USING FLIPPED CLASSROOM APPROACH IN COMPUTERIZED ACCOUNTING EDUCATION[*]

Asst. Prof. Dr. Murat SERÇEMELİ[**]

Asst. Prof. Dr. Nilgün GÜNBAŞ[***]

Asst. Prof. Dr. Özlem BAYDAŞ[****]

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ABSTRACT

This study has explored student experiences in a setting where the "Bank Module," a subject in computerized accounting education, was offered using flipped classroom approach. In this study, one of the qualitative research methods, simple descriptive research method, was utilized. The results of the study show that, the activities increase in-class productivity, help save time and allow students to revise course content at a pace of their choice.

Keywords: Flipped Classroom, Accounting Education, Educational Technology.

JEL Classification: A20, M40, M41.

TERS YÜZ SINIF YAKLAŞIMININ BİLGİSAYARLI MUHASEBE EĞİTİMİNDE KULLANILMASI

ÖZ

Bu çalışmada, bilgisayarlı muhasebe eğitimi konularından birisi olan "Banka Modülü"nün ters yüz sınıf yaklaşımı ile işlenmesi sonucu gerçekleşen öğrenci deneyimleri araştırılmıştır. Çalışmada nitel araştırma yöntemlerinden biri olan basit tanımlayıcı araştırma yöntemi kullanılmıştır. Öğrencilerle yüz yüze görüşmelerden elde edilen veriler, içerik analizi kullanılarak analiz edilmiştir. Çalışmanın sonuçları, faaliyetlerin

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[**] Corresponting Author, Giresun University, Department of Business Administration – Faculty of Economics and Administrative Science, muratsercemeli@gmail.com, orcid.org/0000-0002-0718-2236.

[***] Kafkas University, Department of Computer Education and Educational Technology – Faculty of Education, ngunbas@gmail.com, orcid.org/0000-0003-2578-3083.

[****] Giresun University, Department of Computer Education and Educational Technology – Faculty of Education, ozlembaydas@hotmail.com, orcid.org/0000-0002-5812-7085.

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sınıf verimliliğini arttırdığını, zaman kazandıracağını ve öğrencilerin ders içeriğini kendi istedikleri bir hızda izlemelerine yardımcı olduğunu göstermiştir.

Anahtar Kelimeler: Tersyüz Sınıf, Muhasebe Eğitimi, Eğitim Teknolojisi.

JEL Sınıflandırması: A20, M40, M41.

1. INTRODUCTION

It was claimed that there is no standard accounting education in the world countries, and the quality and level of accounting education differ from one country to another (Çürük and Doğan 2001). Especially accounting subjects (e.g. financial accounting, inflation accounting, and computerized accounting) must be offered based on the need of existing businesses of a country. Additionally, it is necessary to educate accounting students who are knowledgeable about technology, follow the innovations and use them, and have the vision to keep up with business world (Bekçi and Titiz 2006). Because of advantages of information systems, it is very helpful to use computers in handling accounting records. Companies, as Dalci and Tanis (2004) claim, "collect, process and retrieve data quickly" thanks to technology. This situation necessitates future accountants to learn computerized accounting effectively. While the majority of Turkey's accounting education is given in the faculties of economics and administrative sciences, the level of computerized accounting education is found to be below from what is requested (Çürük and Doğan 2001). In traditional computerized accounting education, students learn accounting on computers in their classrooms. They are given face-to-face education while working on computers and complete short assignments based on what they learn from their instructors in class. Generally, no outside assignments are given to students.

Lubbe (2016) claims students approach negatively to accounting subjects and have difficulty in understanding and completing the assignments. Her study indicates that the use of flipped classroom has improved students' performances and they developed positive attitudes towards financial accounting subject. Flipped classroom as a form of blended learning combines face-to-face education and online learning (Nishigawa et al. 2017). It is a pedagogical model, in which students firstly receive online lectures via videos prior to class. Instructor of the class records these video lectures and students complete them as homework assignments. Students, who come to class prepared, then do higher-level activities in the class, where they discuss the material and complete related tasks under their instructor's supervision (Evseeva and Solozhenko 2015). While asynchronously preparing for the class, students' complete video courses at their own pace and watch the courses as many times as they like. Thus, they gain knowledge about the course material to be discussed during class time, later. They then actively engage in synchronous discussions and problem solving activities in class (O'Flaherty and Phillips, 2015). Yilmaz and Baydas (2017) claim flipped classroom necessitates

instructors being more active in classroom activities and aware of students' learning process. They supply guidance for students' learning in class, while students take active role in controlling their own learning thanks to outside activities. Moreover, flipped classroom gives students the flexibility to decide what and when to learn, which is absent in traditional classrooms. Patanwala et al. (2017) claim that flipped classroom is only effective when students sufficiently prepare before the class. Parallel to this, Gençer et al. (2014), and Turan and Goktas (2015) have listed some disadvantages that might arise during flipped classroom learning method. For example, students, who are not good enough in individual learning skills, may have difficulty during their learning process outside class activities in flipped classrooms. They might be unwilling to watch videos before class. Some technical problems such as poor Internet connection and absence of technical equipment were mentioned as disadvantages, as well. Students might not be active during their learning experiences before class, as they cannot ask questions in this process. Thus, this situation may create learning obstacles for students in their future activities.

Although it requires more work for both instructors and students, flipped classroom improves student learning (Tucker 2012; O'Flaherty and Phillips 2015), helps students, who do not mostly feel comfortable, ask questions in class (Lento 2016) and improves student satisfaction (O'Flaherty and Phillips 2015). The effectiveness of flipped classroom was tested in different subjects. For example, it improves motivation and achievement in English learning (Evseeva and Solozhenko 2015), beneficial in financial accounting (Lento 2016; Lubbe 2016; Phillips and Trainor 2014), in music and violin lessons (Sever 2014) and in nursing education (e.g. see Njie-Carr et al. 2017). Flipped classroom teaching was found not to be significantly more effective than team-based learning (TBL), although TBL was much more effective than traditional learning on students' exam scores (Nishigawa et al. 2017).

To our best knowledge, there is no study testing flipped classroom model in computerized accounting classes. Students' individual endeavors towards out of class activities might yield different results in flipped classroom model in computerized accounting course since this situation is highly related to a success in flipped classroom activities (Patanwala et al. 2017). Additionally those who have lower self-study habits may get low benefits from such learning environment (Gençer et al. 2014). For the reasons stated above, it is necessary to evaluate the flipped classroom activities of computerized accounting students. The purpose of this study is to determine students' views about flipped classroom conducted in the department of Business Administration at the Faculty of Economics and Administrative Sciences, Turkey.

2. METHOD

This study used simple descriptive research design. This design method aims to summarize a given phenomenon concisely by means of a range figures regarding individual or group characteristics. In this way, it becomes possible to evaluate the nature of a present phenomenon (McMillan and Schumacher 2010). In this regard, students who attended the subject process were interviewed in order to evaluate flipped classroom activities performed in computerized accounting education course. These interviews were designed qualitatively and simple descriptive representations were provided using the frequencies of the codes obtained from the interviews.

2.1. Participants

The target participants of the study were 74 third-year students attending daytime (n=38) or evening (n=36) computerized accounting course (elective) in the Department of Business Administration at the Faculty of Economics and Administrative Sciences during the spring term of the academic year 2016-2017. Purposive sampling method was used for selecting the participants. Following the activities carried out with the participant group, interviews were conducted with a total of 12 students with 6 students for each type of education, namely for daytime and evening. Those 12 students were selected according to their cumulative GPAs based on their grades up to the fall term of their 3rd year. For each education type, the most successful 2 students, the least successful 2 students and 2 students who attended flipped classroom activities without preparation were interviewed one by one.

2.2. Data Collection

Semi-structured interview guide was used as the data collection tool of the study. The subject guide involved five central questions and several sub-questions. Final version of the guide was determined in the light of the views of one area specialist and two educational technologies specialists. After the final version of the interview guide was determined, interviews were conducted on a voluntary basis. Each student responded the questions independently of and separately from other students. Apart from these, some follow-up questions were directed to students as required by the flow of the interview process. The central questions in the interviews were as follows:

What do you think about flipped classroom activities? What do you think are the advantages and disadvantages of the activities?

What are the factors that motivate one to prepare for the classes ahead of time by watching videos?

What do you think about the duration of the videos uploaded to the system? In your opinion, what duration would make the videos easier to watch and follow?

Do you think it makes a difference whether videos are provided before or after the classes? If so, please explain how.

Do you want them to be used in relation to the content of similar courses, too? In which courses, in your opinion, can they be used?

2.3. The Procedure

Flipped Classroom approach was used in a setting where the "Bank Module," a subject in computerized accounting course, was taught. At first place, for the "Bank Module," two 5-minute long video records which explained ETA V8 SQL software in the context of computerized accounting were prepared using Camtasia software. These videos were shared with students by means of EDpuzzle software. EDpuzzle is a free, Web 2.0 tool that allows uploading and editing videos and sharing video links from various online sources (Graham 2016). This tool makes it possible to check which students watched the videos and how many times they watched them. Besides, the tool does not have any forwarding feature, but allows adding questions at points of choice along the video so that students get ready for classes meticulously. Students cannot proceed unless they answer the questions. Students need to watch the videos carefully in order to be able to answer the questions embedded in the videos. As a result, it is also suggested in the relevant literature (e.g. see Patanwala et al. 2017; Cukurbasi and Kiyici 2017), this helps students be better prepared for the flipped classroom activities and hence, achieve higher productivity by means of these activities. Accordingly, it also becomes possible to build a more efficient classroom preparedness process which is actually the main objective of flipped classroom activities. One question was added at the end of the each video record prepared for the purposes of the present study before they were uploaded to EDpuzzle. The main motive behind this was not only to attract and boost the attention of the students, but also to understand whether they comprehended the content of the video or not. A digital classroom was created for the subject course on a social networking site called Edmodo, which is actually a learning management system. Following this, attendants of the subject course were signed up to this digital classroom. All the course content was opened to student access on Edmodo. Finally, any problem that students experienced concerning the system were communicated through the system and handled so that they could be eliminated.

2.4. Data analysis

Content analysis was used for the analysis of the data. Content analysis can be described as an analysis method that entails organizing, classifying and comparing texts as well as deducting theoretical conclusions from these texts (Cohen et al. 2007). In content analysis, related data are grouped into themes, and concepts. They then are organized in a way that readers can comprehend them easily. Finally, they are interpreted (Yıldırım and Şimşek 2006). In the study, after the interviews

were transcribed verbatim, codes were created using NVivo software and relevant data were sorted into certain groups. Frequencies with which students mentioned the codes were also identified. Codes that were defined as a result of the analysis were complemented with quotes entailing participants' views.

3. FINDINGS

Student views about the flipped classroom activities in computerized accounting courses were organized under categories and codes. Categories were "advantages of flipped classroom activities", "reasons for coming to class prepared", "the time when video records were watched", "views about the content of video records" and "implementation of flipped classroom approach in other courses". Frequencies of the codes for each category were demonstrated in the tables and qualitative data about the codes were presented by means of the participants' views (see Table 1). Students' views were coded as the most successful students (SS_x), the most unsuccessful students (USS_x) and students who attended the class unprepared (UPS_x) so as to clarify the origin of the statements.

Table 1. Categories And Codes For Flipped Classroom Activities In Computerized Accounting Classes

Categories	**Codes**	**SS** ***f***	**USS** ***f***	**UPS** ***f***	***Total f***
Advantages of flipped classroom activities	Increase in-class productivity	2	5	1	8
	Help save time	1	1	-	2
	Allow revising course content at personal pace	1	1	-	2
Reasons for coming to class prepared	Content/Technology/Method that aroused interest	1	2	-	3
	Obligations imposed by the lecturer	1	1	-	2
	Sense of responsibility for grasping the course content	1	1	-	2
The time when video records were watched	Before the class hours	3	2	-	5
	During the class hours	-	1	-	1
Views about the	Sufficient and ideal duration of video records	3	5	-	8

content of video records	The impossibility of forwarding videos	2	3	-	5
	Connection problems	2	-	-	2
	Low video resolution	1	1	-	2
	Limited Internet access	1	-	-	1
Implementation of flipped classroom approach in other courses	In other accounting courses	2	3	1	6
	In non-quantitative courses	2	1	-	3
	In other courses	1	1	1	3
	In quantitative courses	1	1	-	2

In relation to the advantages of flipped classroom activities, a significant number of participants believed that flipped classroom activities increased in-class productivity. Besides, they also indicated that advantages of flipped classroom activities involved saving time and allowing students to revise course content at a pace of their choice. Regarding these aspects, participants' views were as shown below:

"This method has offered higher productivity. In this way, one is prepared for the class and comes to the class prepared and deepens their knowledge in the class. Flipped classroom method enabled us to study more examples the classroom." (USS_1)

"I mean, I think it was effective; because, both you and we used to have difficulty. You were expected to check what we had done one-by-one for accuracy. But, when we attended the class after watching the videos, everyone was, to some extent, able to understand the subject. In this way, you do not get tired as much as before and we learn more quickly and thoroughly." (UPS_4)

"I watched the video before the class. After you explained the topic in the class, some classmates who hadn't watched the video asked some five or six questions. Yet, I was able to do the exercises immediately as I did not need to ask any questions. I mean, this way it is better, one learns the subject ahead of time and better comprehends it in the classroom. When you named the topic, I was already able to do the exercises by myself." (USS_1)

"This software has been of great help to me, it has offered me the opportunity to rewind videos to listen to the parts I had failed to understand in previous classes, before coming to the next class. Previously, as the class was quite crowded and there was noise, it was sometimes hard to hear what our professor was talking about. Thanks to this method, however, I rewound the videos and watched the parts I had missed before. I noticed how helpful this was when I attended the class today and I could do the exercises." (SS_2)

One of the primary objectives of flipped classroom activities is to ensure that students come to the class prepared. In this regard, the reasons for students to come to class prepared appeared as content/technology/method arousing interest, obligations imposed by the lecturer and the sense of responsibility for grasping the course content. Regarding these aspects, participants' views were as shown below:

"Of course, we had never heard of such a method before. We met it thanks to you. It inevitably arouses interest. One cannot help, but watch it just out of curiosity; and signs in and then checks and tries to figure out what is told, what happens and what it is all about. And, we all watched it voluntarily." (USS_4)

"Actually, I'm interested in stuff like this. Thus, at first place, I checked the platform just out of curiosity. I kind of like watching stuff like this." (SS_3)

"I watched the videos partially because you told us to do so, but it was more a responsibility than an obligation for me." (USS_3)

"I watched it to learn the content and at the same time, because you asked us to do so." (SS_4).

In the study, video records were used as flipped classroom activities. As part of these activities, video records should be watched before the class begins and incomprehensible aspects should be handled during the in-class activities. Thanks to technology, it is possible to watch these video records before, during or after the class hours. Students believed watching videos before the class was more beneficial; however, there were also some students who claimed it was better to watch the videos during the class session. Regarding these aspects, participants' views were as shown below:

"I think it is better if videos are available before the class hours because everyone has the applications at home or on their mobile phones. It certainly is possible for people to check the content from time to time, in a free time of theirs and to gain some knowledge before the classes. Therefore, it is more reasonable to offer the videos before the class hours and its advantage lies in the fact that this allows attending the classes with some basic knowledge." (SS_1)

"It is better to watch them in the classroom, because if we watch the videos at home after the classes, it results in confusion. Some take notes while watching the videos and others do not or some do not remember what to do and get confused. Once, it happened to me, too. I did not take any notes and I got confused when I came to the class. This is why it is better to watch the videos and perform the activities in the classroom. To me, it is better in the classroom." (USS_4)

Students considered the duration of video records used in the flipped classroom activities to be sufficient and ideal. They also thought it was good that videos could not be forwarded; however, they listed some problems such as problems with connection, low video resolution and limited Internet

access. Regarding these aspects, participants' views were as shown below: "Durations of the videos are definitely ideal. It is important not to bore students by extending the duration, because one can get bored easily. I think videos of 5 to 6 minutes are sufficient." (SS_2)

"Their duration is exactly right; they neither cause boredom nor get incomprehensible due to their duration. When I first played the video, I was surprised; because, I expected a longer record. Besides, if it had been too long, students would have started to watch it with some prejudice due to its total duration. Yet, in our case, it was just so short that I didn't even notice those 5 minutes had passed. For the examples given in the videos etc. the duration was, to me, quite appropriate. Watching the video in two parts was also good; I mean, it was better to watch the next video after refreshing my mind contrary to what would have happened if I had watched them all in one part. That is, I would have focused on it at the beginning, but then, would have been distracted." (USS_3)

"We couldn't forward the videos, and were expected to watch them in the given order. Once we switched to another tab, the video immediately paused. We were able to rewind them when we couldn't understand something, and it was a better feature. Besides, all the questions embedded in the videos helped us to check whether we had learnt the content or not." (USS_3)

"Preferring EDpuzzle was the right decision, because it does not allow one to forward a video. It is also good that it has a feature for adding questions in the video. If the videos had been uploaded to YouTube, then many wouldn't have watched them or would have preferred forwarding the videos to do away with them. Also, they would have claimed to have watched the videos even if they hadn't. Therefore, it was quite favorable this way." (USS_2)

"I had Internet access problems and the videos kept freezing while I was watching them. Therefore, I had to watch them once again as I was not able to understand some parts." (SS_4)

"As to the negative aspects... I think, there is room for improvement in some respects, for example, resolution can be of better quality." (USS_3)

"I had difficulty using it when I first opened the platform on my mobile. The screen was small and resolution was really low." (SS_3)

Students suggested that flipped classroom activities might work well in other courses and demanded this approach to be used in other courses, as well. Regarding these aspects, participants' views were as shown below:

"It should not be limited to one single course. I believe it might work well particularly in quantitative courses. General accounting course can be considered to be well-suited for this method." (SS_2)

"It is better in non-quantitative courses. I support using it in other courses, too. General accounting is also an option, but in that case it can be more convenient to upload the videos after the classes. In that way, if they don't get a full understanding of some parts, students can revise and understand those parts after the classes. In quantitative courses, I think it is better to offer the videos following the classes." (USS_1)

"I think it is suitable for all types of courses. In quantitative courses, we can understand the explanations on the board easily, we can rewind the videos or watch them many times to learn the points we have difficulty understanding. Also, if I'm not mistaken, EDpuzzle has a section where students can ask questions to their teachers, we can utilize this feature and hence, understand the courses much more easily. It can be general accounting courses or as I previously said, it is suitable for all types of courses." (USS_2)

"I'm of the opinion that applied courses would be really beneficial. It would be beneficial for us, too. There should be activities prior to, during and following an applied course." (USS_4)

4. DISCUSSION

In the present study the "Bank Module," a subject in computerized accounting education, was offered using flipped classroom approach. The respective experiences and views of the students who participated in the courses were explored following this process. The study also aimed to reveal any recommendations about teaching the whole course or similar courses using the same approach.

Similar to the findings of past studies (e.g. see Turan and Göktaş 2015; Kocabatmaz, 2016), advantages of flipped classroom activities were defined as increasing in-class productivity, saving time and allowing students to revise course content at their own pace. This method eliminated problems arising from the crowded classroom environment and from students' diverse levels of learning pace. Besides, students attended the classes after studying the basics of a given subject. Students were of the opinion that in-class productivity increased due to these factors. They suggested flipped classroom settings offered more productive outcomes as students came to the classes prepared after completing assignments at home. Before class hours, students comprehended the course content at their own learning pace and hence, any loss of time that resulted from the variation in students' learning paces was minimized. Similarly, Sever (2014) found out in the interviews she conducted with her students after carrying out music and violin courses using this method that flipped classroom method helped save time. When computerized accounting course is first taught via traditional methods, the instruction process becomes harder and consumes a lot of time due to the variation in students' learning paces. More clearly, some students understand the subject immediately while others

need to revise the course content for a couple of times. Furthermore, fast learners are obliged to wait after completing their assignment and hence, might lose their motivation. In flipped classroom activities, the possibility of rewinding the video records helped participant students find and learn the points they missed, as a result, the students were able to follow the classes at a pace of their choice. Apart from these, it is possible to check if video records are watched or not thanks to technological advances. In flipped classroom settings, students who came to class without completing their assignments were seen to recognize the advantages of this system and held positive views about the method.

In flipped classroom activities, content/technology/method that aroused interest was the most frequently stated reason which students came to class prepared. Obligations imposed by the lecturer and the sense of responsibility for grasping the course content were other reasons that emerged as a result of the study. The reason for which students were interested in a newly introduced method/technology might stem from the fact that it was the first time they met such an approach.

One of the main components of flipped classroom activities is to ensure that students come to class prepared, and then, to study the incomprehensible parts in the classroom environment and finally, to reinforce student learning via exercises. As a consequence of the student interviews, similar to the findings of a study by Çukurbaşı and Kıyıcı (2017), students liked and preferred watching video recordings before classes and attending classes in a prepared way. Introducing videos in the classroom or following the classes is against the idea behind the flipped classroom activities. Moreover, it is possible to watch the videos following the classes after first watching them outside the classroom. As to the time when video records were watched, successful students believed that it was more useful and correct to watch the videos before the classes while unsuccessful students preferred watching the videos during the classes. This might be due to the fact that unsuccessful students did not want to come to the class prepared or did not like studying lesson. The reason for negative opinions, as Doğan (2015) also argued, might be the prejudices against a newly introduced method, and within the context of the present study, against the flipped classroom learning method.

When designing videos for flipped classroom activities, it is important to ensure that the length of the videos does not exceed certain limits so as not to bore students. Besides, it is also important that videos include as many questions as possible. Actually, participant students considered videos of five to six minutes to be sufficient for didactic purposes. It is important for students to have uninterrupted access to video records since flipped activities are mostly conducted in web-based environments. In the study, one of the problems associated with the process were about students' connection problems or lack of Internet connection. This also emerged as a problem in past studies (e.g. see Gençer et al. 2014; Turan and Göktaş 2015). Additionally, students also mentioned that they experienced resolution

problems when watching the videos on their mobile phones. In order to eliminate these types of problems, videos should be recorded at high resolution and necessary infrastructure and means for Internet access should be available.

The participant students seemed quite satisfied with the method as it was their first experience in such learning approach. They demanded all courses to be taught by means of an approach of this type however, some students differentiated between the courses as quantitative and non-quantitative. Hence, they believed this approach should be adopted in accordance with the type of the course. Some others, on the other hand, wanted to receive all their courses by means of this approach without making any distinction between the types of courses.

5. CONCLUSION

Computerized accounting is a course that is usually conducted in a laboratory setting using projectors. Student views regarding the use of the subject method in computerized accounting courses were found to be quite positive, as was the case in studies by Luban (2016), and O'Flaherty and Philips (2015). Nevertheless, students should, first of all, take general accounting courses and learn the basics before they study computerized accounting. As to general accounting, it is a course in which instructors usually use the black board intensively and instructors are the suppliers of knowledge while their students are passive receivers of the subject knowledge. Students, who took computerized accounting courses after taking general accounting courses before, were supportive of using the subject method in general accounting classes as well. Students' views regarding the flipped classroom approach were found to be similar regardless of whether they were in the category of successful, unsuccessful or unprepared students. In the light of the results, the following suggestions can be put forward.

Suggestions

Students demanded the use of flipped classroom method in other courses. Thus, it is necessary to introduce and teach the method to instructors of the courses at the faculties of economics and administrative sciences. It is also necessary to promote the use of the same method for teaching other courses.

A course structure should be developed in order to use this method efficiently in general accounting courses. More clearly, all classes should be well-designed and basic concepts should be explained in short videos before the classes. Moreover, in classroom activities, more examples should be solved by focusing on the points that students do not understand well.

It is important to ensure that video records, one of the most useful activities in flipped classroom method, are well-designed in terms of their content and length. They, preferably, should not exceed five to six minutes so that students don't get bored and lose their interest.

Video resolution should be improved as resolution problems have an adverse effect on student motivation.

It is important to use such platforms as EDpuzzle instead of ordinary video sharing sites for flipped classroom activities in order to be able to check students' preparation prior to class time. The features that allow adding questions to videos and disable forwarding ensure that video content is analyzed meticulously. Therefore, selecting an appropriate video sharing site requires particular attention.

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