Implementing a Blended Learning Approach to Foreign Language Teaching at SPbPU

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Abstract. One of the most significant trends in higher education today is combining conventional classroom instruction with online learning, or blended learning. Implementing blended learning for foreign language teaching has proven effective due to a variety of factors. Universities in Russia also switch to this new teaching model and design online courses to accompany and support traditional full-time teaching. In accordance with the SPbPU Provision on online-learning, a blended course of General English was launched in the Institute of Industrial Management, Economics and Trade (IIMET). The paper describes the aspects of course development and its structure. With the aim of evaluating the pilot blended project, we have conducted a survey to define the complexity level and elicit the most difficult aspects of the course, give account of students’ motivation level and ability to work self-consistently and responsibly, and measure the satisfaction level with the course. Test results show that much bigger number of students in pilot groups got excellent and good grades which increased by 40% compared to the results of control groups. Although some aspects of the experimental course were rather challenging and caused some complications, the majority of students opted for blended learning model, as it gives more flexibility, convenience and allows students to achieve good learning outcomes.

Introduction

In the era of modern digital technology, education systems are trying to keep up with the technological advancement and meet current demands of the society, preparing highly qualified professionals with computer skills and using cutting-edge teaching methods. Education sector is constantly changing in response to social, economic and technological challenges. With the increased global use of Information Communication Technology (ICT), universities are adapting new technology into the curriculum [1]. One of the most significant trends in higher education sector today is combining conventional classroom instruction with online learning – blended learning.

Blending electronic and classroom environments has been implemented in higher education for more than a decade, and a number of studies have been carried out in an attempt to clarify the definition of blended learning and analyze various aspects of this approach, e.g. [2], [3], [4], [5]. The most widely accepted is the definition given by Bonk and Graham (2006) – blended learning is the
combination of traditional face-to-face instruction with computer-assisted instruction [6]. In other words, the term “blended” means combining different learning environments in the most appropriate and integrated way, exploiting the strengths of each learning medium [7]. In this method of course organization, from 30% to 79% of content is delivered online, whereas the number of face-to-face meetings is reduced [8].

Blended approach is gaining popularity in higher education internationally. It remains one of the key issues in teaching and learning in the EDUCAUSE Learning Initiative’s 2019 annual survey of higher education [9]. Some researchers refer to blended learning as the new normal or the new traditional model [4], implying that this model of teaching will become more common than conventional classroom instruction or purely online learning.

Learning outcomes of students who receive instruction through blended mode improves compared to traditional brick-and-mortar instruction and purely online learning. Means et al. (2013) through a meta-analysis of the empirical literature on blended learning found that there was a considerable advantage in performance of students in blended learning over that of students learning in purely classroom mode. Learning outcomes of students in online instruction only slightly exceeded the results of face-to-face learners [5], [10]. Academic leaders in US universities rate blended courses as superior to fully online courses and to classroom instruction [8].

Blended learning for foreign language teaching is favored both by students and instructors because it retains benefits of face-to-face classroom interaction and flexibility and convenience of online learning [11]. There are some other advantages to blended learning: students’ motivation and engagement in the learning process increases, their perceptions and attitudes to learning improve, as well as their performance and language proficiency [2], [4], [12], [13], [14], [15], [16]. Blended learning enables using a variety of teaching methods and interactive strategies [12], [17], provides access to learning resources, students receive immediate feedback and support [7]. Blended learning helps to implement individual approach to students, as it can adjust to individual learning styles and foster students’ autonomy. Although there is an apprehension that the process of live interaction can be affected due to reduction of face-to-face meetings [6], researchers found that the contrary is happening: social interaction increases in the classroom [7], as students can concentrate on their grammar, vocabulary, reading and writing skills doing various activities in electronic environment. Moreover, modern technology creates opportunities for students and teachers to communicate online through chats, forums, etc. Studies into blended courses of various aspects of foreign language teaching, such as general English [14], academic English [17], translation, business English [12], English grammar in context [16] also report of better learning achievement and increased motivation of students. Blended learning widens the accessibility of education for students with specific needs who have been traditionally excluded from educational process [18].

Organizing the process of blended learning ultimately benefits educational institutions as such. Implementing a blended approach leads to a better use of financial, technological and human resources [7]. Initial investments in creating blended courses are repaid in the long term, allowing further cost effectiveness [17]. Language instructors and experts are employed in a more flexible and effective way, as they can support students according to their individual needs. Another obvious advantage of blended course delivery is scalability, i.e. providing educational services to a wider audience of students [7].

Successful implementation of blended learning is possible only if some conditions are observed. Integrating technology into the curriculum and creating a blended learning environment must be one of the strategic priorities of an educational institution [11]. It implies that universities provide the necessary technological infrastructure, involve experts to create professional blended courses, arrange training of teachers participating in blended learning. Motivating and supporting students is also vital, especially at the beginning of the course, for some learners might lack the experience of studying in blended mode and they might face difficulties with self-regulation [6].

For the system of higher education in Russia, bringing technology into modern teaching methods is considered of paramount importance. The Federal law of 29.12.2012 N 273-FL (as amended on
06.03.2019) “The Education Act of the Russian Federation” (article 13, paragraph 3) states the necessity to apply various classroom technologies such as e-learning. To meet the requirements of emerging smart-society and smart-economy, the next development stage for higher education will be smart-education with its wide access to worldwide content, increased flexibility, personalization and interactive methods [19].

Blended learning for language teaching in Russian engineering education is a perfect methodological approach due to several factors. Under national educational standards for engineering education, engineering graduates must not only have knowledge and experience in their professional field, but also have foreign language skills and competence for successful communication in international professional community. A blended learning approach helps to overcome some barriers and limitations of the Russian educational environment that could hinder achieving this goal: a drop in the number of classroom academic hours, low motivation of students and not clear understanding of the role of a foreign language competence in the contemporary community, shortage of qualified educators [20]. Education policy makers in Russia realize that traditional full-time education model cannot respond to the challenges of the modern world, therefore they see the transition to e-learning and blended learning as one of the strategic directions.

Although blended learning has been employed by universities in Russia for a shorter time period than globally, Russian educators were fast to see all the benefits of this teaching model and they are trying to apply blended courses in practice. One of the successful examples is Tomsk Polytechnic University with its foreign language blended courses. Blended courses boosted students’ motivation in learning a foreign language, provided flexible, productive individual learning activities, encouraged students’ collaborative learning, increased self-study learning and helped to raise the level of self-regulation and accountability [21], [22], [23]. Khromov et al. (2016) from Moscow universities of economics also reported of their positive results from implementing blended courses of Business English; among other benefits they highlighted better outcomes in generating language competencies (reading, writing, grammar, vocabulary) and cognitive competencies; they concluded that blended model is highly recommended in Russian higher education [24]. According to Baranova et al. (2019), students’ engagement in learning process increases dramatically in the conditions of blended environment, which results in their learning outcomes [25]. Expanding the range of electronic educational resources and monitoring the students’ learning process with the help of computer technologies lead to successful formation of socio-cultural environment and enhance students’ communicative competence in a foreign language [26].

Under the current trends in the Russian education, Peter the Great St Petersburg Polytechnic University (SPbPU) is now switching to combine conventional education models with mobile online learning [27]. The University Senate at SPbPU has developed and adopted a regulation “The Provision on Online Learning Adoption and Practice and Distant Learning Technologies in higher Educational Programmes’ Implementation”. This regulation complies with the Federal Law № 273-FL from 29.12.2012 “The Act on Education in the Russian Federation”, as well as with orders and instructions by Ministry for Education of Russia, with other regulatory acts specifying and developing this issue. Online-learning is to be adopted by SPbPU in order to achieve such goals as broadening students’ perspectives, the disabled and invalids in particular; implementation of individual approach in learning; increasing the quality of education; cost optimization in educational process implementation [28].

Blended learning has been introduced in the Institute of Industrial Management, Economics and Trade (IIMET) since 2016. The pilot online course “General Foreign (English) Language. Basic course” was launched at IIMET of SPbPU in 2019, and a complete transition of foreign language teaching to a blended learning scheme is planned for the coming academic year of 2019-2020. The pilot course was developed in accordance with the SPbPU Provision on online-learning.

The subject of the research is a blended learning approach to foreign language teaching for not specified purposes. We concentrate on the practical experience of implementing this learning model at IIMET, SPbPU.
The purpose of this research is to overview the results of the experimental General English blended course at SPbPU, with the focus on learning outcomes of participating students and their perception of the new learning environment. The objectives include interpreting the data obtained from students’ language skills test, conducting a survey among students participating in the pilot blended course and analyzing the results of the survey, outlining the prospects for further development of blended learning courses in SPbPU.

1. Methods
The experimental training based on blended learning approach was organized in the Institute of Management, Economics and Trade in Polytechnic University in the period from February till June 2019. During the semester, four academic groups pursuing bachelor degree in Economic Security, totaling 81 students, were trained through blended learning techniques. The results of an entry test made it possible to form the groups so that they include students whose language level would meet B1-B2 Intermediate. The experiment was run for the discipline of “Foreign Language Basic Course” assisted by the learning pack of “Language Leader Intermediate” by Longman. The students were to cover four units of the Student’s Book: “Advertising”, “Business”, “Design”, and “Education”; each of the units took 6 academic hours at classroom and 6 academic hours of work on the Moodle platform, while they also had unlimited number of tries to complete different tasks online individually. Online tasks for each unit included three modules. Due to testing character of module tasks students were not limited in time and number of tries.

The tasks in the first module “Key Vocabulary of the Topic” were supposed to be fulfilled by students in order to revise new vocabulary in speech exercises, which was followed by further classroom vocabulary practice. This module contains not only practice tasks, but also a glossary of new words and phrases. All glossary entries are translated into Russian, recorded and transcribed for students to avoid pronunciation mistakes. The module contains 10-12 text exercises on multiple choice, matching sentence parts, filling words or phrases in gaps, or completing phrases. A lecturer does not spend any time to check these exercises, because the system performs this automatically, monitoring the time on task fulfillment, a number of tries and mistakes made by students.

The second module “Grammar Structures” provides new grammar structure explanations with exercises to practice. In addition, students were to watch a video lecture on grammatical topics of each unit presented in depth and in a user-friendly way.

We designed 10-12 grammar exercises for students to practice each structure. Those included language exercises in matching beginnings and endings of sentences, multiple choice tasks (filling text or sentence gaps with correct grammar forms), open cloze texts or phrases. All the above mentioned exercises were especially worked out on the basis of each unit vocabulary.

The third module “Listening and Writing Skills” was aimed at developing listening comprehension skills and literacy in writing. The Listening section provided students with various dialogues and monologues that contained most vocabulary and grammar of the unit under study. Students were to listen to and complete tests after each of the recorded texts. Those tests included multiple choice, gap-fill, sentence order exercises, as well as answers to questions. The Writing section consisted of linking words exercises, formal/informal style practice, etc. The exercises were designed so that the system should score students’ results automatically.

During classroom work students practiced simulated communication and communicative tasks in order to consolidate previously learned grammar and vocabulary. Students were paired or grouped to initiate classroom discussions and team meetings on unit topics. We should point out here that the students took very active part in those discussions and simulated dialogues.

There was a computer-based assessment test carried out on the learned aspects after every third lesson. The grammar and vocabulary test took 45 minutes and only comprised familiar tasks and exercises. Students had only one go at it. At the end of the semester students took a final test covering all four units which took 90 minutes at one go. Here should be mentioned that those who had been
active participants of the online course and had not missed classes did successfully at the final testing stage. The average rate of correct answers reached 82.3%. The students who had showed high rate of absenteeism and had not practiced online on a regular basis failed this final test.

The undeniable advantage of the online platform practice is that one can take numerous tries to complete tasks, while the system performs next to no time assessment and result analysis. A lecturer does not waste time on assignment check and can still have continuous control over student work, which result in boosting student motivation and better language skills.

As soon as the course had been completed, the students were asked to fill in an anonymous questionnaire. It is worth noting here that the discipline under study is a secondary one for the group of respondents. 35 students participated in the survey and the questionnaire included 10 questions of different types. Some of them were yes/no questions, whereas others needed full and comprehensive answers. Respondents had to express their opinions and define more accurately a number of hours they spent to fulfill the task and their test scores. Two of the questions were of evaluative type. Respondents were asked to rate on a scale of 1 to 10 the effectiveness and interest of the course. The questionnaire was aimed at three points:
- define the complexity level and elicit the most difficult aspects of the course;
- give account of students’ motivation level and ability to work self-consistently and responsibly;
- measure the satisfaction level with the course.

2. Results and Discussion

2.1. Comparison of students’ learning outcomes in blended learning model and traditional classroom learning

At the end of the term, the research of control and pilot groups was carried out in IIME, SPbPU. Testing was carried out in control and pilot groups. During the term, four groups (78 students) of the 1st year studied in the traditional classroom model, while four groups (81 students) were trained in the blended learning environment. The groups were selected with the same language skills corresponding to B1- B2 Intermediate Reference Level. The course content was based on the materials of learning package Language Leader. Intermediate. There were four units under the study: "Advertising", "Business", "Design" and "Education". The control groups had traditional classroom classes-4 hours a week. To study each unit these groups were given 12 hours of classroom work and some hours for doing homework. Four pilot groups were given 6 hours of classroom work, 6 hours of work in LMS Moodle and unlimited time for self-study work in LMS Moodle to practice each unit. Thus, educational process of pilot groups was based on learning package Language Leader. Intermediate with a specially-designed course of e-learning support. All the tasks of this course were developed on the basis of lexical and grammatical material of these four units. The materials of the specified learning package Longman Language Leader. Intermediate were used for teaching control groups during classroom work. Language instructors used Longman Language Leader Coursebook and Workbook, additional manuals.

After studying four units, control and pilot groups were tested. Four pilot groups of the field of study “Economic security” (81 students) took the test on-line. Four control groups of the field of study “Economics” (78 students) did the test in the traditional paper form. The following requirements were established during the testing: students were given only one attempt to pass the test; the time of testing was limited to 45 minutes; students were not allowed to use any reference and training material.

As a result of testing the following data were obtained. For the pilot groups the average percentage of test implementation was 82.3%. In control groups with traditional face-to-face learning the average percentage of test implementation was 62.5%.
Figure 1. Test results for pilot and control groups

The threshold for successful result was 60%. The test assessment scale was: 60-80% of correct answers – satisfactory; 80-90% of correct answers – good; 90-100% of correct answers – excellent.

- 5 students of pilot groups (6.2%) and 23 students of control groups (29.5%) failed the test, having received unsatisfactory grade.
- 24 students of pilot groups (29.6%) and 38 students of control groups (44.4%) got a satisfactory grade.
- 24 students of pilot groups (29.6%) and 11 students of control groups (14.1%) got a good grade.
- 28 students who studied in the blended learning environment (35.9%) and 8 students who were under the traditional classroom approach (10.2%) got the highest score and an excellent mark.

Thus, analyzing the test results, we can see that about 84% students of pilot groups succeeded in test compared with 70% students of control groups. Figure 1 shows an increase in number of students of pilot groups who got good and excellent grades: 65% of students. We have a decrease in number of students who got satisfactory grade: 29.6% of students. So, blended learning mode proves its effectiveness.

2.2. The results of the students’ opinion survey

The course under study was experimental, which implied a survey into students’ opinions so as to further revise tasks and increase their effectiveness. Overall, students were offered 11 questions in the survey. The questionnaire was filled on the voluntary basis, thus the number of participating students amounted to 35.

The first question was to find out if the content of the course was clear to students. Figure 2 shows 54.29% of students answered in the affirmative. Yet, 45.71% of respondents to the survey found the course difficult.
In order to identify any particular problems in the course of task completion, the students were asked to answer the question about the course modules which caused the most complications. The most difficult tasks were reported to be found in Key Vocabulary of the Topic Section, aimed at revising prepositions from four topics covered in the course, namely Advertising, Business, Design, and Education. We must point out that prepositions is one of the most complicated aspects in mastering English. Nevertheless, the preposition survey analysis revealed that more than 80% of students dealt with such exercises successfully. Thus, the experiment on preposition testing in Advertising Module produced 84% correct answers of students, in Business Module – 81% of correct answers, in Education Module – 83% of correct answers. This evidence means a conscious and sensible attitude of the students who appeared to be highly motivated.

The preposition section must be considered vital for students to revise because it allows drilling and revising prepositional phrases and phrasal verbs using them in simulated speech contexts and further classroom exercise. Next, students practice using prepositions in speech during real-life communication situations.

Grammar and listening exercises proved to rank second in terms of difficulty. The course provides for the following grammar study pattern: students have to watch a video lesson followed by a set of tasks aimed at revising certain grammar structures. They are also supposed to consolidate and refine grammar structures in classroom speech practice when they simulate dialogues in discussions or monologues to make up their reports on various topics. In order to avoid any problems that might arise with Grammar structures, we added some extra exercises to Self-study section. Such exercises are developed for students to be able to revise and systematically consolidate particular grammatical rules and patterns. The tasks given vary in complexity from average level to a more complex one so that a student could choose which task he/she would prefer to do first, or which of the tasks are unnecessary to complete at all.

In addition, we set a goal to monitor student motivation levels and their self-study skills, thus the students were asked how much time a week it took them to fulfill the course tasks (namely, vocabulary study, video lessons, tests). The survey showed that students worked minimum 2 academic hours (only two respondents), while maximum work time was 28 academic hours (a single respondent result). Average course activity time amounted to 5-6 academic hours. So, we can conclude, that most of the respondents to the survey did their homework, as well as self-study exercises. The Moodle platform has enabled language instructors to monitor student activity on the course study, so as to track down the time students spent to complete each of the module tasks, analyze mistakes which a particular student made, and those common mistakes typical for each of the topics and modules. We believe that such control by an instructor could be an effective learning stimulus for students resulting in their responsible and knowledgeable work on the course tasks. Another advantage of controlled student behavior is that we get an opportunity to avoid future mistakes through some previous planned activities, thus increasing the final academic achievement rates. This opportunity to monitor and
control students’ results is supposed to have increased the rate of students who worked on self-study section.

Another issue was to find out if students did practice tasks from Self-study section (see Figure 3). A half of the respondents gave positive responses (51.43%), whereas 28.57% of the respondents only expressed their willingness to take up self-study but had no spare time to do it at the time the course was available online. About 20% of the respondents were not interested in the self-study section: 8% of the students did not work on the course, and 11.43% of the groups found the section unstimulating or useless. Thus, we can conclude that the self-study section was popular with 80% of the respondents, which prove the fact that students show fairly high motivation to study this particular course and the foreign language on the whole. Students are not only willing to enhance their language skills in the course framework, but also look forward to further language advancement.

Figure 3. Students’ practice in Self-studying section

The next question in the set was about students’ final test score. This question was due to the high student activity level and their interest in the course. Judging by their responses, the minimum final test score amounted to 44%, while the maximum one was 92%, with the average score of 75%. This evidence shows that the course contributed much to the overall student academic success in mastering the language.

Another set of questions was aimed at eliciting the course satisfaction rate. Students were given a set of two questions ranking their opinions in terms of “interestingness” and “usefulness” and ranging their scores from 1 to 10 (rank the course from 1 to 10, where 1 is ‘unsatisfactory’, and 10 is ‘excellent’). The results are given in Figures 4 and 5.
The discipline “Foreign Language: Basic Course” is a secondary one for the students in this field of studies. Bearing in mind that here students put more emphasis on mathematical and economic cycle subjects, we must point out that the average score of 6-7 should be considered as quite high and particularly proving its usefulness and appeal for the most part of the students.

In order to look into students’ opinions of online course effectiveness, we asked them whether the course has been helpful in studying discipline content and preparing for getting credits at the end of the semester. Figure 6 shows that 77% of the respondents answered in the affirmative.

When asked about their preferences in the learning models in “Foreign Language: Basic Course” studies, 85% of the surveyed students preferred the blended leaning model.

In response to the question whether the work on the blended course helped students enhance their foreign language skills, 80% of the respondents admitted that their language fluency increased. The results of tests also suggest a successful course completion.
The last question we asked was to look into ways of course correction and flaws elimination. The majority of the students defined two weaknesses of the course. First, the students faced numerous technical problems during their work online; secondly, they complained about the lack of tasks variety.

The authors are currently planning to work over further course improvement so as to eliminate defects and make up for the above stated weaknesses, which is deemed to increase a number of motivated and hard-working students who might be willing to pursue online studies.

To recapitulate, from this perspective, the model of blended learning is the most effective approach in foreign language training of non-major fields of study. Blended model is in the line with the most recent trends in science and technology advances, because some technological resources enable teachers and lecturers to develop a course which could not only meet basic programme requirements, but also interests and needs of the modern student. These technologies provide an opportunity to analyze and exercise control over student studies thus increasing their motivation and self-study involvement.

3. Conclusions

In the context of the objectives of the above survey, run by the language instructors in SPbPU, it was of crucial importance to adapt a new blended learning approach in a non-language-learning environment and look into its effect on student academic efficiency. We aimed at assessing students’ opinions and outlook on the new course. The emphasis was made on levels of motivation and interest in self-study during the blended course. Finally, we set an objective to seek ways to improve the course avoiding possible limitations and drawbacks.

The pilot and control groups majoring in economics and management underwent the final testing which proved the effectiveness of the mixed learning model. Only 5% students of pilot groups who were trained in blended learning environment failed the final test, compared with 23% of failures in control group practicing traditional classroom work. There is a significant 20% increase in the average percentage of test results against control group rates. Thus, almost all students of pilot groups passed the test and much bigger number of students got excellent and good grades which increased by 40%.

Upon the course completion, an anonymous questionnaire was conducted at the end of the semester, which helped to evaluate academic performance efficiency. The students’ responses revealed two main drawbacks of the course: some technical problems and lack of variety of tasks. While students highly appreciated the course in terms of “interestingness” and “usefulness”, the questionnaire showed that preposition revision, listening and grammar structure tasks caused the most complications. Due to the fact that the final test showed good academic results in prepositions’ study, later corrections were concentrated on “Listening” and “Grammar” modules, as well as new types of exercises are being
compiled, basing on practice and simulation. In addition, we are developing a variety of simulated tasks to boost performance efficiency. Another improvement could be introducing more interactive activities to online component of the course, such as quizzes and games, which will bring some variety to the exercises, thus students will be more involved in the learning process.

The questionnaire showed high interest in this course due to the high average activity rate of 5-6 academic hours per week. So, the above stated results prove high student motivation, interest in teaching process and willingness to engage in self-study work.

Summing up the survey results, it should be emphasized that the model of blended learning appears to be an effective approach in foreign language training of non-major fields of study, since blended learning model is supported by some technological resources enabling faculty to develop courses to meet ever-changing interests and needs of the modern web-conscious and internet-minded students. These technologies provide an opportunity to monitor results in real time mode, analyze them immediately, and exercise effective control over student studies thus increasing their motivation and self-study involvement.

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