

## Modern educational information technologies in formation of communicative competency in a foreign language in the process of training postgraduates at the aerospace university

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**Abstract.** The research analyses the issues of competency-based approach implementation in connection with practical experience gained in SibSAU in teaching English for scientific purposes to postgraduate students. The article focuses on IT application for the objectives of both class room and independent work of post graduates organization.

It is the main function of education that is in general aimed at training useful professionals to different parts of life taking into account current tendencies and the level of science and technology the people should correspond to; consequently, the critical factor for further development of education is the choice of a leading educational approach. The teaching approach has to address the society needs such as contributing to process of globalisation and innovative development, which means educating and bringing up people capable of realising themselves under the determined conditions.

The education in Russia has experienced the serious changes. The discrepancy of the recent knowledge-based approach in modern life is its inability to meet the challenges: providing knowledge and skills about the world to modern generation is not enough as they aspire to realise their own preferences and interests within their professional performance. The knowledge-based approach is closely connected with teaching and instructing people, which does not allow them to unlock their creativity, independent critical thinking and develop the ability to find their places under constantly changing conditions. This causes a problem: the graduates of universities and colleges cannot easily meet the requirements of life, feel lack of both personal and professional experience and are unable to realise themselves. It results in frustration and dissatisfaction.

The knowledge-based approach develops intellect and memory, but motivation of students is not affected as well as their sphere of emotions and feelings. The approach greatly contributes to the development of formal level of education. The main shortcoming of the approach is that graduates feel hard to adapt for the professional life.

The current leader among existing approaches is competency-based, it is designed to train and to provide the development of necessary competencies for students based on their understanding the requirements they will meet as employees. Students comprehend what competencies they are interested in and an educator finds the methodologies and techniques to realise the training process. Training differs from teaching. The essence of training is to focus on practical skills more than pure theoretical knowledge and the ability to apply the skills more than demonstrate the theoretical awareness of the subject. [1]



The competency-based education approach found its popularity due to its application in the vocational training. European and Australian educational systems also used the approach to measure professional skills. [2]. Richards J.S., Rodgers T.S. point out the significant impact of competency-based approach on language teaching and the results obtained while teaching survival language to immigrants. [3]

During the training process first of all the students achieve the competencies they need to be successful employees that result makes them feel confident about their future. The competency-based approach allows educators to use training time more efficiently, that is rather significant within the time limits provided by the curriculum. The competency-based approach involves more individual assignments to the students and educators' possibility to feedback every student effort, thereby, students' and educators' cooperation is rather fruitful as they both know the objectives to reach.

However, certain limitations of the competency-based approach could interfere with educational process based on it. Due to the results obtained by the observation and analysis of 4 year competency-based approach used in teaching practice we could agree with Richard S. Sullivan [4], who presents in his study the findings of the limitations of the approach:

- the first problem to overcome is educators' position, who consider their own previous learning experience to be a model for further generations of students. Therefore, they continue applying those traditional teaching approaches they have been accustomed to;
- the second shortcoming is a logic continuation of the first. Educators' negative attitude to a competency-based approach can be reflected in the choice of teaching methodologies though the materials are designed according to competency-based approach principles.
- the third limitation is not relevant identification of the job competencies by the students that results in ineffective teaching process. The current difficulty is the students' poor motivation to prepare for the future job. They are not aware of the skills they have to develop to become professionals.

We analyse the students' attitude to the foreign language competencies every academic year [5], according to our survey the percentage of those who find it not so significant to acquire the competencies relevant to their future job ranges from 10 to 15 at bachelor courses and it reduces to 1.5% at master programmes, the post-graduate students have the highest motivation in developing proper competencies as scientists. We have chosen for the analysis the most motivated audience of postgraduates as the most motivated to develop competencies necessary to do research. Moreover, in SibSAU great experience of work with post graduates on foreign languages for scientific purposes is accumulated. Working with postgraduates in this field we use a complex approach. Further we'll dwell upon the main elements of this complex in more details. In particular these elements are practical and theoretical at different stages of the course. Special attention herein will be paid to the results and the forms of control.

The methodology of teaching English for scientific purposes is connected with effective planning and organizing both classroom activities and independent students' work. The academic content of English for scientific purposes course in this context is one of the most important elements of the integral structure of academic process planning. This process is aimed at formation of different universal competencies, such as 1) the ability to participate in the collaborative work of international and Russian scientific teams in solving both scientific and educational problems; 2) availability to use modern methods and techniques of scientific communication in a foreign language. In connection with this there is a need for analyzing pedagogical and methodological terms, contributing the efficiency of training.

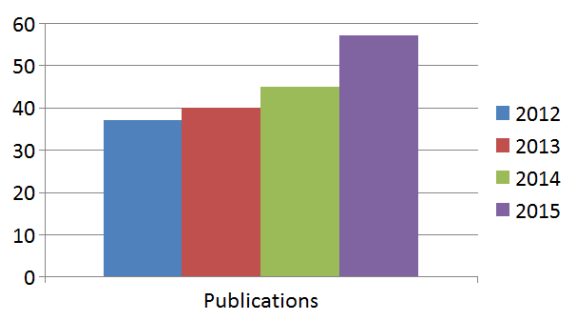
As it is said, the objective of training is formation of universal and communicative competencies, which is achieved through the content of the programme, consisting of classroom activities and independent work.

Here it is important to underline the significance of independent work. It is divided into two units: work at distant learning server (Moodle platform) and search for authentic monograph in the field of research in English. Postgraduates perform various tasks placed by teachers of foreign languages at the distant learning server, e.g. watching video on the programme's topics and expressing their opinion after watching in writing, writing CV, glossary, annotated bibliography (formation of scientific writing skills). Besides they prepare different presentations.

Presentation has a special place during classes for post graduates. One of the topics is "My dissertation proposal" where they reinforce the skills on formulating the topic, object and subject of the research; present its main tasks in English. Another example of the presentation is "Peer-reviewed journals of Scopus and Web of Science systems in my field of research". Here the postgraduates present different journals in their field of study paying special attention to the terms of publishing (formation of speaking and presentation skills).

Public presentation of the research report is a final part of the course and assessment tool.

Underlining the importance of the work it is also significant to say about preparation to publish an article in English in the edited collection of the scientific conference in SibSAU. If we return to the importance of the result, we could speak about the following: presentation of the speeches at the scientific conference (public speaking competency), presentation of test translation of the monograph (scientific writing skill). Having analyzed different types of work, performed by the postgraduates, we can conclude that all the elements of the process and the result are interconnected and correspond to the main objective of competencies formation. Fig.1 demonstrates an increasing tendency of postgraduates' research activity due to training based on competency-based approach.



**Figure1.** Postgraduates' publishing efforts in a foreign language.

Internet resources have already become an integral part of the educational process in SibSAU. These tools started to be actively used in 2006-2007. It should be noted that the use of the Internet greatly influences the technology of delivery information to the postgraduate students. In these terms the role of independent work is increasing and the autonomy of studying is developing.

The use of Internet for teaching English for scientific purposes amid the global economic crises becomes justified, as it reduces expenses on paying for supplementary education (foreign language courses), buying expensive authentic textbooks and monographs which get out of date and loose novelty very quickly. Besides, electronic publications provide

achievement of four basic advantages: international accessibility, speed, additional facilities and low cost. [7]

Information and communication technologies create new global environment, mediating a great number of Internet resources, supplying academic and scientific information in foreign (English) language. In the methodology of teaching Foreign languages there exists a new direction such as e- learning having been developed both by foreign and national researchers. Internet resources enable to teach all types of speech activity, though teaching writing and reading are higher-priority ones.

Great number of Internet resources was investigated by the specialists of SibSAU. Some useful scientific search systems, catalogues and back files of scientific periodicals were revealed and could be recommended to the masters and postgraduates of various directions in their work with authentic textbooks, journals, monographs.

For technical students the following recourses could also be recommended:

<https://teflastic.wordpress.com/worksheets/technical-english/>; [8]

<http://eslrightnow.com/english-for-engineering/>; [9]

[http://www.youtube.com/channel/UCS5ME54d\\_iJ0cOOZun4ikKQ](http://www.youtube.com/channel/UCS5ME54d_iJ0cOOZun4ikKQ)[http://www.proprofs.com/quiz-school/story.php?title=technicalengineering-english-test](http://www.proprofs.com/quiz-school/story.php?title=technicalengineering-english-test;);

<http://www.monash.edu.au/lls/llonline/grammar/index.xml> grammar for engineers; [10]

[http://www.cambridge.org/it/elt/catalogue/subject/project/custom/item2489163/Cambridge-English-for-Engineering-Resources/?site\\_locale=it\\_IT&currentSubjectID=2561588](http://www.cambridge.org/it/elt/catalogue/subject/project/custom/item2489163/Cambridge-English-for-Engineering-Resources/?site_locale=it_IT&currentSubjectID=2561588) case studies for Cambridge English for Engineering.

Besides we highly recommend the following resources for development of basic linguistic skills:

<http://www.scribd.com/> is for development of reading skills, creation of individual materials and tests for reading in IELTS format and in other formats, giving the opportunity to share the texts and to see the ratings;

<http://www.ted.com/>, <http://www.bbc.co.uk/worldservice/learningenglish/general/sixminute/> are examples of video and audio podcasts with the possibility of text creation;

<http://azargrammar.com/index.html>, <http://www.englishpage.com/index.html> are grammar and grammar tests;

<http://voicethread.com/#home>, <http://englishcentral.com/home?ref=logo>, <http://vocabulary.com/> are links for development of speaking skills with the emphases on pronunciation and speech fluency;

<http://www.listen-and-write.com/> are for development of listening and writing skills, <https://docs.google.com/#home> is the link for creation of Google form tests enabling to conduct collaborative editing and discussing. [11]

The level of language proficiency is an important criterion of aerospace industry specialists' professionalism as there is a necessity to deal with foreign colleagues, obtain information from international scientific sources, participate in international scientific events and to publish the results of their researches in the peer-reviewed journals with high citation index. The knowledge of English for scientific purposes enables young researchers to transfer the results of the performed research to the international level. Nowadays SibSAU researchers actively participate in international scientific and academic projects. Scientific contacts with our foreign colleagues have become numerous. All the above mentioned factors caused the necessity of English for scientific purposes skills development. In this case English for scientific purposes is considered as a means of obtaining adequate modern knowledge from scientific professional sphere. [6]

As a result of learning a course of English for scientific purposes post graduates should get the experience of large volume of authentic scientific texts (monographs, scientific articles, reports of international specialists) processing. They should be able to write abstracts for scientific articles and other research projects, grant proposals in order to participate in scientific conferences, to draw up application forms for conferences.

The analysis of each separate effective technology, used at different stages of teaching postgraduates is a complicated longtime process and can become the subject of a special discussion. In this connection one can mention that the implementation of Internet technologies into the teaching process of postgraduate students positively effects cognitive-informative, professionally-oriented and didactic potential. It creates positive emotional educational environment, developing autonomy, ability of critical thinking and independent decision making.

Having analyzed the process of teaching postgraduates of aerospace profile English for scientific purposes on a complex based methodology developed in SibSAU we can conclude that curriculum content is aimed at postgraduates' comprehensive training in the field of professional communication in the international educational and scientific environment. The result of our work is expressed through formation of universal and language competencies. Positive experience of integration of Internet resources, e-learning and other innovative forms of work in the process of training is accumulated. Effective methods of training are worked out.

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