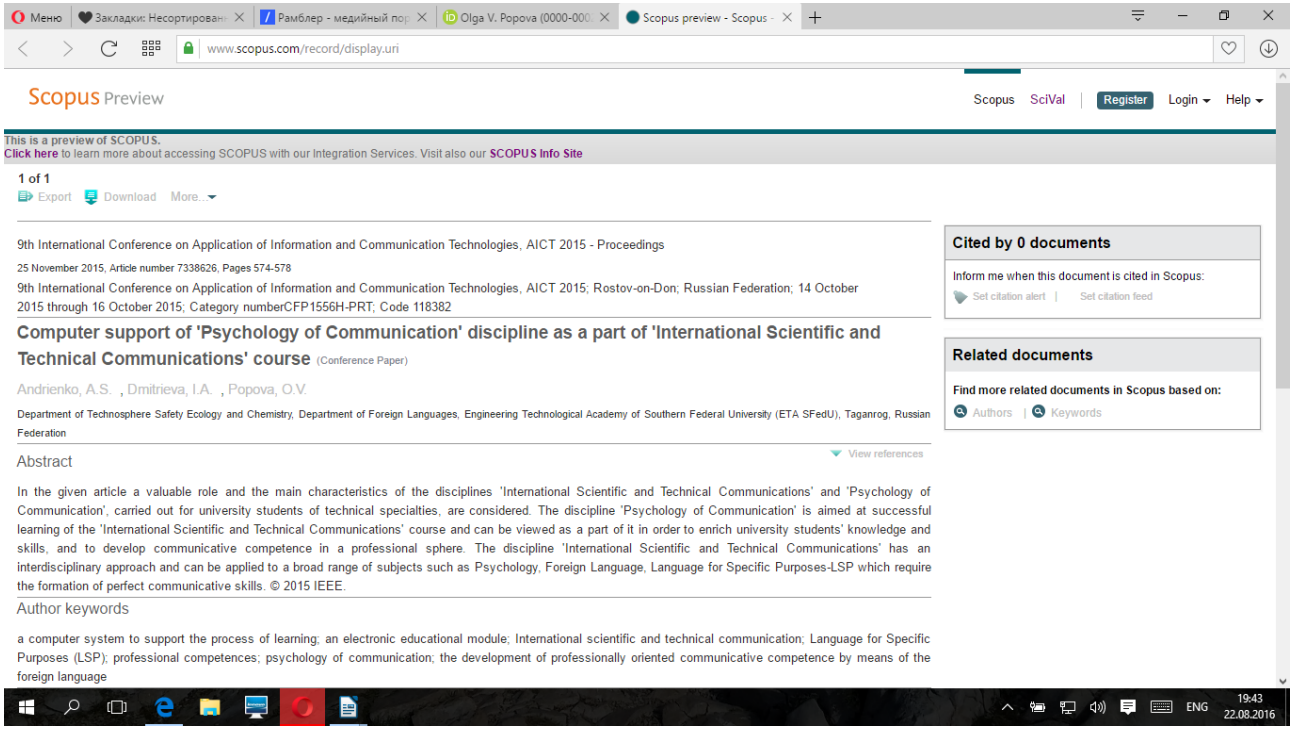
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Computer support of 'Psychology of Communication' discipline as a part of 'International Scientific and Technical Communications' course (Conference Paper)
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Author keywords
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SESSION 6. ICT IN EDUCATION, HUMANITIES, SOCIAL SCIENCES AND RESEARCH

2015 9th International Conference on Application of Information and Communication Technologies (AICT)

Computer Support of "Psychology of Communication" Discipline as a Part of "International Scientific and Technical Communications" Course

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***Abstract*—In the given article a valuable role and the main characteristics of the disciplines "International Scientific and Technical Communications" and "Psychology of Communication", carried out for university students of technical specialties, are considered. The discipline "Psychology of Communication" is aimed at successful learning of the "International Scientific and Technical Communications" course and can be viewed as a part of it in order to enrich university students' knowledge and skills, and to develop communicative competence in a professional sphere. The discipline "International Scientific and Technical Communications" has an interdisciplinary approach and can be applied to a broad range of subjects such as Psychology, Foreign Language, Language for Specific Purposes-LSP which require the formation of perfect communicative skills.**

***Index Terms*—International scientific and technical communication, psychology of communication, an electronic educational module, a computer system to support the process of learning, professional competences, the development of professionally oriented communicative competence by means of the foreign language, Language for Specific Purposes (LSP).**

I. Introduction

Modern society needs information services to process efficiently a vast amount of information. Universal technical tools for processing of any kind of information are computer technologies that play a valuable role in the development of intellectual opportunities of a person, society in general, and means of communication, using computer technologies, serve for communication and information transmission. The emergence and development of computer technologies are a necessary component of the process of informatization of a society. This spread has affected the branch of education abroad and in Russia as well. Electronic databases, documents and other innovations help with searching data and information processing. Electronic manuals and textbooks are considered to be the innovative means allowing to save time and to give students the opportunity to be successfully acquainted with all elements of a studied course as a combined unity.

The process of communication can be viewed as a complex, multidimensional process of establishment and development of contacts between people generated by a need for joint activity, including the exchange of information, development of a common communication strategy, perception and understanding of a partner in communication The social meaning of communication is that it is a means of transmission of cultural forms and social experience. During the course learning specificity of communication is determined by the fact that the subjective world of one person to another is revealed. The process of communication is self-determined and reveal a person's individual characteristics. The form of interaction can be judged on communication skills and character traits on the specific organization of a voice message from the point of view of common culture and literacy [6].

II. Problem Statement

However, there is a problem which consists of the lack of a uniform electronic educational and methodical complex, which goes with the fast rate of the development of the psychology of communication that would allow to provide the necessary materials for the successful teaching and learning of the course.

With the development of information technologies, there is an opportunity to unite theoretical material, self-checking, control of knowledge, etc. This opportunity is realized by the application of computer aids to automate procedures of the course materials by the possibility to switch quickly from one section of materials to another, to have a quick access to description of tasks, and test control means for receiving fast results.

We have developed a computer system to support the process of learning of the course "Psychology of Communication" on the functionality similar to the electronic manual. The electronic textbook was created using hypertext technology, supplementing or partially (completely) substituting the textbook, and has been officially approved as this type of publication and contains a systematic exposition of the discipline (specific section) corresponding to the curriculum of the discipline [9].

The disciplines "International Scientific and Technical Communications" and "Psychology of Communication" have been worked out for the university students of technical specialties. The aim is the successful learning of the "International Scientific and Technical Communications" course because a lot of students have a certain lack of communicative competence in the sphere of professional communication.

Traditional and innovative technologies (seminars, interactive and design forms, lecture problem's visualization, role plays and business games, psychological training are used in the organization of the process of the discipline "Psychology of Communication".

III. Methodology

The discipline "Psychology of Communication", based on IT platform, alongside with "International Scientific and Technical Communications" course, is developed to help undergraduate and graduate students to acquire necessary skills and to form competencies valuable for communicative practice during professional training, research work, and different forms of students' academic activities, including academic mobility, and gaining professional experience through international interaction.

The importance of studying the disciplines "International Scientific and Technical Communications" and "Psychology of Communication" in a foreign language ("Language for Specific Purposes" discipline) will give students the opportunity for successful professional collaboration with foreign specialists.

Core qualities and the valuable features for productive communication, such as empathy, friendliness, authenticity, concreteness, immediacy, openness and acceptance of feelings, confrontation, and self-knowledge, used in the process of learning of the discipline "Psychology of Communication", are considered.

To support the process of learning of "International Scientific and Technical Communications" course, an electronic education module for the "Psychology of Communication" discipline and a computer system were carried out.

As a result of the learning of the discipline a student has to know:

- the structure of the business of scientific and technical communication and the factors, influencing the successful communication;
- the modern technology of effective verbal communication;
- the modern technology of effective nonverbal communication;
- the technology of effective listening to partners;
- the efficient methods of negotiation;
- the technologies of overcoming conflicts;
- the effective methods of removing the stress, and maintaining high efficiency when a person works under the condition of a constant stress.

A student has to be able to:

- navigate in a variety of useful communication technologies;
- use modern technologies of effective business communication, the art of active and reflective listening, the methods of argumentation (effective request, confident refusal);
- apply the techniques to establish contacts with partners in communication, and to overcome the communication barriers;
- consider the ways of manipulative confrontation influence in communication and methods of conflict resolution;
- apply modern techniques of self-regulation in communication.

A student has to be an expert in:

- using modern techniques of effective verbal communication: the logical and the psychological reasoning;
- receiving active and reflective listening;
- observing the skills in communication;
- manipulating with skills, recognizing techniques and conflict resolutions;
- removing stressful conditions, working in conditions of difficult communicative process.

The computer version of the textbook has the following advantages in comparison with the paper manual:

- the speed and convenience of the process of studying the materials and tasks of the course due to the representation of these elements in the structured and automated navigation between elements of the course, allowing students to concentrate on learning the course content, and the speed of a test control, the easy registration of answers, and the immediate withdrawal of test results;
- the training material is divided into independent subject modules with a complete idea of theoretical material of a course that promotes individualization during a training process, a student can choose from a range of learning options: a full course of study on the subject or just specific topics. Ordered and structured storage of materials facilitate access to them (there is no need to refer to a paper version of the individual materials);
- the elimination of negligent filling during a test control: the answers to the questions are presented in a readable form, the questions themselves are served consecutively. If one or more questions have not been answered, the system informs about it;
- the ability to search for existing material allows to go quickly to a specific section of the textbook;
- test results of a student's success are displayed on the monitor, that allows a student to get rid of waiting for the teacher's evaluation;
- electronic textbooks in a certain modification can be used for a distance learning when the teacher and the student are separated by time or space.

Nevertheless, electronic textbooks have also some shortcomings:

- the lack of face-to-face communication between a teacher and a student can reduce the efficiency of a course. It is known that the joint study often leads to the best results of training and better learning outcomes. That is why we would not consider an electronic textbook, as a full alternative to other productive ways and methods of learning.
- the static electronic textbook is also a disadvantage because, if it is necessary to make any amendments to the material in the electronic textbook, as well as to change the content of a test; as a rule, it is necessary to address the experts in the field of IT technologies.

The electronic textbook, as well as any program, can have problems with working capacity in some operating systems (not of the most widespread). On the computer the necessary software has to be established (for example, the browser for viewing HTML-applications, the browser and Apache server for viewing of PHP-applications, codec allows to view videos, etc.).

From the point of view of a user the following requirements to the information system (IS) have been revealed - the user has to be given the opportunity:

- to look through the course materials (lectures, etc.);
- to have fast switching between sections (by means of the contents);
- to go to a specific section by searching for words;
- to pass a test control of a course; if, passing the test a student does not have the answer to any test question, the program should provide him with these questions until he does not answer them;
- when passing any topic or the passage of the test, the results and interpretation should be issued immediately;
- the issuance of the test results must be reported to the number of correct answers;
- to view the presentation on the subject "Communication Psychology";
- to view multimedia content;
- To contact the developer via email.
- The computer system to support "Communication psychology" course learning is an application consisting of a file with the extension of HTML and Javascript. This is a set of related pages containing hypertext information, as well as the code for Javascript and CSS styles.

Each HTML file system has a clear structure in a form of a table with the following fields:

- the heading of the page (header),
- the navigation menu (menu),
- the main unit of information (content).

In the left part of the page is the navigation menu, helping the user to move quickly from page to page by clicking on the links. In terms of HTML, a menu is a table, where each row is a hypertext link to another page. Changing the appearance of the active menu item is implemented by cascading style sheets and scripts of event handlers.

We used the database MySQL, as it is the most common and is used by Web servers, built on a rational model (the well-known and understandable for developers), it is characterized by the simplicity of the structure of data and tabular representation of data with sufficient clarity. In addition, this database is free software, good for use on a network, as it works quickly and reliably, while providing ample opportunities for data protection. We have used the development environment Joomla 2.5, as it is freely available. To work with the database, the management, database system (DBMS) phpMyAdmin, which is also freely available, is used.

The developed computer system gives users the opportunity to familiarize themselves with a training course "Communication psychology": to learn the working program of a course to study theoretical material, and to consolidate the gained knowledge with self-control issues.

Features of the system: to display the program correctly resolution of 1366×768 is recommended, screen has 16:9 proportions; to move through pages of e-course a student should use the navigation menu on the left side; when passing the test, it is necessary to give answers to all questions. Otherwise, the system will provide the missing issues. Immediately after the test the given results will be presented to the user; viewing multimedia content is available with the help of the Internet.

During this work the computer system to support the learning of "Communication psychology" course by students was developed. This system allows the user to examine theoretical materials at the rate, to see the presentation and the video on this subject, and also to pass a test control to check the gained knowledge. Besides, the administrator has an opportunity to add material to the system or to change it.

Is is realized by means of the HTML hypertext language, the javascript and PHP programming languages, and the appendix, to work with it requires the web browser and the server.

During testing of the developed product the conclusions were drawn on the usefulness of the system and its suitability for the usage in the educational process.

Nowadays, the software market is changing quickly enough, therefore, the developed system has to be in line with the rates of modern technologies of software development. The ways of upgrading include: modification of the content, functioning modification, the addition of support for new types of tests, and adding a multimedia content.

In today's society we can observe an intensive development of information technology in the sphere of education [8] which also needs to keep pace with the times to supply the labor market with skilled, well-trained staff, to facilitate the work of the staff of the institution, since computerization can automate routine tasks, such as

handling multiple data, the definition of average performance, summarizing and identifying specific patterns of learning.

Thus, the relevance of the work consists of the introduction of new technologies in education, improving the quality of the received knowledge [3]. It goes without saying that there is a significant difference in the creation and usage of multimedia electronic educational resources, consisting of visual or audio content, compared to printed manuals [4].

As a basic systemic sign of the division of computer training systems for the management of the organization we can single out:

- a kind of learning activities (individual and classwork);
- the didactic purpose.

As far as a didactic purpose is concerned, a computer training system is divided into the following types:

- information to enable the direct channel;
- control to provide a return channel;
- training, providing closed loop control [7].

The control unit is responsible for the educational content of lectures and practical material (text, video lectures, presentations, exercises, checklists). The training unit is responsible for providing the students lecture materials, and practical classes. A personal student's profile with the results is the so-called student's card which contains all the grades, received by the student, and keeps the progress of his work. A block of interactive prompts is the novelty of the unit module with the help of which the checking unit will evaluate the results of the work of a student through special interactive tasks in a course of lectures.

The main functions performed by the teacher are:

- the course editing;
- the lectures redaction;
- analyzing practical tasks;
- correction of interactive tips;
- viewing the results of the trainees.

A distinctive feature of this training module is to introduce the interactive prompts. A block of interactive prompts is a system of questions embedded in a series of lectures with a set of multi-level prompts.

This structure, based on prompts, can be represented as a multi-level process of development of theoretical material. In our method the development of theoretical material is represented by the following levels to support students' activities:

- Level 1 - stimulation (species), reproduction, the work on the given sample, model;
- Level 2 - allusion (indirect hint);
- Level 3 - paying attention to the conditions of the problem;
- Level 4 - showing ways to solve;
- Level 5 - explanation [5].

During this kind of work the features of the functioning of the electronic training module for implementation in the process of learning "Psychology of communication" course have been identified [6]. The architecture of e-learning module on the course "Psychology of communication" has been developed. The models of student's work and a teacher's activity in the module, and the description of the unit of interactive prompts have been given.

In social psychology, interpersonal communication category is considered as the unity of two components: the interpersonal communication that takes place between people of the same cultural environment (intra-communication) and the intercultural communication, which refers to the exchange of knowledge, ideas, thoughts, concepts and emotions between people from different cultures.

Intercultural communication has a number of features that make it more complicated than interpersonal communication.

"International Scientific and Technical Communications" course for the students of technical specialties an electronic educational module for the "Psychology of Communication" course and computer system to support the process of learning have been carried out to in the foreign language as well to give students the opportunity for successful professional collaboration with foreign specialists. The Language for Specific Purposes discipline gives students the possibility to transfer the acquired knowledge in the native language in the process of international cross-cultural communication [1].

The following significant, in our view, obstacles towards the effective cross-cultural communication can be revealed in the field of psychology:

- the assumption of similarities: the participants of intercultural communication identify themselves with someone; the lack of awareness that communication is a unique human feature, reflecting the cultural and social development of the individual;
- linguistic differences: the participants of intercultural communication, with insufficient formation of linguistic (language, speech) and social competences cannot adequately reproduce their thoughts and express their intention;
- erroneous interpretation of non-verbal communication: in every non-verbal culture: the behavior is a significant part of the communication message, so it is difficult to perceive the non-verbal language of another culture fully;
- the negative evaluation of the communication of the partner. This obstacle in the process of intercultural communication is based on the socio-cultural differences and may contribute to a negative effect during the communication process;
- heightened state of anxiety and tension; this condition can lead to an imbalance of thoughts' processes and behavioral norms [1].

The need for professional foreign language communicative competence development of students' of a

technical college actualizes the necessity to overcome these obstacles in the process of intercultural communication [1, 2].

The formation of the communicative competence is a complicated process which can be more successful and efficient on condition that students will have the opportunity to be acquainted with the components of the competence, the peculiarities, core qualities and the features of the process of communication on the base of the courses "International Scientific and Technical Communications" and "Psychology of Communication", computer technologies, skills of programming and informatics, and the foreign language to provide valuable professional communication with international specialists.

In this connection, the integrative characteristic of a personality can be defined as the dynamic system that has the following components:

- cognitive which includes informative processes: perception, memory, thinking, imagination;
- regulatory, including emotional and strong-willed processes and providing ability of the subject to self-control activity and self-checking, to have an impact on the behavior of other people;
- communicative which is realized in the process of communication and interaction with other people [1].

Generalizing the considered characteristics of the essence of competence-based approach to education, it is possible to allocate the following groups of professional qualities which the competent specialist of higher education institution has to possess:

- the wide radius of functioning, demanded when performing diverse types of social and professional activity; informative, regulatory and communicative qualities;
- the narrow range of action, professions, necessary for the performance of certain kinds and relations, such as "person -person", "person-technician", "person-nature", etc.

Observation, creation of cogitative qualities, working capacity, reliability, responsibility, organization, independence, social and professional mobility belong to the first group of professional qualities.

The second group of professional qualities includes such qualities as reflexivity, tolerance, skill to communicate, social intelligence and other qualities necessary for the implementation of efficient communication.

In this connection, it should be mentioned that not only such quality as tolerance is a central component in the process of a meaningful dialogue, but such essential qualities of the person in the process of communication as empathy, friendliness, authenticity, concreteness, immediacy, openness and acceptance of feelings, confrontation, and self-knowledge are to be taken into account too [1].

CONCLUSION

In conclusion, it is worth mentioning that we see the development of the carried out disciplines "Psychology of Communication" and "International Scientific and Technical Communications" in applying them to other courses, providing the interdisciplinary approach, teaching them in English, and including them in the university basket of competencies to have them available, due to their universal character, for students of different specialties in form of elective courses as well. The usage of the developed and implemented electronic resources in the educational process will modernize and improve the considered disciplines.

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