



The Advanced **Science**
open access journal

édition spéciale

THÈSES D'AVRIL

AVRIL 2012
FRANCE



IMPROVING ENGLISH FOR SPECIFIC PURPOSES SKILLS OF POSTGRADUATE STUDENTS IN COMPUTER-SUPPORTED LEARNING ENVIRONMENT

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At present the English language is considered to be the means of integration of the world wide process of education and science. The traditional training of graduate students in Russia focused on limited language acquisition does not provide with essential linguistic background and put an obstacle to academic mobility. These peculiarities of language acquisition in the system of higher education in Russia are analyzed in this research and the results of virtual educational environment (computer-supported learning environment) created in Belgorod State University are presented. This environment is used for ESP teaching by means of modern information and education technologies. The purpose of this project is to form and improve postgraduates and young scientists' language skills in scientific sphere. The results demonstrate the efficiency of computer-supported learning environment in the English teaching process.

The relevance of this study is connected with the social and economical, political, scientific and educational changes which are in process in Russia. These changes lead to the necessity of correction in structure and content of all forms and kinds of professional adaptation or socialization of future professionals and scientists.

The researchers focus on exploring effective teaching methods which must be directed to formation of continuous self-improvement ability of young scientists in professional and scientific work. The ability helps to react to existent changes.

At present the English language is considered to be the means of education and science integration into different parts of the world. It is evident that traditional training of higher education focused on limited language acquisition does not provide graduate students with essential linguistic background. This problem may be faced by postgraduate students.

Signs of crisis in language acquisition in the system of higher education revealed in the 1990s. Existed language teaching system (4 years) of higher education was spoiled. The system allowed teaching English for Specific Purposes (ESP). The students were taught specialist literature reading, rendering and abstracting skills. Graduate students had an interval year in language learning. Graduates had an opportunity to continue language learning at post-graduate courses in the Centre of Postgraduate Study (Aspirantura). The postgraduate language level made it possible to acquire speech communication plane for professionally oriented interaction in the academic sphere. The learning of scientific etiquette, norms of scientific reports was also included.

At present it is obvious, the integration of Russia into international science and education area and provision of academic mobility rights for graduate students are impossible without reforming of the whole language learning system in higher education. The basic principles of the Bologna declaration must be taken into account. The principles involve not only transfer to multilevel educational system. They include transfer to a new learning process structure, accounting and control system of knowledge based on the international standards, self-control and self-evaluation training of teachers and students.

Lack of National Education Standard in Russia prevents the existing foreign languages teaching system in higher education institutions and postgraduate courses from effective restructuring. National Education Standard is dictated by the principles and norms of the Bologna declaration. In this respect class hours and extracurricular hours for foreign languages learning in higher education institutions (which are not specialized in language learning) are reduced. There are no formal criteria for converting of curricular modules and courses between Russian and European universities.

There are contradictions between demands based on a level with the highest world standards to graduate students and real language background of most higher education institutions in Russia. This fact stipulates search of effective ways for overcoming these contradictions and development of new strategy of language training at postgraduate courses.

We believe that in Russia for effective transition to Bologna Convention and improvement of language learning of students and postgraduate students the following steps must be done:

- to take into consideration progress of Russian education system combining linearity and modularity, fundamentality and pragmaticity;
- not to count on improving of language level in school because of class hours release in higher education institution in the nearest decades;
- to consider improvement of language culture of postgraduates and native language teaching as a necessary aspect for successful foreign language teaching;
- to take into account the fact that enhancement of language level of students is impossible without skills improvement of teachers of foreign languages department thereby they are involved in teaching and educational activity on subject “Professional Foreign language”. They should participate in academic scientific conferences, grading of entrance examination for postgraduate courses and examinations for Candidate degree;
- to form studied system of module education in every higher education institution together with Common European Framework of Reference for Languages. The level is proved by international tests and recorded in cumulative files of graduates.

In the Center of Graduate Study of Belgorod State University virtual educational environment has been created for improving the teacher’s training level. Many foreign and Russian teachers point out some advantages of using Virtual Learning Environment [1, 3, 10]. The virtual educational environment will help to update language learning system of postgraduate students for effective international written and oral science communication, academic mobility. This educational environment improves postgraduates’ language learning process taking into account their scientific specialty and characteristics of cognitive awareness. The virtual educational environment of postgraduates’ foreign language learning is directed to:

- development of e-learning system for teacher’s training at postgraduate courses by means of information and education technologies and indirect contact of students and teachers;
- organization and methodical module for authors (teachers) of teaching materials for “Foreign Language” package;
- organization of training courses for authors of teaching materials to follow up postgraduates’ foreign language acquisition;
- development of teaching materials for foreign language distance education of postgraduates;
- formation of e-learning data portal which allows to develop and computerize all sides of postgraduate’s learning process;
- development of electronic teaching materials for foreign language taking into account the scientific specialty;
- development of methods and means for off-line work with education content exported from the network version of information and educational environment for local use on CDs;
- development of news forum “Innovatik” which gives postgraduates an opportunity to find like-minded people in the world of scientific community;
- facility of access to catalogues of library electronic resources: catalogues of books and teaching materials, Internet-resources and library server;
- organization of on-line consultations for postgraduates;
- organization of on-line conferences, educational chat forums in a foreign language;
- development of computer-assisted system for quality evaluation monitoring of postgraduates’ foreign language level;
- development of e-learning system strategy in the teacher’s training courses in the Center of Graduate Study (Aspirantura) in Belgorod State University.

The purpose of this project is to form and improve postgraduates and young scientists' language knowledge in scientific sphere.

The tasks of this project are following ones:

- to find out main problems and identify postgraduates and young scientists' language level;
- to prove theoretically the necessity of formation and use of computer-supported learning environment for improvement postgraduates and young scientists' language level;
- to develop computer-supported learning environment for improvement postgraduates and young scientists' language level;
- to do research and experimental work for checking performance improvement of computer-supported learning environment;
- to analyze the results obtained in the process of learning for further improvement of computer-supported learning.

Nowadays distance education, especially foreign languages distance education, is becoming very popular. It must be explained by the following facts:

– this type of education is effective for postgraduates as correlation of individual study and the help of teachers is observed. While learning a foreign language a postgraduate makes many mistakes during the individual study. These mistakes are happened not to be noticed by postgraduates as a correct answer may be unknown for them. In this case the help of the teacher is necessary as mistakes are pointed at and grammar rules are explained by a teacher in a simple way.

– distance education of foreign languages allows to plan an student's own schedule of classes (time, duration, sequence);

– postgraduates may choose the sequence of tasks (they may return to studied units, do exercises not chronologically);

– this type of education guarantees regular classes, this fact is very important for teaching a foreign language.

The model of language teaching of postgraduates is conducted on the base of module education. In spite of frequent use of terms "module approach", "module" in educational rhetoric there is no common definition for this term. In a general sense a module is considered to be a unit of subjects which form definite interrelated entirety as a part of the curriculum. In a narrower sense, especially in methods of teaching languages a module is considered to be:

• a topic which is supposed to be studied during definite number of academic hours (in the context of the content);

• educational units such as speaking, listening, reading and writing (in the context of the kinds of speech activity);

• language aspects such as vocabulary, grammar, phonetics (in the context of language structure);

• level of foreign language knowledge (in the context of material complication)

• educational material for different groups of students (beginner, academic, etc) in the context of didactics.

Common feature of the term module in a general and narrower sense is an idea of self-dependence and non-interaction of an educational module proved by its topic circularity. At the same time a module is a part of a system.

Important components of a module as applied to foreign language learning in the Center of Graduate Study are the following ones.

• Module is a self-dependence, logically and structurally completed information unit.

• Modules have linking components. For example the modules "Language for scientific communication" and "Professionally oriented scientific communication" have a linking component with the module "General English". This component is grammar but their lexical meaning is different. However, it relates to sublanguage of chemistry.

• Module has its own special software and methodical support: program of actions, methodical instruction for executing work and reaching aims. Topical units are presented in details. The purpose, forms of teaching (lectures, practical classes, seminars, creative activities, self-guided work), the

essential level (knowledge, abilities, skills which are necessary for successful learning of this module) which can be checked by test methods, working hours and duration (semester, several semesters, several classes) are also presented in details;

- Module learning ends with obligatory form of control. Forms of accountability, oral and written control, content, certification time.

Taking into account all these facts an educational module may be defined as a self-dependence, logically and structurally completed information unit which has linking components with other information units. It has its own special software and methodical support directed to form necessary knowledge, abilities, and skills in a definite academic period and ended with a definite form of control.

It's necessary to note that educational process organized in a module format allows arranging the modules in different order, taking into consideration the given linking components, material and other resources. Thus, the basic course "English language" in bachelor and master's degree curriculum is given in linear trajectory of teaching, and in the post-graduate course curriculum the consistent row of modules (for example, grammar module, phonetic or discursive) can be completed with the additional modules permitting to carry out the expanded trajectory of teaching in which the modules can be overbuilt and built into the research work and practice.

In the 1990s one of the main ideologists of using IP technologies in education, M. David Merrill, pointed out that "Information is not instruction". This statement appeared to be the most controversial question discussed in the pedagogical society of the last ten years. Though Merrill, the professor of educational technologies in Utah University, put his comments on the unsuitability of many net educational resources, his statement reflects the fact, that it's easy to get absorbed in technological side of education, based on new informational technologies, – to the detriment of the true results of education [9]. We can definitely say that pedagogical comprehension of the processes connected with the usage of new informational technologies in education fall behind the advanced sphere of technologies. It is necessary to find a qualitatively new approach to the creation and usage of educational materials.

To solve this problem we need either new tools (such as modern multimedia educational materials, computer equipment, integrative informational educational environment, electronic learning portals), or new informational educational technologies (distant educational technologies and, in particular, pedagogic design).

Educational resources get the pedagogic value just in the case of their integration into the educational process, if they provide the surplus to results of education. For this purpose the educational resources should be accordingly designed and used [9].

"In recent years it has been acknowledged that the Internet has changed the direction, time, and location of learning", states Dr. Abraham Rotem [10].

At present to create in BelSU a computer-supported learning environment the patented system of distant learning "Pegas" is used. The system is based on world-known system of Internet learning support (LMS) Moodle [6], and aimed at organizing of learning process by means of Internet technologies. Due to its opportunities students can study virtually, getting the access to the most of the learning materials, and the teacher can organize the process of study in a more effective way. The concept of the environment is based on the idea of social and constructive pedagogy and is oriented to the involve the learners into the construction of their own knowledge, studying through the cooperation and discussion.

The learning material presented in "Pegas" includes different educational materials, abstracts of courses, resources, tasks, topics for discussion [7, 8].

Any presented material for self-training, carrying out the research, discussing, such as a text, illustration, web-page, audio- or videofile can be regarded as a resource. To create web-pages there is a visual editing program. It helps a teacher who doesn't know the language of HTML format to create web-pages easily, including elements of formatting, illustrations and diagrams [7, 8]. P. Dillenbourg indicates, "A virtual learning environment is a social space. Social space can be represented explicitly. For instance, students may leave trace of their presence in a room or on a page. Viewing which area has been visited by other students is an indirect mode of interaction" [3].

To prepare and organize the training in “Pegas” a teacher can use the selection of elements of the course including

- glossary
- resource
- task
- workbook
- message board
- chat
- wiki
- lesson
- test and so on

Due to varying the combinations of different elements of the course a teacher can organize the learning of the material in such a way that forms of the training could correspond the aims and tasks of definite lessons.

There are three types of formats in “Pegas” system: forum, structure (educational modules without calendar binding), calendar (educational modules with calendar binding). The courses are supplied with special keys, providing limited access to educational materials of the course. The access is possible only for registered learners.

The system also provides interactive communication of educational process participants in the form of chats using message board and exchange of messages containing among them the tasks for students, the solutions of the tasks and comments. The system operates in any format file exchange either between a teacher and a student or between students. The mail service allows informing all the participants of the course or separate groups about the current events promptly. The message board gives the opportunity to organize the exercise discussion of the problem, including group discussion. It's also possible to attach the files of any format to the board messages. It is also possible to estimate the messages either for teachers or for students. Chat allows to organize the online exercise discussion of any problem. The services “Message Exchange”, “Comments” are designed for individual communication between a teacher and a student, reviewing of the works, discussing of individual educational problems. The service “Teachers’ Forum” gives teachers the opportunity to discuss professional problems.

The important peculiarity of “Pegas” system is the ability to keep each student’s portfolio including all his works, marks, teacher’s comments and all board messages. The teacher can create and use any system of estimation inside the course curriculum. All the marks of each course are kept in a consolidated form. “Pegas” system helps to control the frequency of arrivals, students’ activities, time of their work within the system.

Thus, the basic features of “Pegas” system are:

- The system is designed taking into account achievements of modern pedagogy with the emphasis on interaction between pupils, discussions.
 - It can be used both for distant, and for day-time training.
 - It has simple and effective web-interface.
 - The design has a modular structure and can be easily modified.
 - Students can edit their user credentials, add photos and change the numerous personal data and attributes.
 - Each user can specify the local time, thus all dates in the system will be converted for him into the local time (time of messages in forums, terms of performance of tasks, etc.).
 - Various structures of courses are supported: "calendar", "forum", "thematic".
 - Each course can be additionally protected by means of a codeword.
 - There is a set of variable module-components for courses – Chat, Forum, Glossary, Workbook, Lesson, Test, Questionnaire, Scorm, Survey, Wiki, Seminar, Resource (in the form of a text- or webpage or in the form of the catalogue).

- The changes which have occurred in a course since the last arrival of a user, can be displayed on the first page of a course.
- Almost all kinds of typed texts (resources, forum messages, records in a writing-book) can be edited by WYSIWYG RichText-editor.
- All marks (from Forums, Workbooks, Tests and Tasks) can be gathered on one page (or in the form of a file).
- The full report of system arrivals of a user and his work with diagrams and details of work on various modules is available (last arrival, quantity of perusals, messages, the records in a writing-book).
- E-mail setting is possible, including posting of news, forums, marks and comments of teachers.

All courses can be divided into categories, and the search can be arranged according to their names, that gives the opportunity to use of a considerable quantity of courses in the system. The safety of the system is paid much attention to (to the storage of passwords, data processing of forms, data storage). The two-level subsystem of themes allows changing external shape of system flexibly.

It must be pointed out that English for Specific Purposes (ESP) has become one of the most prominent areas of EFL teaching today. English for Specific Purposes is described by Nicholas Delgado as the opposite of English for General Purposes [2]. Laurence Anthony states, "ESP can but is not necessarily concerned with a specific discipline. ESP should be seen simple as an 'approach' to teaching" [5]. Hutchinson admits "ESP is an approach to language teaching in which all decisions as to content and method are based on the learner's reason for learning"[4].

«English language course for post-graduate students» was developed on the basis of the listed characteristics and possibilities of "Pegas" system.

The whole course includes 11 blocks (according to branches of scientific specialization):

- English language for Physical and Mathematical sciences and Technical Sciences
- English language for Chemical and Biological sciences
- English language for Historical sciences
- English language for Economical sciences
- English language for Philosophical sciences and Cultural sciences
- English language for Philological sciences
- English language for Law sciences
- English language for Pedagogical and Psychological sciences
- English language for Medical sciences
- English language for Sociological sciences
- English language for Earth sciences

Each block includes three modules:

- Reading: work with a scientific text;
- Audition: work with authentic audio materials;
- Writing and summarizing.

For example, Module 1. Reading: work with a scientific text.

The base of the given module structure is the texts directly connected with scientific specialization of post-graduate students and young scientists. The sources of such texts are books and the scientific magazines of corresponding scientific branch containing a significant amount of terms, necessary for postgraduate students in the course of scientific work.

The work was carried out with the first-year-post-graduate students and included the following action items:

– The introductory seminar. The presentation of a course and possibilities of formation of English language speaking skills for the special purposes were discussed at the introductory seminar. All the possibilities of computer-supported learning environment in "Pegas" system of distant learning were described;

- All postgraduate students have been divided into groups, according to their scientific specialization (10 persons in a group) and the tutor (supervisor) was fixed for each group;
- The groups of the postgraduate students participating in experimental work were registered and they were enrolled in one of blocks «English for ...», according to their scientific specialization;
- The students wrote an entrance test to define their level of English language, according their scientific specialization;
- The schedule for each group of post-graduate students has been made. At this particular time the tutor was in a resource together with learners and could react most operatively to any question, and also check up and estimate the carried out tasks. In the rest of the time post-graduate students worked according to the individual educational trajectory. To check the tasks each tutor had 40 hours, that is 4 hours for one post-graduate student. The time spent in forums and additional consultations was not included in these 40 hours and therefore was not fixed in the schedule.
- The accomplishment of course tasks «English for...» by post-graduate students and the assessment of the accomplishment of the tasks by the tutor;
- Final test.

To define the accuracy and lines of subsequent correcting of the course of experiment the control tests were hold during the experiment. The initial test of training experiment was aimed at eduction of the entrance level of English language for special purposes of post-graduate students and their readiness to work in computer-supported learning environment, and also the calculation of the improvement index of ESP possession level.

Revealing of entrance level of English language for the special purposes of post-graduate students is defined by the practical test (Appendix). By means of the test including practical tasks (reading of the special text, usage of the scientific thesaurus), the levels of ESP possession were defined. Final distribution of students into groups according their levels of language for the special purposes after the entrance test is presented in Table 1.

Table 1.

Distribution of students according to the levels of knowledge of English language for the special purposes (entrance test)

Groups	Levels					
	low		medium		high	
	Students	%	Students	%	Students	%
Experimental group -1	4	40	5	50	1	10
Experimental group -2	8	80	1	10	1	10
Experimental group -3	6	60	2	20	2	20
Experimental group -4	4	40	4	40	2	20
Experimental group -5	8	80	1	10	1	10
Experimental group -6	4	40	5	50	1	10
Experimental group -7	3	30	6	60	1	10
Experimental group -8	5	50	4	50	1	50
Experimental group -9	6	60	3	30	1	10
Experimental group -10	7	70	2	20	1	10
Experimental group -11	5	50	3	30	2	20

On graduating the course students were asked to pass a computer test again, taking into consideration their scientific specialization.

The generalized results of the changes are shown in Table 2.

Table 2.

Distribution of students according to the levels of knowledge of
English language for the special purposes

Groups	Levels					
	low		medium		high	
	Students	%	Students	%	Students	%
Experimental group-1	2	20	6	60	4	40
Experimental group -2	5	50	3	30	2	20
Experimental group -3	2	20	4	40	4	40
Experimental group -4	2	20	4	40	4	40
Experimental group -5	4	40	4	40	2	20
Experimental group -6	1	10	5	50	4	40
Experimental group -7	1	10	6	60	3	30
Experimental group -8	3	30	4	40	3	30
Experimental group -9	3	30	3	30	4	40
Experimental group -10	4	40	3	30	3	30
Experimental group -11	3	30	3	30	4	40

Thus, the results of experimental work show that the students' qualitative mastering of knowledge and formation of skills in the given field took place due to realization of the developed technology of English language training according to scientific specialization of post-graduate students and young scientists and by means of training realization in computer-supported learning environment.

Conclusion

1. Experimental work at post-graduate students' ESP training in computer-supported learning environment included:

- the ascertaining experiment aimed at revealing of the basic level of ESP possession by postgraduate students and young scientists.

- the forming experiment aimed at working out and introduction of computer-supported learning environment for training of ESP to post-graduate students.

2. The carried out diagnostics of initial levels of ESP possession by post-graduate students and young scientists shows a problem connected with insufficient level of possession of English in sphere of professional communications and the requirements to level of language competence of the modern young scientist. Thus, there is a necessity for working out a learning environment, considering requirements of post-graduate students and young scientists in a connection with modern computer-supported learning techniques.

3. Forming experiment included two stages of search and training. At a search stage there has been developed a computer-supported learning environment for ESP training of post-graduate students.

4. The organizational-conceptual model of post-graduate students and young scientists training to study ESP in computer-supported learning environment and to use the received knowledge in practice includes motivational-targeted (purposes, communicative interaction, educational motives), conceptual (the basic elements of formation of professional communicative competence of the young scientist), process and activity (methods, means and forms of study), result-estimated (criteria and indicators of efficiency of preparation of post-graduate students and results of training) components.

5. The training stage of experiment has been aimed at putting into practice the computer-supported learning environment at development of «English for ...» course and checking the efficiency of preparation of post-graduate students and young scientists to use the skills formed.

6. The creation of computer-supported learning environment has allowed making the process of training more technological with sequence of procedures and the operations providing steady movement

of the subject of training to the set purposes, constant operative feedback and control of productivity of training of each student for achieving of the guaranteed success.

7. During experimental work the positive dynamics in development of English for special purposes has been revealed that is a consequence of computer-supported learning environment. The methods of mathematical statistics used at processing of results of experimental work have helped us to establish the presence of statistically significant influence on learning efficiency of post-graduate students and young scientists.

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