TESTING A MODEL OF DEVELOPING STUDENTS' PROFESSIONAL COMMUNICATION COMPETENCE WITHIN THE FRAMEWORK OF A SCIENTIFIC PROFESSIONAL PROJECT IN FOREIGN LANGUAGE IN A BLENDED LEARNING ENVIRONMENT

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The article deals with testing a model of developing students' professional communication competence within the framework of a scientific professional project in foreign language in a blended learning environment. The necessity of this study is caused by the amendments made to the Law of the Russian Federation "About education" regarding application of e-learning, development of online courses. However, there is the lack of research on accompanying the development of students' competence of professional communication within the framework of scientific professional project (SPP) in a blended learning environment. That is why the aim of the paper is to test previously suggested model of developing students' professional communication competence within the framework of a scientific professional project in foreign language in a blended learning environment. In order to test the model we conducted pedagogical experiment with the following participants: 350 students of the South Ural State University, 2 lecturers, 5 Associate Professors and 2 Professors. The students were divided into four groups: 2 control (teaching in a traditional style) and 2 experimental (teaching according to the suggested model). For assessing students' communication competence we elaborated a special scale with three levels: low, middle and advanced. The results of the experiment indicate that the level of mastering the professional communication competence has increased in groups where the suggested model was implemented. It definitely proves that the implemented model will contribute to improving students' world academic reputation and formulating their research findings.

Keywords: blended learning, professional communication competence, scientific professional project, online courses.

Introduction

Nowadays Russian system of higher education enables students to be trained with common and professional competences, developed in the course of their studies. The most important of them in the sense of developing university relevance on the world's arena and increasing its criteria of academic reputation are professional competences in research fields [13, 16]. For the most part, the competences refer to Master and PhD students. In spite of the fact that spheres of their professional activities may be different, they have to be ready for representing their research findings in the form of academic papers and presentations, communicating with the international academic society in foreign language (according to the Federal State Educational standards of higher professional education for different Masters' and PhD training directions) [17, 30].

Since the adoption of Federal law from 2/28/2012 # 11-FL "About modification of the Law of the Russian Federation "About educa-

tion" regarding application of e-learning and distance educational technologies", e-learning concept has become an integral component of educational process at higher schools in Russia [18]. Therefore, a number of questions have arisen to be solved. One of them is developing professional communication competence within the framework of a scientific professional project in foreign language in a blended learning environment. The model of developing this kind of competence was suggested by the authors of this article in an earlier publication and was applied in a traditional classroom teaching only [19, 29]. However, with the advent of compulsory online English courses as a support for classroom activities, it needs to be tested in a blend of face-to-face and computer mediated experiences. So, the goal of the paper is to represent the findings about testing the model of developing students' professional communication competence within the framework of a scientific professional project in foreign language in a blended learning environment.

Literature review

Blended learning

for teaching foreign languages

When considering the sphere of blended learning, such terms as e-learning and online learning are often used and should be defined correctly. Many well-known scholars have studied the phenomenon of blended learning: Boyle [4], Aspden and Helm [1], Hughes [15], Holley and Dobson [14], Chandra and Fisher [5], Gilbert [8], Lopez-Perez and Perez-Lopez [23], Boelens [3], Deegan [6], Gomes and Panchoo [12], Stockwell [27]. The term e-learning in the present paper is a generic expression for all learning involving the use of information technologies. Some disciplines seem to be studied within e-learning environment easier than others: management and law, mathematics and informatics, engineering and technology [20]. While the disciplines that deal with training professional communication skills (social sciences, linguistics) are impossible to be taught without traditional classroom training. Meanwhile, it is essential to meet the needs of all learners only in a classroom environment within a limited period of time: some students lack grammar or vocabulary training, others need more attention to listening or reading skills. At the same time, e-learning appears to be a necessary support for students' independent work for which twice more time is allocated than for in class activities in universities [28].

In this regard, for teaching foreign languages, a reasonably balanced educational environment is needed based on blended learning which is seen as a pedagogical model combining face-to-face classroom teaching and the innovative use of technologies. Therefore, one of the best decisions here is using online courses tailored specially for the purposes of a course. Just one of the debated questions set by scholars, how to blend e-learning, in what proportion with traditional teaching in class for different educational purposes and courses [21, 22].

Scientific professional project (SPP)

A scientific professional project is an overview of students' academic work in foreign language as an oral presentation or a research paper according to the generally accepted IMRaD structure [10, 24, 25].

Within the framework of a scientific professional project, students' competence of professional communication is developed and threefold: the competence of communicating information

(communicative competence), the competence of perceiving information (perception competence) and the competence of maintaining successful interaction (interactive competence) [2, 7, 26]. Within the interactive competence, students' abilities to maintain the feedback with the academic community, arouse debate and discussion on the subject presented in an academic paper or speech and to follow the principles of professional ethics are essential [9]. On the level of perception, the following criteria are valuable: the ability to understand professional jargon, terminology, arguments within a specific field of science both in oral and written forms, weigh claims in the balance, examine evidence on two sides in a case and judge, which is the weightier, reveal empathy and tolerance to the audience. The communicative competence suggests the ability to put forward strong arguments using correct grammatical structures, phonetics, professional jargon and terminology, make judgements when the evidence has dispelled reasonable doubt, persuade the academic community that the personal conclusion is safe and sound [11].

Methods

South Ural State University (national research university) was an experimental base of the study. The staff members who took part in round table discussions, Chair meetings, conducting practical English lessons and online instructors are 2 lecturers, 5 Associate Professors and 2 Professors. The pedagogical experiment covered 350 PhD students of the first and second year in two experimental and two control groups, majoring in technical, chemical, social, exact sciences. It included three stages: summative, forming and controlling

At the summative stage, a complex of diagnostic measures was carried out in order to determine the initial level of professional communication competence development within the framework of SPP. This stage included filling in the forms by experts (English teachers) where they had to put the points for different criteria of professional communication competence development while observing the way students perform at presenting their preliminary research projects. An oral presentation and a poster were assessed together, and a special scale for that, with maximum 40 points, was elaborated (Table 1).

The second stage (forming) focuses on forming experiment where the model of developing

students' professional communication competence within the framework of SPP was implemented and special skills necessary for revealing professional communication competence were developed both in classroom environment and through online courses worked out specially for the curriculum of PhD students.

Table 1
Levels of professional communication
competence development

Levels of professional communication						
competence development						
low	middle	advanced				
0-13	14–27	28-40				

The control groups were trained according to the curriculum both in classroom environment and through online courses "Developing Critical Reading Skills" and "Presenting at International Conferences" allocated on the university site by the Moodle platform. The students used online courses as a personal support when they stayed away from classes, needed to go over any topic or download supplementary materials.

The experimental groups were trained with syllabus, forms and methods selected to develop professional communication competence in a blended learning environment. For this purpose, active methods of organizing educational activity were used: presentations, case studies, games, role playing.

Presentations on the intermediate results of the research were prepared and demonstrated by students in class with follow up discussions, putting forward strong arguments, using professional jargon and terminology, making judgements on the discussed subject. Before classroom discussions, abstracts of the oral presentations were downloaded in a forum on an online course for peer reviewing, developing the ability to maintain the feedback from an academic community, arouse debate and discussion, weigh claims, and understand professional jargon and arguments within a specific field of science.

Clicker Cases, as one of the types of cases, were used to train academic vocabulary and professional terminology. The cases, depicting vocabulary units, were presented in class using a series of PowerPoint slides in parts, or stages. After each stage, students are asked to respond to questions (called "clicker questions") posed by the instructor to define vocabulary units. Before this in class activity, students study the vocabulary

online. In this way, they learn to understand academic terminology in context.

One more type of cases – Interrupted Case – was used to present a problem for students to solve in a progressive disclosure format, with the case given to students in parts to work in small groups and complete within a single class period. Students had to read an introduction from an oral presentation speech (a paper) and work in groups to propose a research question based on the issues from it. They developed a hypotheses and designed experiments to test it, which they then presented for the class to critique. After that, the instructor gave students information on how the actual authors of the paper had tackled the problem. After a description of the authors' methods, students were asked to predict the results, which they reported on when called on in class. The instructor then revealed the actual data, which students interpreted. Then the instructor revealed the authors' interpretations and conclusions. Before this class activity, specific vocabulary was pretaught through online courses. This format allowed students to practice all the aspects of professional communication competence.

For training communicative competence, Bingo and Scrabble vocabulary games were used in class to monitor pronunciation as compulsory. Online games such as Bingo, Scrabble, Crossword puzzles, ESL Games (for grammar topics) and training vocabulary and grammar exercises on online courses were optional after class activities.

To develop perception and communicative competence students did the following tasks on online course: reading academic papers on the topic of a research project and making up annotations with critical analysis on them; watching a series of Ted Talks videos with automatically checked comprehension tests. As a supplementary task, online gamification was used reading quizzes on the site www.eslgamesplus.com.

The method of role playing appeared to be the central one as it was used for acting out scientific conferences under the guidance of an instructor in class, simulating the conference scene as though it were real. Before the event, a serious preparation was done: the roles of organizing and program committees, a chairperson, conferees and a secretary were distributed among the students and the abstracts of the reports were reviewed on the forum of an online course.

Results and discussion

At the controlling stage, the authors identified the levels of students' professional communication competence development in experimental and control groups by analyzing the results from expert evaluation sheets. The sheets for assessing oral presentations contained four groups of criteria: interaction, perceptive, communicative (verbal) and communicative (nonverbal) (Table 2). For assessing a poster, three groups of criteria were used: content, text organization and visual support (Table 3). The experts completed the sheets while observing students' presenting at a training conference.

Then the data from the experimental and control groups were compared. The analysis allowed the authors to draw conclusions that the use of the model and specially selected content, forms and methods of education ensured the increase in development of students' professional communication competence.

The results from the table (Table 4) show that the students' level of professional communication competence in control and experimental groups was low before the experiment. After four months at the end of the two terms, the level of this competence changed into middle in both control groups (Figure 1). It can be accounted for a good support of online courses tailored specially for the curriculum of PhD students in English. Though they were not compulsory for students who attended classes, the courses were popular among students as they used them for training their weak points and downloading educational materials.

After the experiment the level of students' professional communication competence was increased up to advanced by 40,75 % and by 48,5 % in Groups #1 and #2 correspondingly. Interestingly, we discovered that the students from both experimental groups started to pay their attention not only to their verbal communication but also to the nonverbal signals, started using the techniques of arousing feedback (short story telling, focusing attention on three main aspects, questions to the audience, visualizing) They started to interact with their colleagues more effectively and control their nonverbal behavior.

Expert sheet for evaluating an oral presentation

Table 2

Oral explanation of a poster. Criteria for assessment (20 points)

Competences of professional communication

	Score			
Interaction component				
Ability to arouse interest to the report: questions, comments from the peers				
Perceptive component				
Understanding the contents of the reports and posters of the peers (questions, opinions, comments)				
Understanding the peers' questions (answers to the questions on the report and poster				
Communicative component (verbal)				
Grammatical and lexical range and accuracy – specific language structures and vocabulary (see the table below)				
Pronunciation				
Cohesion and coherence (using linking words)				
Fluency				
Logical flow				
Use of professional terminology				
Validity of the statements (giving reasons, premises)				
Conciseness				
Communicative component (non verbal)				
Eye contact				
Gestures relevant to the situation (restrained, used to emphasize points, out of your pockets, without folding and wringing)				
Posture (relaxed, straight, natural, feet apart, shoulders squared, facing the audience)				
Facial expression (calm, natural, a bit smiling)				
Dress code (conservative, business like)				
Итого:	20			

Table 3

Expert sheet for evaluating a poster

Poster evaluation chart (20 points)

Toster evaluation office (2% points)					
	Score				
Content assessment					
Introduction					
Gives a clear statement of a study	1				
Provides synopsis of the relevant research projects	1				
Methods					
Gives a description of procedures and measurements	1				
Gives an overview of the techniques used for data analysis	1				
Results					
Gives an account of the major finding of the project	1				
Provides graphical aids (tables, figures, graphs, charts, etc.)	1				
Discussion					
Makes clear, accurate and well-articulated conclusions	1				
Suggests practical application of the study results	1				
Relates finding to the ongoing research	1				
Considers areas for prospective studies	1				
Poster section					
Text organization					
Sequential, logically progressing information	1				
Complies with the format requirements in each section: Introduction, Methods, Results,	4				
Discussion (using bullet points)	(1 per each section)				
Sufficient linguistic competence of each section: Introduction, Methods, Results,	4				
Discussion (using academic collocations, terminology relevant to the subject)	(1 per each section)				
Visual support					
Conspicuous title and section headings, easily readable text	1				
Total score:	20				

Table 4

Experimental results

Professional communication	Control group #1		Control group #2		Experimental group #1		Experimental group #2	
competence (simple average value)	before	after	before	after	before	after	before	after
Total (max 40)	19,1	23,1	17,4	18,08	15,2	28,5	17,1	29,5

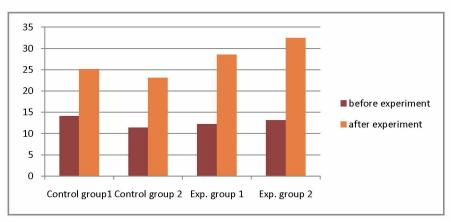


Figure 1. The level of professional communication competence development before and after the experiment

Conclusion

Thus, we tested a model of pedagogical accompaniment of developing students' professional communication competence within the framework of SPP in foreign language in a blended learning environment. The results of it proved to be successful in terms of students' presenting at training academic conferences and their readiness for presenting at real conferences. These results will definitely contribute to improving students' outstanding international academic reputation and formulating their breakthrough research findings.

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ТЕСТИРОВАНИЕ МОДЕЛИ ФОРМИРОВАНИЯ И РАЗВИТИЯ КОМПЕТЕНЦИИ ПРОФЕССИОНАЛЬНОГО ОБЩЕНИЯ СТУДЕНТОВ В РАМКАХ РАБОТЫ НАД НАУЧНЫМ ПРОФЕССИОНАЛЬНЫМ ПРОЕКТОМ В УСЛОВИЯХ СМЕШАННОГО ОБУЧЕНИЯ

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В статье рассматривается вопрос развития компетенции профессионального общения студентов в рамках научного профессионального проекта. Необходимость данного исследования обусловлена законом РФ «Об образовании в Российской Федерации», который говорит об использовании в учебном процессе онлайн-курсов и смешанного обучения. Развитие компетенции профессионального общения у студентов при подготовке научных профессиональных проектов в условиях смешанного обучения недостаточно изучено. Вследствие этого цель проводимого исследования заключается в тестировании модели развития компетенции профессионального общения у студентов, которую авторы предложили в ходе своего долгосрочного исследования. В эксперименте принимали участие 350 студентов Южно-Уральского государственного университета, 2 лектора, 5 кандидатов наук и 2 профессора. Студенты были поделены на 4 группы: 2 экспериментальные и 2 контрольные. Для оценки компетенции профессионального общения была представлена специальная шкала с тремя уровнями: низкий, средний, продвинутый. Результаты эксперимента показали, что студенты в группах, где была внедрена представленная модель, показали качественно более высокий уровень владения компетенцией профессионального общения. Было доказано, что представленная модель, направленная на повышение научной активности студентов, может быть использована в образовательном процессе университета преподавателями специальных дисциплин и иностранного языка в рамках смешанного обучения.

Ключевые слова: смешанное обучение, компетенция профессионального общения студентов, научный профессиональный проект, онлайн-курсы.

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