

Adult Learners' Communicative Foreign Language Competence Development in Higher School Via Information Technology and Multimedia Implementation

Alexey V. Balastov

National Research Tomsk Polytechnic University, Russian Federation
Lexiusb@gmail.com

Elvira Ya. Sokolova

National Research Tomsk Polytechnic University, Russian Federation
sokolovaeya@mail.ru

Doi:10.5901/mjss.2015.v6n1p537

Abstract

The authors' target is to reveal the problem of the information technology effective usage (in particular multimedia) at adult learners teaching in Higher school. The authors review the development of the competences and their differences from expertise even retrospectively while teaching adult learners modern informational technologies and share their personal view on the creating E-educational materials. The article also presents the experience of practical use of E-learning course developed in the Modular Object Oriented Developmental Learning Environment (MOODLE) and focuses on the analysis of the structural components of the content intended for adult learners professional communication training and specifies the factors affecting the methodological organization of the lexical and grammar material.

Keywords: communicative, foreign language, higher school, information technology, multimedia, adult learners, teaching, MOODLE, methodological organization.

1. Introduction

Modern educational situation is characterized by the following trends: constant scientific and cultural data growth that determines the educational content and limited teaching time on the one hand and adult learner's opportunities involved in the educational process on the other. There should be specified the processes that inhibit the higher education system in general and the teaching foreign language in particular. In addition, the problems involved are as follows: 1) the teaching practice inertia (in the modern learner-centered approach theory, there is some sort of a gap where the implemented activity and cultural approach aren't fully applied by the Higher school lecturers that affects the development and adult learners personal experience application in the educational process); 2) information and explanatory approach that prevails in the technical Higher school educational field but it does not require activation of the search, practice-oriented activities, does not involve adult learners appeal to the value-semantic acquired knowledge basis, almost there are no processes for the search, choice, reflection and meaning evaluation; 3) foreign languages play secondary role in the technical Higher school educational field and as a result, the nonlinguistic specialties adult learners in some cases underestimate the foreign language component value in their professional education.

In addition, the educational traditional forms do not provide a solution of any current educational process organization problems (e.g. in the E-distance education) via modern information technology opportunities.

The objectives of this paper are to show the significance of informational technologies in the teaching-learning process of adult learners in a higher school and process of adult learner's linguistic communicative competence development by means of E-learning course developed in the MOODLE and analyze the methodological organization of the language teaching content.

The problem referring to adult learners' communicative foreign language competence development in Higher school via information technology and multimedia implementation was studied by the Russian and foreign scientists: Andersen Katie van den Brink, Andreev A.A., Andreev A.A., Balastov A.V., Barahsanova E.A., Barreiro J.M., Bent B., Birkhoff G., Bolotov L.N., Bolotov V.A., Chernova N.I., Chomsky N., Gershunskiy B.S., Lednev B.C., M.V. Ryzhakov, Neisser U., Nikandrov N.D., Osin A.V., Pavlov A.M., Robert I.V., Sanchez, A., Serikov V.V., Slobodchikova A.A., Sokolova E. Ya., Symanyuk E.E., Traynev I.V., Traynev V.A., Troyan G.M., Zeer E.F., Zimin O.V.

The main methodological principles applied by the selection of the language teaching content are as follows: integrity, scientific content, creativity and diversification.

2. Informational Technologies

Information technologies are often seen as the other technology functional component types (institutional, industrial and social) and serve as the intellectual core of the latter. We share I.V. Robert opinion (Robert, 1994, pp. 114-115) because she is the author of numerous research works in this area, in one of which she argues that "society info phase is characterized by the active process of the data implementation as a social product in connection with which there is a highly organized information environment formation that affects all the society members life aspects" (Robert, 1994, pp. 114-115).

The information technology plays an important role in the society development and accelerates the dissemination process and new knowledge implementation in our society. Information technology improves the life quality via improving the society' intellectual resources quality (Traynev, 2006, p. 12). Education as an intellectual resources production field also needs some certain information technology integration conditions.

Thus, there is a great need for the new educational opportunities understanding associated with the ICT and multimedia technologies application as well as their combination with the traditional teaching technologies for its effectiveness improvement.

The main areas in which the research is conducted in order to improve the professional teaching quality is the fundamental educational field accompanied with the further humanization of the educational process and with its purposeful professionalization, informational and competence approach.

3. Competence Approach

Competence or original "competenia" is a possessing knowledge characteristic that gives an opportunity to form our own view of the phenomena, events and objects of a certain expertise area. Competence is usually treated as a legally adopted authoritative person's ability to perform certain acts and actions under specific circumstances.

For these concepts identification we studied the scientific works of the following authors: L.N. Bolotov, B.C. Lednev, N.D. Nikandrov, M.V. Ryzhakov, where the authors emphasize the practical competencies guidelines, especially stating the following - "competence is thus some kind of an interplay between knowledge and action in the human life" (Bolotov, Serikov, 2003, p. 59), and "competence approach involves a significant increase in the practical education orientation» (Bolotov, Serikov, 2003, p. 59). Having followed N.I. Chernova ideas (Chernova, 2006, pp.118-122), the authors of the research introduce the second embodiment of the concepts in terminological relations - expertise and competence.

As our research part it is also important to review the retrospective aspect of the problem, and it is necessary to note that the competence-oriented education (competence-based education) was formed in the 70s in the USA, proposed by N. Chomsky in 1965 (Massachusetts University), the concepts "competence" in relation to the language use in transformational grammar field, where the concept - competence is treated as a knowledge of the language speaker and listener and "only in the idealized case ... use is a direct competence reflection" (Chomsky, 1972, p.9).

Its implementation according to N. Chomsky is connected with the thinking process, with the reaction in the process of verbal behavior, speech and empirical skills. Later R. White complemented this idea by introducing the personal competence category and motivational components of the skilled worker. Modern professional competence is a meta professional personality creativity trait, realized in the course of professional activities carried out under certain circumstances thus converting the ability to generate new and original ideas and solutions (with respect to the training conditions (of workers) in the technical and technological, organizational, technological and special competencies) formation, the systematic terminological system used the concept of "working skills modules" developed by experts from the International Labor Organization (Zeer, 2005, p.216). E.F. Zeer highlighted the learners' activities in order to find a solution under the production targets, problematic tasks for achieving the third level of creative potential formation that corresponds to the ability to solve non-standard problems within the formed core competencies. I.A. Zimnaya has summarized the professional competence basic concepts: 1) the competence relating to himself/herself as a person; 2) the competence relating to the interaction with other people; 3) the competence related to the various human activities implementation or some sort of activity-related and communicative.

4. Adult Learners' Linguistic Communicative Competence Development

The basis for the communicative language competence development process comprises the problem, gaming and simulation system methods and techniques designed for business education and is adapted for the foreign language training. Among them the role-playing and the business games are applied for solving production problems, specific conflict situations analysis, «case-study», guiding texts directed method, "brainstorming", etc. The determining factor in the educational process construction is in this action-oriented training.

As for the scientific and methodological development terms of the adult learners linguistic communicative competence development we recommend providing any modern educational system with authentic textbook, students' workbook with a set of grammar and lexical exercises and different types of tests, a set of audio and video materials reflecting the learning process modular structure.

Thus, the main aspects of the model provisions and professionally-oriented foreign language communicative competence in the context of modern technical education should be aimed at:

- professionally oriented foreign language training;
- the educational process modular structure: 1st module - basic conversational foreign language, 2nd module - a business communication, the 3rd module – professionally oriented foreign language;
- language multi-level system proposed by the European Council (from A1 basic to C2 proficiency level);
- activity - and adult learner-centered competence approach to learning;
- evaluation system formed by the communicative foreign - language competence in the adult learners teaching context.

Educational informatization is considered as one of the leading trends in the higher professional school development where it's possible to implement at least four types of resources (Sanchez, Barreiro, 2006, pp. 345-362): 1) system for foreign language training via PC (allowing immediate error correction possibility; intense media applications, media collaborative interactive language); 2) teaching intelligent systems - advanced distributed learning systems projecting learners model, teaching model, educational advancement model; 3) media resources and guidance materials for use in the learner's preferred pace adapted script language training, interactive exercises network model; 4) shared educational media.

5. Media Resources and What We Do

Media resources act as a fundamentally new linguistic media greatly increasing the individual's interaction density and collective memory diversification mechanisms accumulation possibility in order to develop new messages in the foreign language.

There are many interpretations of the media and multimedia concept but we tend to the generalized concept presented by B. Bent Andresen and Andersen Katie van den Brink, "multimedia is a combined data presentation in various forms (text, audio, video, etc.), which relies on special technology" (Bent, Andersen Katie van den Brink, 2005, p.166).

We have tried to organize, where and how it is advisable to use information and computer technology in teaching, taking into consideration that modern PC allows to integrate within a single teaching session, several types of teaching activities:

- when presenting new material – "so called" knowledge visualization;
- in virtual classrooms, during adult learners self-study;
- material revision via training programs;
- knowledge checkup via tests;
- adult learners specific abilities extra training, such as thinking, logic, memory using the Internet technologies;
- organization, production, management situations modeling on the basis of specially designed PC software.

As it was found out, the best results are achieved by individual education via the following scheme "one lecturer - one adult learner", i.e. in the process of continuous education and skills management. But such an individual teaching is limited by its high cost (Balastov, 2012, pp. 37-40).

Until recently, there was much talk about the differences in the behavior of the lecturer and the PC operation. Particular attention was paid to the formation of goal, motivation, emotional and volitional aspects, psychological conditions of the lecturer. In general, there were strongly accentuated the differences between a man and PC, creating certain obstacles for the development of the scheme "man - machine" (Andreev, Troyan, 2003, p.68). Undoubtedly, the

central is the "man - PC" approach. Obviously, the globalization and diversity make this problem to be studied by all researchers interested in multilateral human-PC communication (Gershunskiy, 1998, p.428). This issue is discussed by the following authors: G. Birkhoff, A.A. Andreev, O.V. Zimin, A.A. Slobodchikova, E.A. Barahsanova, A.I. Danilova and others.

We took as for the basis the most affordable way of learning in the media environment, which serves as a complement to the traditional way – it is the new materials design and creation inside the E-involvement (Instructional Design - educational design). By its nature, it is a systematic and reflective process of creating instructional materials, teaching procedures, adapted screenplay language skills formation, Internet resources connection and the ready-made test tools implementation based on the current curriculum learning strategy with the modular technology use.

Taking under consideration the media environment specific nature, it is necessary to present a brief explanation of the terms used: 1) Internet-connected resources allow us to use the audio files and podcasts; 2) audio resource starts to operate automatically, regardless of having a built-in player. A simple menu allows us to change the order of the used resources; 3) podcast - a digital audio file or series of files that are distributed on the Internet RSS or, in other words, files, XML format, which can be read by special search programs, this creates an opportunity receive relevant information on the given topic; 4) shared learning objects - are network media educational resources (Media Literacy Resources on the Web), which are sorted into categories: a) international newspapers and magazines sites; b) learning communities sites, c) educational media resources sites; d) community organizations and social institutions sites.

Adult learners as media resources users during the interactive process analyze, compare, evaluate and interpret the many-valued representation (meta images, meta structures) various disciplines and subjects objects including text, photographs, works of art and actually data. In the interaction process with the media environment they are trained to select and convert (in this form - media image) defined purpose and way of interacting with the media. As a result the generated representation (media image generated knowledge) is formed in the dynamic user interaction in its target group and media resources.

At the same time we want to pay special attention to essential characteristics of the multimedia tools application, the importance of their selection and implementation aspects, as well as the importance of the respect principle for the proportions between verbal and visual means.

Visual aids effectiveness is achieved mainly by the visual perception impact. Video and animation are the most effective means of broadcasting multimedia information content. When working with them we should pay attention to the characteristics of their use in the educational media. Video and animation are dynamic elements and compared with static pictures have greater educational effect. Movement, prompt changes are the most strongly perceived visual stimulus which attracts all living creatures with vision as a primary means of adaptation to the environment (Neisser, 2008, p. 224).

Unlike other media, multimedia is characterized by its much higher information density. Density and media saturation is delivered to the user via several forms. According to A. Santos opinion, "the key to multimedia is the ability to link different types of data". As it was stated above, multimedia, via its visibility principle can influence both on visual, auditory and linguistic perception, increasing efficiency through the implementation complexity (Andreev, Troyan, 2003, p.68).

On the basis of this ratio it's clear that video, discussion and action have a much higher rate than the audio methods, reading and lectures. All this is based on the fact that most people remember just 5% of the heard and about 20% of the watched. Simultaneous application of audio and video increases total memorability up to 40-50% (Osin, 2002, pp.23-24).

These facts suggest that the media as synthesizing the above mentioned is a powerful tool in the educational field.

Considering the media from a structural point of view we should refer to its classification. The following authors: Bent B. Andresen and Katia van den Brink subdivide media on the basis of how they interact with learners' scenarios, highlighting the linear, nonlinear (hypertext), multimedia tutorials and guides, tools and components of the multimedia build up.

The multimedia key feature is its immediate feedback, so called the principle of implemented interactivity. Interactivity (interactive - interaction) is the user's ability to get the system's immediate response or feedback.

In accordance with the system's structure, the goals content and the information technology proficiency level, the adult learner himself or herself choses the forms of data representation:

- minimal hyperlinks use;
- hyperlinks and basic illustrations;
- hyperlinks, macros, static and dynamic graphics, multimedia (audio, visual, animated objects), etc.

Local educational website creation gives the idea of the content and structure of the educational material about the

pedagogical and information technologies used for the educational dialogue organization via methodological principles and techniques (Balastov, 2014, pp.1033-1040).

The website should contain the following:

- lectures;
- a list of terms (glossary), references;
- video materials;
- full-text references sources.

Visual materials should be submitted to the site in the form of:

- schemes;
- schedules;
- diagrams;
- drawings;
- screenshots;
- animations;
- presentations.

The content development involves establishing a baseline that will be formed for the basic material resource that defines the necessary knowledge our adult learner should study. Resource should have a modular structure, where each chapter within the training material is given in a strict logical sequence.

The final stage in the site organization and development is preparing guidelines for the user. It includes reference material, study guidelines, guidelines for the essays and term papers.

Having based on requirements to E-publications (E-manuals, network educational-methodical complexes, etc.), generally to the resources there were identified the most important ones:

- resource base material should determine the necessary amount of knowledge that the adult learner should study;
- resources should have a modular structure, where each chapter within the given material is presented in the strict logical sequence;
- basic educational material structural units are interrelated with basic fragments intended for the logical classes organization;
- base fragments consist of the basic fragments system, each of which represents one thought hypothesis algorithm;
- text fragments can be accompanied by audio or video data in order to make semantic accents. In order to represent a heterogeneous or hypertext it's recommended to use MDI interface;
- text should be accompanied by numerous cross-references that allow us to reduce the required information searching time;
- the resource may contain additional material, as well as material for in-depth study of the subject;
- the most important resource elements should have tips or necessary background material explanations (Balastov, 2014, pp. 9-12).

6. Methodological Organization of the Language Teaching Content

Taking into account the specific of adult learning process we came to the conclusion that successful acquisition of productive types of speech activity is possible on the coherent speech material basis consisting of texts on certain topics. The systemized text complex is widely represented in e-learning course developed with the use of information and communication technologies in MOODLE. The key component of the developed e-learning course is the informative professionally-oriented block which includes:

- the complex of authentic scientific and technical texts (from specialized science journals, encyclopedias, dictionaries, subject collections, and reference books)
- audio-visual materials (lectures, video tapes, video films, etc.)

Informative professionally oriented block is, on the one hand, the basis for obtaining content information on the above specified modules and is, on the other hand, the support for the methodological organization of the language material. Thirdly, the development of this block allows us to take into consideration the logic and the discipline presentation sequence.

The modules: the 1st basic conversational foreign language, 2nd module - business communication, the 3rd module – professionally oriented foreign language are divided into units on certain themes. Each module includes two blocks: theoretical one consisting of authentic text on General English topics, authentic business articles, professionally oriented scientific-technical texts and articles and practical block which contains tests and exercises intended to drill and master the theoretical material.

Textual material is of great importance as it has communicative and communication-information direction, possesses high informative significance, contains new important and relevant information and stimulates adults' cognitive interest.

The methodical potential of each theoretical block is intensified by the combination of textual and visual information, which is possible by the application of information and communication technologies.

The texts included in the structure of the e-learning course can be classified as follows: the texts containing factual information which carry out motivate-stimulation and sample function. These types of text can be used to develop monologue utterance skills, to teach how to make conclusions and express subjective opinion on the information given in the text. In the process of monologue teaching the speech mechanisms are formed relating to the development of communicative competence as the cognitive construction of utterance and such cognitive skills as description, comparison and expression of personal point of view on the information given in the text. The computer tools allow us to record the monologue utterances, to analyze them and correct the mistakes.

The texts intended to carry out training function are aimed at teaching the algorithm of coherent and logical utterance, analysis and the production of information required in the learners' professional activity. This block is represented by the texts referring to various genres: essay, scientific-technical articles, summaries, annotations, scientific study, conference reports and presentations.

The considered complex of the texts is intended for stage-by-stage learning, starting from the analysis to reveal the stable and inherent features and stylistic markers and finishing by the production and writing of simple sample texts.

The developed complex of texts is the basis not only for learning information, but is also the support for methodical organization of the language material. In the specified above modules contexts it is possible to make a representative sample of the main lexical units and determine grammatical forms and phenomena specific for these texts types.

The basis of the professionally-oriented module constitutes special vocabulary (lexis) which provides the practical implementation of the content part of communication.

All above mentioned allows to make a conclusion that primary objective of communicative foreign language competence development is lexical habit formation on the basis of special planned, structural representative samples.

Along with the knowledge of language material the adult learners should know the grammatical rules and their practical use. The main forms of grammatical material representation are schemes, tables, speech samples and video material with comments. The selection of grammatical material is necessary to make in accordance with the following approaches: communicative significance, typicalness, collocation and representativeness. Based on the analysis of typical speech practice the following grammatical phenomena are revealed to be predominated: Passive Voice, Adjectives-Adverbs-Comparison, Conditionals, and Modal Constructions. The exercises developed in this E-learning course are intended to master these grammatical phenomena with further use of these typical constructions in communication. There is a special part in the E-learning course called "Appendix" to explicit the grammatical patterns and phenomena and typical speech patterns (Sokolova, 2012, 59-63).

To form phonetic habits and improve adult learners' pronunciation multiple presentation of lexical units is required. When the lexical unit is primarily introduced it must be provided with transcription.

To form habits of dialogic speech we use situations which can prepare the adult learners to real communication. Webinar, chat and forums are also used to improve adult learners' communicative competence.

7. Conclusion

Thus, the instructional content of the developed for adult learners E-learning course motivates students, provides situations close to real ones and gives an opportunity to use the acquired knowledge in the practical and research activity.

References

Andreev A.A., Troyan G.M. (2003). Internet Basics Training. Moscow International Institute of Econometrics, Informatics and Language, 68.

- Balastov A.V. (2012). Practical approach to the independent work in a foreign language using information technology organization. Tomsk State. Ped. Univ . Bulletin, 5, 37-40.
- Balastov A.V. (2014). Modern informational technologies in teaching adult learners foreign professionally-oriented communication. Journal of Siberian Federal University. Humanities & Social Sciences, volume 7, 6, 1033-1040.
- Balastov A.V. (2014). Effective information technology use in teaching adult learners to professionally oriented foreign language communication in technical university. Tomsk State. Ped. Univ . Bulletin, 8, 9-12.
- Bent B., Andersen Katie van den Brink, (2005). Multimedia in Education: specialized course. Authorized translation from English. Moscow: "Education Service", 166.
- Bolotov V.A., Serikov V.V. (2003). Competence model: from the idea to the educational program. Pedagogy, 10, 59.
- Chernova N.I. (2006). Humanization of training engineers for high-end technology industries. High Tech., 7-8, 118-122.
- Chomsky N. (1972). Aspects of the syntax theory. Moscow, 9.
- Gershunskiy B.S. (1998). Philosophy of Education. Moscow: 428.
- Neisser U. (2008). Cognition and reality. Meaning and principles of cognitive psychology. Blagoveshchensk: BGK. I.A. Baudouin de Courtenay, 224.
- Osin A.V. (2002). Background concept of educational electronic publications. Proceedings of the scientific - practical conference "The main directions of the development of electronic publications and educational resources". Samara, 23-24.
- Robert I.V. (1994). Modern information technology in education: Didactic problems prospects. Moscow: School Press, 114-115.
- Sanchez, A., Barreiro, J.M. (2006). Design of Virtual Reality Systems for Education: Cognitive Approach Educ. and Inf. Techn., 5, 345-362.
- Sokolova E. Ya. (2012). On-line educational English for special purposes (ESP) complex. Tomsk State. Ped. Univ . Bulletin, 4, 59-63.
- Traynev V.A., Traynev I.V. (2006). Information communication educational technologies (generalizations and recommendations): Textbook. Moscow: Publishing and Trading Corporation "Dashkov and Co", 12.
- Zeer E.F., Pavlov A.M., Symanyuk E.E. (2005). Professional education competence approach modernization. Textbook. Moscow: Moscow psycho-social institution, 216.