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Prospects of Blended Learning Implementation at Technical University

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Abstract

The present paper explores the integration of a blended learning course in the process of learning English as a second language at the technical university. We overview the difference between traditional, web facilitated, blended learning and online course; the implementation of the blended learning course in the process of learning English at the technical university. The article also investigates the benefits and drawbacks of blended learning and the possibilities of a blended learning course integration in the educational process. The results of the survey conducted prove that the integration of a blended learning course can be implemented successfully through a combination of online learning and face-to-face classes. The findings described will be useful to teachers and researchers working in this field to overcome the barriers, become more experienced and understand the main concept of blended learning.

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Keywords: Blended learning; integration; information and communication technologies; e-learning; online course.

1. Introduction

Over the last 15 years the process of learning and teaching foreign languages has changed greatly. The world has become digital as well as an educational process. We cannot imagine the language classroom without interactive whiteboards, students' mobile phones, electronic dictionaries and different apps which can be used in the learning process.

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New technologies are transforming our world, and instructors must be ready to integrate these technologies in class as learners have grown up playing computer games, watching video on YouTube and reading digital books. New means of communication have been created and we need to study how these new technologies can be used in teaching and learning foreign languages at universities.

Nowadays, modern information technologies have become an integral part of the educational system in many countries all over the world. This idea is reflected in the works of many researchers whose scientific interests lie within the scope of information and communication technologies in education: the importance of computer technologies integration in the learning process (Matukhin & Evseeva, 2014), the use of information and communication technologies for developing adult learners' communicative foreign language competence (Balastov & Sokolova, 2015), using blogs in creating special opportunities for language learning (Buran, 2015).

Information and communication technologies tend to dominate in teaching and learning processes at modern technical universities. They are widely used for teaching various subjects as well as foreign languages. One of the forms of information and communication technologies is considered to be e-learning that is being implemented in the teaching process nowadays. However, e-learning alone cannot satisfy all the needs that the participants of the educational process have. Consequently, only the integration of traditional teaching methods and e-learning can lead to the desired results. Among various e-learning technologies blended learning is supposed to be the most effective and perspective one that should be implemented in the educational process at modern universities.

Different researchers have investigated different aspects of blended learning: methodological basics of blended learning in teaching English for academic purposes to engineering students (Matukhin, et al., 2014), e-learning impact on the academic performance of students and teachers (Lumadi, 2013), activity theory practice in open and distance learning, their implications for learning virtually (Nyoni, 2013), designing teaching activities of English writing courses for learners of English as a foreign language in the blended learning environment (Tang, 2014), blending learning in a web 2.0 world (Motteram & Sharma, 2009), case study on the effects of an L2 writing instructional model for blended learning in higher education (So & Lee, 2013).

Although there are numerous researches, concerning blended learning, the integration of blended online courses into the learning process of technical universities hasn't been described yet. The authors of the present article are making an attempt to describe the opportunities of such integration and offer some practical guidelines for teaching engineering students a foreign language by means of electronic courses.

2. Literature Review

A literature review will be used to study different definitions of blended learning, the difference between a traditional, web facilitated, blended learning and online course; the implementation of a blended learning course in the process of learning English at National Research Tomsk Polytechnic University. Also the example of using the English course to teach engineering students will be provided.

Allen and Seaman divide all courses into four groups:

- Traditional course which doesn't use online technologies. All the material is given orally or in a pen
- Web facilitated course uses web-based technologies. For example, web pages are used to provide the syllabus and assignments (1-29 % of the material is given online)
- Blended (hybrid) course combines online learning and face-to-face classes (30-79% is delivered online)
- Online course implies that most of all the content (more than 80%) is delivered online (Allen & Seaman, 2013).

Numerous researchers define blended learning as "a training method that combines the benefits of in-class learning and e-learning" (Matukhin, et al., 2014; Obskov, 2014).

The term "blended learning" combines the elements of face-to-face teaching, including personalized learning, social interaction and direct contact with the language, allowing greater variety and flexibility than traditional learning. Implementing blended learning in the language classroom implies not only online learning, but integrating the content into the lesson.

We should differentiate between blended learning and distance learning to prevent misunderstanding. Blended learning aims to complement face-to-face sessions, while distance learning exists on its own. Blended learning

implies that receptive skills, writing and grammar should be done individually and teachers should concentrate on speaking activities and explanations of the most difficult material, having face-to-face classes. Understanding the main concepts of blended learning will help to choose the material appropriate for class discussion and individual students' work. Only well-prepared and professional teachers are able to create blended learning English courses focusing on listening, reading, writing, vocabulary, language practice, and pronunciation.

Blended learning has a number of advantages in comparison with traditional learning courses. One of the advantages of blended learning is that it is easily adaptable to learners' needs. The adaptability comes from different ways how online resources can be used. The most important component of blended learning is its flexible course. If the teacher notices any problems that the learners have while studying the course, he/she can immediately solve these problems by changing the material and learning activities. Learners' individual needs should be taken into consideration, otherwise even well-designed courses can fail. If the course is flexible it contributes to raising learners' motivation.

Another benefit is that students, being involved in planning the course can successfully develop creative and critical thinking. Moreover, blended learning allows students to be independent, while studying outside the classroom any time they have opportunities and willingness to learn the language. Independent learning provides constant feedback without the teacher's assistance. Students can easily find their results and see their progress. So the teacher's role is changing from that of a lecturer to a facilitator who helps to monitor and assess learners' progress, giving them an opportunity to study independently. Moreover, the learner's role is changing as well. The great advantage is that learners become active participants of the studying process. The involvement of the learner in planning his/her own learning is feasible and important (Nizkodubov & Evseeva, 2015).

One more advantage of blended learning is that it reduces instructors' workloads and they have more time to work with other material, taking into account the learners' needs. It's very important to have feedback from the learners, due to this they become much more interested in the process of communication with other learners outside the classroom. Blended learning allows the learners to do extra work, to learn important vocabulary and grammar structure before face-to-face classes, not after, to give them immediate feedback, to be motivated, interested in the results of studying.

Blended learning has disadvantages either. One drawback is that most online courses are designed in a similar way as their predecessors – face-to-face courses. They have the same material, the same number of credit hours, are led by the same instructor who has interaction with students face-to-face. Also, it takes a lot of teachers' efforts to design online courses and to teach online. We consider that such courses must be designed by a team of professional programmers and teachers. Some more disputable questions are the following: Do all students want to be engaged in online learning? Do they have any alternatives if they are against? If they have problems with eyesight, what should they do?

3. Research Methodology

The paper outlines the methodology for the survey, including pedagogical objectives, task design, selection of a blended course, as an educational tool and its implementation in the learning process. We use the following methods in our research: the analysis, the review of literature, observing our own professional experience with data analysis.

According to the aim of this study, including investigation of blended learning to create additional opportunities for language learning, we've formulated the following pedagogical objectives:

- To evaluate the hypothesis that blended learning is an effective educational tool to learn and teach English at the technical university
- To design a blended learning course which allows students to learn English successfully
- To describe possible ways of teaching English to engineering students implementing blended learning courses
- To overview pros and cons of integrating blended learning in a language classroom

To achieve the first and the second objectives, we've conducted a research based on creating and using our own blended online course for teaching English at National Research Tomsk Polytechnic University. Today the

university provides web facilitated courses to over 14,000 students. About 30% of material students can get online. The next step is to implement blended learning in the learning process and in five years time to provide about 80% of online courses.

The following steps of implementing blended learning at TPU have been planned:

- Online lectures. Some lectures will be given only online in the form of webinars or high-quality lectures with tests designed by instructors
- Practical training will be provided in the form of webinars. All participants have opportunities to use a common desktop, to ask and answer questions, to show their work to other learners, to conduct a survey, and complete a test. This form of practical training displays opportunities for full traditional practical training replacement. Such online courses will be implemented only for the courses which don't need laboratory equipment
- Masters's programs need online courses as they imply more individual work

To evaluate the hypothesis that blended learning is an effective educational tool the E-learning Institute of Tomsk Polytechnic University conducted a survey to find out the views of teachers and students on the use of electronic courses in the educational process. More than 100 teachers and about 550 students participated in the survey. The results of the survey will be presented further in the article.

To achieve the third objective, we suggest one of the ways of implementing a blended learning course for teaching English to engineering students at Tomsk Polytechnic University. We have chosen one of the modules of the course "General English" taught to the second-year-students of TPU which is called "Ecological issues". In the traditional learning process 12 hours are allocated for classroom work and 12 hours are supposed to be for self-studying. In a blended learning course 6 hours of classroom work are replaced by activities in the e-learning environment while 12 hours are left for self-studying. Thus, 50 percent of the time, which was devoted to classroom work now move to e-learning. The activities that the students have to do in the e-learning environment are versatile, for example, writing essays, making presentations or discussing different problems on the topic of the module. Such activities as writing essays and making presentations are followed by peer-to-peer assessment which means that students give feedback to other students' works according to defined criteria or rubrics. Peer-to-peer assessment enables students to take an active role in the management of their own learning as they monitor their work using internal and external feedback (Butler & Winne, 1995).

It should be mentioned that there is a close interrelation between classroom and e-learning components which implies that activities that students do in class are contained in e-learning environment and vice versa. Thus, a continuous feedback is provided to students, according to the results of the previous work.

After 4 months of implementing the online course intended for engineering students studying English as a foreign language we can describe the achievement of the fourth objective which includes the overview of the benefits and drawbacks of blended learning in a language classroom.

The advantages are the following:

- 1) Students' online research skills have been developed and their critical thinking has improved.
- 2) Blended learning is independent learning, so students have more opportunities for studying anywhere and anytime.
- 3) Students have improved their reading skills, caused by a large amount of information given online.
- 4) They have enhanced writing skills, while posting their comments as well as completing writing tasks and tests.
- 5) Students' interest and motivation to learn the English language have increased for the reason the course was tailored to suit the learners' needs.
- 6) Watching the video has developed listening skills.

Nevertheless, there are still some barriers to online learning.

- 1) Students should be more disciplined to succeed in online courses.
- 2) Low retention rates in online courses.

- 3) Problems with eyesight.
- 4) The unwillingness of some students to learn English online, as online courses increase students' mental and physical workload.
- 5) Lack of acceptance of online education by potential employers.

4. Findings and Discussion

The results of the survey conducted at Tomsk Polytechnic University show the attitude of both teachers and students to the integration of electronic courses in teaching and studying. They are the following. Almost all students of Tomsk Polytechnic University were engaged in e-learning activities. About 87% of students actively studied online lectures. About 80% of them passed successfully their individual tasks. 60% of respondents studied additional material online.

It is important to know how much time students and teachers devote to working with electronic courses. About 50% of students spent on this 1-3 hours a week, 27%, even spent more than 3 hours a week. For teachers the amount of time is bigger: 45% devoted 2-4 hours a week to the work with electronic courses and 33% of respondents spent online more than 4 hours a week.

Among the problems connected with online learning 51 % of students and 37% of teachers called technical ones. In addition, 51% of students found impossible to follow strict deadlines and the same percent of teachers mentioned the lack of time for monitoring the students' work in electronic courses.

More than 50% of students and about 90% of teachers participating in the survey agree that electronic courses are a very important part of teaching and learning and that they should be integrated into the educational process at the technical university. Almost all students found electronic courses very useful for their own learning. 95% of respondents appreciated the opportunity to have free access to the material and tasks anywhere and anytime. Moreover, 91 % of teachers think that due to electronic courses, students become more involved in the learning process and 75% of teachers consider e-learning as an effective tool for increasing students' academic performance.

5. Conclusion

To sum up, it is worth saying that blended learning as a combination of online learning and face-to-face classes should become a top-priority mode for teaching and learning foreign languages in modern conditions. The importance of blended learning integration is justified by the fact that learning foreign languages imply compulsory communication activities which can be realized both in the classroom and in the e-learning environment. Students get the opportunity to develop their communication skills outside the classroom by means of online interaction with each other while discussing issues in forums and chats and doing other activities.

Furthermore, blended learning provides a number of important advantages for both teachers and students, making them active participants of the learning process responsible for the results of their own work.

Despite the fact that the development of electronic courses is time consuming at the first stage, it allows teachers to optimize their time and maintain the quality of the teaching process. The suggested learning mode helps to keep pace with the time and correspond to new requirements of the educational system where information technologies and the use of online resources play a vital role.

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