

RESEARCH PROJECT ACTIVITIES METHODS AS THE MEANS OF FORMATION OF FOREIGN LANGUAGE COMPETENCIES

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ABSTRACT

This article describes the methods of research project activities in English of the students of the technical university. It is dealt with some projects. It is shown that research project activities have positive effect in the process of teaching of students because they form foreign language competencies. The content of this article can be used to improve the process of teaching of foreign language, not only in the higher schools but also in the secondary vocational schools. The article submissions are of practical value to foreign language teachers in the organization and planning of students educational and self-learning activity aimed to establish and improve their foreign language competencies.

Keywords: project, research project activities method, the students of the technical university, the group of experts, foreign language competencies, evaluation, "foreign language" discipline, students, higher educational universities.

1.INTRODUCTION

Nowadays technical universities are in the process of reforming and one of the direction of it is to form foreign language competencies of students in the process of research project activities. Modern graduates get higher education in qualitatively different conditions of the organization of the educational process and professional training. The federal government standards for the new generation are based on competent approach. In scientific literature, there is a differentiation of competencies, such as: professional, core, communicative, language, foreign language and others. However, the term of "foreign language competencies" has not been clearly defined in scientific literature yet. The conditions, gist and content of formation of students foreign language competencies in the process of research project activities in technical university is developed insufficiently. The term "foreign language competencies" was used in the structure of communicative competence. Thus, the level of development of student's foreign language competencies in technical university allows us to give a qualitative assessment of communicative behavior of students. Competence based approach in foreign language teaching of technical university students on the basis of research project activities is considered to improve the quality of professional higher education aimed on the complex formation of foreign language competencies which are a part of universal competencies. Competencies are considered to be as integrators of

knowledge and are guided meet the challenges of the modern labour market. Projecting of the state educational standard of higher technical professional education on the basis of forming competencies involve employers to help the academic community in the formation of social order for graduates with a specific set of competencies, including foreign language competencies. So in the process of teaching of the future competent person in the technical university the role of students becomes very important.

2.METHODS

128 students of our university took part in the experiment. In the experimental group, there were 64 first-year students and in the control group there were also 64 first-year students. Experimental and control groups were chosen so that the level of formation of foreign language competencies of the students were similar.

During the study of the levels of formation of foreign language competencies of students in the process of research project activities we used the following diagnostic tools: questionnaire of research project activities of students of technical university in the study of foreign language; the author's technique of revealing the formation of various levels of foreign language competencies of students; test papers of students in the process of study of foreign languages.

The level of assessment of formation of foreign language competencies in research project activities was based on self-assessment and monitoring of students by teachers. Diagnostic data were processed by counting the number of foreign language competencies that students determined in themselves and were added by expertise data. The next was calculated correlated or integrated index of formation of foreign language competencies as the average of all competencies. On the ascertaining stage of the experiment was detected the starting level of formation of foreign language competencies of students of technical university in research project activities.

During the study of this problem we used the following methods: theoretical (analysis of psycho-pedagogical and scientific-methodological literature on the research topic, generalization); empirical (analysis of pedagogical situations, training program documentation, study and synthesis of teaching experience on the research, pedagogical supervision of teachers and students, methods of survey, questionnaire, conversations, interviewing, participant observation, testing, projecting); pedagogical experiment (stating, forming and control stages of experiment); statistical processing methods.

An experimental base of research was the Naberezhnye Chelny branch of the Kazan Federal University.

The research was carried out in three stages:

On the first stage (search stage) the state of the problem was examined; was analyzed psycho-pedagogical literature relevant to the research problem; was defined the content of students foreign language competencies of technical university, tasks, program and methodology of research.

On the second (creative or formative stage) stage experimental work was carried out: collecting the actual material was organized, the assessment and the analysis of skilled experimental data in dynamics were carried out; methodological recommendations on the formation of students foreign language competencies of technical university in research project activities were developed; training manual "Research project activities of technical university students in English language classes" was prepared.

On the third (control stage) stage the results of research were analyzed, summarized, and discussed; quantitative and qualitative processing was conducted; theoretical interpretation of the findings and provisions of research were carried out; specific methodological recommendations on the formation of students foreign language competencies of technical university in research project activities in the process of mastering the "Foreign language" subject were concretized; the effectiveness of formation of students foreign language competencies of technical university in research project activities was identified.

3.RESULTS AND DISCUSSION

In the process of theory and practice analysis of psycho-pedagogical literature different perspectives on the role of research project activities in learning foreign language by students of technical university were explored.

As it was above mentioned experimental work consisted of search, creative (formative) and control stages. The following diagnostic tools were used in ascertaining step: the author's technique to identify the level of formation of various foreign language skills of students in technical university on the basis of the technological card of introspection and manifestation of various abilities of foreign language activity; participant observation of foreign language teachers in the process of research project activities of students; test card of research project activities of students in foreign language study; a modified version of the questionnaire of individual style in students research project activities of technical university in foreign language study.

The level assessment of formation of foreign language competencies in research project activities was carried out based on students' self-esteem and teachers monitoring. These diagnostics were processed by calculation of number of foreign language competencies, which students defined at themselves and supplemented with expert data. Then correlated or integrated index of development of foreign language competencies as average value of all competencies was calculated. On ascertaining stage of the experiment, starting level of development of students foreign language skills of technical university in research project activities was detected. As criteria for students research project activities in study foreign language in technical university was defined: student's ability to plan foreign language research project activities, to organize and evaluate it; the quantity and quality of independent tasks during the work on educational tasks; students' attitude toward foreign language activity.

During the stage of the experimental work was carried out comparing the level of forming of foreign language competencies of students of the control and experimental groups of the technical university. The experimental results showed that students who study foreign language based on research project activities showed interest to the formation of foreign language competencies. In this case, all the criteria indicators of complex foreign language competencies of students of technical university were manifested and formed into research project activities in process: diagnosis (self-assessment, expert reviews); incentives; organization; evaluation; correction through the individual tasks for research project activities of students in the study of foreign language. In the experimental groups in the process of learning foreign language through research project activities students used its various forms and types. Students themselves selected different forms and types of research project activities. In the process of study of foreign language, students creatively used different algorithms of

research project activities. As a result of the experimental work, the majority of the students in the experimental group were formed by the need for active, creative learning foreign language based on research project activities. All the results of the experimental work are presented in the tables and in the figures.

According the levels of formation of foreign language competencies before the experiment, the students of the experimental and control groups are distributed in the following way.

Table 1- Distribution of the students of the technical university according the levels of formation of foreign language competencies at the beginning of the experiment

Levels	experimental group		control group	
	quality	%	quality	%
High	12	18,7	15	23,5
Medium	28	43,7	22	34,4
Low	24	37,5	27	42,2

The result suggests that students of the control and experimental groups practically do not differ in the level of formation of foreign language competencies. The accuracy of this conclusion was determined on the basis of the method χ^2 (criterion of K. Pearson). This criterion is determined by the following formula:

$$\chi^2 = \sum \left[\frac{(fe' - fk')^2}{fk'} \right]$$

Where fe' -relative frequency of the interval of one series;

fk' -relative frequency of the interval of another series;

Based on the received data was worked the table (Table 2). From the table value of χ^2 at 95% probability -7.81. It was calculated computation of $\chi^2 \approx 3.98$. This gave us an opportunity to talk about the lack of statistically significant differences between students of the experimental and control groups.

Table 2 - Defining of differences in the levels of formation of foreign language competencies of students in research project activities of the experimental and control groups at the beginning of the experiment

Levels	frequency fe	frequency fk	relative frequency $fe' - \%$	relative frequency $fk' - \%$	$(fe' -$ $fk')$	$(fe' -$ $fk')^2$	$\frac{(fe' - fk')^2}{fk'}$
High	12	15	18,75	23,4	- 4,65	21,63	0,92
Medium	28	22	43,75	34,4	9,35	87,43	2,54
Low	24	27	37,5	42,2	- 4,7	22,09	0,52

Levels	frequency <i>fe</i>	frequency <i>fk</i>	relative frequency <i>fe'</i> - %	relative frequency <i>fk'</i> - %	$(fe' - fk')$	$(fe' - fk')^2$	$\frac{(fe' - fk')^2}{fk'}$
	$\Sigma fE = 64$	$\Sigma fK = 64$	100 %	100 %	0		

$$x^2 = 0,92 + 2,54 + 0,52 = 3,98$$

Table 3 - Defining of differences in the levels of formation of foreign language competencies of students in research project activities of the experimental and control groups at the end of the experiment

Levels	frequency <i>fe</i>	frequency <i>fk</i>	relative frequency <i>fe'</i> - %	relative frequency <i>fk'</i> - %	$(fe' - fk')$	$(fe' - fk')^2$	$\frac{(fe' - fk')^2}{fk'}$
High	23	17	36	26,57	9,43	88,92	3,34
Medium	35	28	54,6	43,75	10,85	117,72	2,69
Low	6	19	9,4	29,6	-20,2	408,04	13,78
	$\Sigma fE = 64$	$\Sigma fK = 64$	100 %	100 %	0		

$$x^2 = 3,34 + 2,69 + 13,78 = 19,81$$

Table 4 - The results of the distribution of the students of the technical university according the levels of formation of foreign language competencies at the end of the experiment

Levels	Experimental group		Control group	
	Quantity	%	Quantity	%
High	23	36	17	26,57
Medium	35	54,6	28	43,75
Low	6	9,4	19	29,6

As the tables show the comparison of results of the final sections of the experiment and after in the control and experimental groups, we found a significant increase in all foreign language competencies and integrated index in the experimental group and a slight increase in the control group. Most of the students of control groups remained at levels "medium" and "low". The number of students in the experimental groups were distributed on the basis of the transition from a low level to "medium" and then at a "high". Based on the analysis of the results revealed a positive dynamics of the formation of foreign language competencies of students of technical university in research project activities. In the experimental group this was revealed in decrease in

the number of students from low-and middle-formation of foreign language competencies (13%) with simultaneous increasing the number of students with high level (25%). In the control group, the number of students with low level of foreign language competencies formation decreased by 9%, with an average level increased by 11%, and the high level did not changed. The results of the experimental work confirm the effectiveness of the developed criteria indicators of foreign language competencies and justify their use for diagnostics (self-esteem, expert reviews), promotion, evaluation, correction, updating and contributing to improve the formation of complex of foreign language competencies of students of technical university in research project activities. Comparative analysis of the control phase of the experiment testifies the success of formation of foreign language competencies of technical university students in research project activities.

On the basis of the mathematical processing of data we got $x^2=19,81$. Value of x^2 constituting at 99 % level of probability - 9,21 ($19,81>9,21$), that specifies on reliable distinction of experimental and control groups.

In revealing the research problem we relied on the theoretical foundations of research project activities of students of university presented in works of M.N. Berulava (2009), V.P. Bepalko (1989), B.P. Esipov (1963), E.S. Zaire-Beck (2002), V.Y. Liaudis (1996), A.V. Usova (2003) and others. Research project activities of students of technical university in the process of learning foreign language is considered as a specific form of creativity and universal means of development of competent specialists. Scientists' opinions diverge regarding the didactic functions of independent work of students of university. As a method of learning it is treated by A. O. Bagateeva (2014), A.G. Kovalev (1988); as a method of learning study by A.V. Usova (2003); as a component of creative and informative and practical activities by Y.C. Tsai and Y.C. Li (2012), R. Ghadirzadeh, F.P. Hashtroudi and O. Shokri (2012), V.Y. Liaudis (1996) etc. In the whole the opinions converge on what research project activities of students of university is connected with the system of pedagogical conditions ensuring management of training activity of students occurring in the absence of the teacher and without his participation. This fully applies to the formation of a number of foreign-language competencies of students of technical university in research project activities. The problems of the formation of students of university of communication, cross-cultural, foreign language competencies are described in the dissertation researches of Zh.I. Aytuganova (2003), T.V. Bukina (2005), E.V. Maksimova (2007), M.S. Mitryuhina (2005), O.V. Nemirovich (1999), E.I. Passov (1985), N.N. Prudnikova (2007), I.I. Khaleeva (1990), etc. However, insufficient research is devoted to the formation of foreign-language competences of students of technical university in research project activities and teaching conditions of this process.

4.SUMMARY

Based on the study, the following conclusions can be drawn:

- Analysis of research results in control and experimental groups testify the presence to the tendency of growth of dynamics of forming of foreign language competencies of students of the technical university in research project activity. Considerable changes happened.
- The most part of students of the control group remained on levels " middle" and below the "average", the students in experimental group heaved up the level and

distributed mainly on levels " middle" and higher "middle". These indexes confirm certain efficiency of the entered experimental factors.

- Foreign language competencies are manifested, realized and formed into research project activities of students in the study of foreign language-specific areas of training future specialists.

- The process of formation of student's foreign language competencies of technical university is successfully implemented in research project activities. It is the term and the result of this process. Foreign language competencies of students are formed in the process of research project activities in the study of foreign language as a set of integrated sustainable entities of the subject of research project activities, including: language, speech, compensatory, learning-cognitive, socio-cultural and communicative-designing competencies.

5.CONCLUSIONS

The efficiency of the process of formation of the complex of student's foreign language competence of technical university in research project activities is achieved with a systematic diagnosis, promotion, evaluation and correction.

Developed and implemented in the educational process of educational-methodical manual "students self-learning activity of technical university classes in English language" is one of the main tools to increase the level of development of foreign language competence of technical university students of self-learning activity in foreign language study of technical University with specific areas of training.

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