance was given, with 88% of students that had a better idea of what was expected of them. Students felt more comfortable with questions in class and felt better prepared for assessments. The traditional method of teaching was preferred by only 4% of the class. Lastly, 75% indicated that the flipped classroom approach helped them to manage their time better.

Figure 4 shows the findings in Survey B completed for the first year by students in 2012. The students evaluated the videos that was made for the flipped classroom. The videos was well planned and clearly explained the relevant content. Students also used the videos for revision purposes.

Figure-4: Survey B: Feedback on videos made for flipped classroom



The survey indicated that 84% of the students watched the videos before contact sessions. A total of 96% of students indicated that they could easily access the videos. The number of video downloads was also tracked by the LMS, which showed that 75% of students downloaded the videos before class. The divergence between the number that viewed the videos and the number of students that downloaded the video, is due to fact that not all the students completed the Survey and the LMS tracked the whole class. Therefore, the majority of students entered the contact session with a better comprehension of the concepts and had a better idea of what topics will be covered in class.

Students left classes with a better understanding of what is expected of them and how to apply their knowledge. On average, each student downloaded all videos at least twice. Students also watched some of the videos after classes, as revision and preparing for assessments. The student’s participation in class increased in the

first year and remained constant over the next three years in comparison to the traditional method.

5. CONCLUSION AND RECOMMENDATIONS

The change in the teaching approach motivated students to feel positive about accounting and had a positive impact on learning. One of the greatest benefits is that students learn at their own pace, they can pause and rewind, do difficult calculations and they can use the videos for revision again. Students can catch up on missed material and watch the videos multiple times. The videos can also be used for revision purposes to prepare for assessments. Students have their own revision class at their own pace of learning.

The relationship between the lecturer and students improved, and students felt comfortable asking questions in class and making appointments with lecturer for further discussions.

Despite the positivity towards the new teaching method, some downfalls had to be overcome. The research group consisted of an economically diverse group of students. Due to poor economic circumstances, some students could not access the videos from their residence. Fortunately the university made computer rooms available to these students, which enabled them to access the necessary videos. There were also students who did not watch the videos, despite the resources being made available to them. Furthermore, some students struggled with basic computer skills, but attention was given to provide basic training to them. Lecture time should be well planned and making the videos can be very timeously. The language barrier was overcome by defining terms simply, using explanations and comparisons that are practical and linked to students' experiences and culture.

The flipped classroom approach is a powerful tool, which can be used by students to learn in an innovative way without students realizing it. It enables students to learn from their own mistakes. There cannot be one solution fits all method for one classroom and lecturers should be able to adapt to any situation. Students understand digital learning and we are merely speaking their language.

The study was limited only to an exit level module. Further studies should be done on other levels in the subject to validate these findings. This study will be continued and it will be an ongoing process on the development of innovative teaching strategies for accounting students. Future research can be done

comparing student's grades from a traditional approach to a flipped classroom method.

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