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Use of Flipped Classroom Technology in Language Learning

Arina Evseeva*, Anton Solozhenko

National Research Tomsk Polytechnic University, 30 Lenin Avenue, Tomsk, 634050, Russia

Abstract

The flipped classroom as a key component of blended learning arouses great interest among researchers and educators nowadays. The technology of flipped classroom implies such organization of the educational process in which classroom activities and homework assignments are reversed. The present paper gives the overview of the flipped classroom technology and explores its potential for both teachers and students. The authors present the results obtained from the experience of the flipped classroom implementation in the language classroom. The study shows that the use of the described technology in the learning process enhances students' motivation and improves their academic performance.

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Keywords: Flipped classroom technology; blended learning; e-learning environment; classroom activities; language learning.

1. Introduction

Nowadays blended learning as a new model for organizing the educational process in higher educational establishments attracts the attention of many researchers and educators all over the world. Blended learning is understood as the phenomenon in which face-to-face learning and teaching experiences are combined with online tasks and activities (Graham, 2006). The increasing popularity of blended learning is determined by modern conditions causing social and economic changes in the society which have an impact on the requirements for graduates of higher educational establishments. Nowadays the society is in need of highly qualified specialists, competitive in the labor market, striving for the continuous professional and personal development.

* Corresponding author.
*E-mail address:*evseeva@tpu.ru (A. Evseeva).

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Modern graduates of the universities are required not to cram the theoretical material, but to be able to apply it in practice by searching for the ways to do it. Students do not have to be "filled" with knowledge for the rest of their lifetime, but they should find, analyze and acquire new information when they need it. In other words, there is a transition from "education for life" to "lifelong learning" which is understood as continuous and self-motivated search of knowledge for different purposes either professional or personal. According to Fischer (2012), learningcan no longer be divided into a place and time to acquire knowledge and a place and time to apply the knowledge acquired. The concept of lifelong learning contributes to the professional and personal growth of students as future specialists.

Another factor encouraging the promotion of blended learning is the integration of information and communication technologies (ICTs) into the educational process. The integration of ICTs empowers teachers and learners, transforming teaching and learning processes from being highly teacher-dominated to student-centered (Trucano, 2005). The learning potential of ICTs and their availability for students offer them a lot of opportunities to study anytime, anywhere.

The key element of blended learning is the technology called "flipped classroom" which was developed by American educators Jonathan Bergmann and Aaron Sams in 2000 (Bergmann & Sams, 2012). The idea of this technology is that the main stages of the teaching and learning process such as classroom activities and homework are reversed. That is, theoretical material is studied by students individually by means of watching video lectures recorded by the teacher or downloaded from the Internet websites while classroom activities are devoted to fulfilling practical tasks and discussing the major issues with the teacher.

The present paper aims to evaluate the efficiency of the flipped classroom technology implementation in the educational process at the technical university. The present article will overview the studies devoted to the description of the flipped classroom and provide practical experience of the integration of the given technology into the process of the English language teaching.

2. Literature Review

A literature review is used to observe scientific works concerning the concept of the flipped classroom technology and its use in the teaching and learning process.

The flipped classroom is defined as a pedagogical model in which the lecture and homework elements of the course are reversed (Bergmann & Sams, 2012). In the book "Flip Your Classroom: Reach Every Student in Every Class Every Day" the given authors compare the amount of time spent on learning activities in the traditional and flipped classroom. The comparison showed that in the flipped classroom much more time is devoted to practical activities instead of studying the theoretical material (75 minutes versus 35 minutes).

A group of researches (Bransford, Brown, & Cocking, 2000) reveal the success of the flipped classroom and describe the key elements of this technology. The authors mention that peer-to-peer assessment allows students to acquire new knowledge and experience and improve their understanding of the subject studied.

Muldrow (2013) in the article "A New Approach to Language Instruction – Flipping the Classroom" sharing her experience of using the flipped classroom technology states that moving from the traditional to the flipped classroom involves great adaptations by the teacher and students.

In spite of the fact that there are numerous studies devoted to the flipped classroom, the implementation of this technology for teaching and learning English at the technical university needs further investigation.

3. Research Methodology

The research is making an attempt to evaluate the efficiency of the flipped classroom technology in the process of teaching and learning the English language at the technical university. For achieving the aim of the research the following methods have been used: the analysis of the scientific literature review, study of the flipped classroom technology use in the educational process, a reflection of the authors' own pedagogical experience and data analysis.

According to the aim of the study, the following research objectives can be pointed out:

- to evaluate the efficiency of of the flipped classroom in teaching and learning the English language
- to overview the concept of the flipped classroom technology in the educational process
- to focus on the advantages that the flipped classroom provides

The research is based on the scientific works of the educators investigating the following problems: the use of information and communication technologies for educational purposes (Kleiman, 2004), blended learning concepts (Sharma &Barrett, 2007), theory and methods of teaching foreign languages (Holmberg, et al., 2005).

4. The Concept of the Flipped Classroom Technology

The flipped classroom technology implies such organization of the educational process in which, when students attend face-to-face classes they already have some theoretical knowledge and understanding of the matter that will be discussed in the classroom. It makes the interaction more effective and fruitful as students feel more comfortable and confident asking questions and discussing the issues with the teacher and peers. Moreover, students are becoming involved in practical activities in the classroom, but not in monotonous taking notes of the teacher's lecture or explanations of theoretical material. Consequently, homework becomes different as well. Very often students suffer from lack of understanding of some crucial issues, making their home assignments and impossibility of getting the teachers' tutorial. Due to this fact, some students prefer cribbing the answers to the homework instead of fulfilling the tasks by themselves. The flipped classroom helps to solve this problem by providing students an unlimited access to electronic resources. Students work in the e-learning environment individually or in groups watching video lectures, checking their knowledge by answering comprehension questions or studying additional learning resources. In class, students expand the material studied mainly by solving practical tasks, making projects and discussing various important issues on the topic. After classroom activities, students continue working with the electronic course where they are engaged in testing their knowledge of the subject and evaluating their peers' work. Such organization of the educational process eliminates the distinction between classroom activities and individual students' work. To make the technology of the flipped classroom successful all stages of the teaching and learning process should be thoroughly integrated and planned.

It is necessary to concentrate now on the interaction of the educational process participants as the roles of the teacher and students undergo significant changes in the flipped classroom.

Firstly, in the flipped classroom, students have opportunities to control their own learning. They can study at their own pace due to availability and accessibility of all necessary resources in the e-learning environment. Moreover, students can choose when and where to study within the time limit allocated for this or that task, they can review the material anytime they need it or get online assistance from the teacher or peers due to chats and forums. A continuous access to online materials allows students to keep pace with the curriculum if they have to miss classes because of illnesses or other reasons.

Secondly, the flipped classroom technology encourages collaboration among students due to mutual projects and group work. Besides, students are engaged in peer-to-peer assessment, giving feedback to the works of their group mates according to the developed criteria. Collaborative projects make students cooperate, learn from each other and help each other (Marsh, 2012)

Finally, the flipped classroom increases students' responsibility for their own learning. They become more self-directed and motivated than in a traditional classroom environment. Students have to learn to manage their time working with the electronic course, developing self-study and autonomous learning skills. In other words, students' role in the learning process is changed, making them active participants of the educational process.

The flipped classroom technology has an impact on the teacher's role as well. The role of the teacher is shifting from delivering ready-made knowledge to students to facilitating their learning. In the flipped classroom there is more reliance on students' self-directed learning and the teacher, therefore, needs to help students be more responsible for their learning. The teacher also has to guide students who have not had the experience of working autonomously to gain time-management skills to make their learning process more efficient.

The flipped classroom involves a lot of e-learning activities in which students are engaged. Thus, the task of the teacher is to contribute to creating a friendly online environment for the interaction of students with each other. The

teacher also has to be an e-learning moderator to monitor online discussions, but not to lead them. Thus, due to the technology of flipped classroom the teacher acquires a number of different roles. He/she has to encourage and motivate students, guide and monitor progress, give feedback, boost confidence, and maintain motivation (Marsh, 2012).

New roles of the teacher and students are considered to be particularly important for the process of teaching and learning foreign languages as learning the language implies close interaction of the teacher and students and students among themselves. Based upon pedagogical experience, we would like to mention that students studying the English language at National Research Tomsk Polytechnic University have different levels of the English language competence, consequently, they need a different period of time to learn theoretical material and fulfill practical assignments. The flipped classroom technology allows students to solve this problem by giving them the opportunities to choose the tempo, speed, and the volume of the content to study. Moreover, students' participation in online discussions, forums and chats contributes to the development of speaking skills which are very important for mastering the language.

However, as any innovative concept, there are some challenges that have to be overcome for the successful integration of the flipped classroom technology into the educational process. One of the challenges is concerned with extra workload that the teacher is designing the content of the electronic course. Recording lectures, developing learning materials and searching for supplementary resources require a lot of time, skills and efforts from the teacher. Nevertheless, when the electronic course is integrated into the teaching and learning process, the teacher has additional time for doing research and methodological work.

Another important issue that plays a vital role for the flipped classroom technology is the integrity of the classroom and electronic components of the course, which means that all stages of the teaching and learning process should be logically connected. All tasks and assignments that students have to do in the electronic course must be checked and assessed in class or the e-learning environment. No tasks should be left without check and assessment. This will contribute to raising students' motivation for diligent studying that will result in increasing the efficiency of the learning process.

One more problem is that some students do not accept the replacement of face-to-face classes with activities in the e-learning environment because of the fear that they "lose" live communication with the teacher and peers. It is necessary to explain to students the concept and features of the flipped classroom technology, showing them additional means of communication that the online course provides such as chats, forums and video conferences.

5. The Flipped Classroom Technology Implementation

For achieving the objectives of the research it is necessary to focus on the example of the flipped classroom technology implementation at National Research Tomsk Polytechnic University. Second-year-students of the Institute of Power Engineering at TPU were engaged in this technology studying the English language course. Students attended face-to-face classes, 50 percent of which were replaced by activities on the Learning Management System Moodle. Moodle is widely developed e-learning environment, providing a lot of benefits for teachers and students such as a variety of tools for studying and communication, flexibility of use, technical support, low cost and others. Students' work was organized in the classroom and e-learning environment. Before face-to-face classes, students watched short video lectures concerning the topic of the lesson, studied additional on-line resources, posed questions for discussions in forums. Time in class was devoted to clarifying the grammatical and lexical phenomena that caused difficulties, making presentations and reports and discussing the most important issues. After face-to-face classes, students assessed the work of their peers, checked their knowledge of the material studied by doing tests and shared their opinions on the lesson. All these activities involved work on the Moodle platform.

6. Findings and Discussion

To find out students' opinions on the flipped classroom technology use for learning English the survey has been conducted. 85% of students taking part in the survey liked the idea of integrating the flipped classroom technology into the learning process. 15% of respondents were not inspired by this technology because of the problems they faced with. Among the difficulties that students experienced working with the electronic course the following ones

were mentioned: problems with the Internet access, lack of time for completing online assignments, difficulty with self-discipline to organize their work properly. Almost all students (98%) mentioned the availability of the e-learning materials as one of the major advantages of the course. 75% of respondents appreciated the opportunities for collaboration and communication in the e-learning environment. Among the benefits that the flipped classroom offers teachers outlined the flexible timetable, involvement of students in the learning process and increase of students' academic performance.

7. Conclusion

To summarize, we can state that the flipped classroom is a promising technology which shouldn't be underestimated. The integration of the flipped classroom into the educational process leads to an increase of students' motivation and interest for studying foreign languages. Furthermore, it has a positive impact on students' self-discipline and self-directedness due to the fact that students take on responsibility for their own learning. The flipped classroom technology has a huge pedagogical potential for both teachers and students. In spite of the fact that the number of face-to-face classes is decreasing, the quality of the educational process does not suffer. Moreover, the results of the survey showed that the improvement of students' academic performance is observed. However, there are still some technical and organizational challenges that complicate the integration of the flipped classroom technology in the teaching and learning process. Overcoming these challenges needs further research in order to create a new learning environment based on the technology of flipped classroom.

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