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COMPETENCE FORMATION OF SELF-ORANIZATION OF STUDENTS' EDUCATIONAL ACTIVITY OF TECHNICAL HIGHER INSTITUTION

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Abstract

The article deals with the formation of the self-organization of the educational activities of students of a technical college. There is a lack of a common understanding of this phenomenon. The article assumes that the foreign language training of future engineers will meet the requirements of the time, if they rely on the formation of the skill of self-organization. Particular attention is paid to the concepts of "self-organization", "competence of self-organization." The definition of the competence of self-organization of the activities of students of a technical university in the context of the current state policy of modernization of the education system, in particular, FES HE 3 ++, is proposed. Initiation of the process of self-organization is possible through the formation of student independence, in particular self-organization of the student using the technology of cloud services G Suite for Education by students in a technical college. Self-determination determines the student's readiness for self-organization. The formation of autonomy is actual in the study of foreign languages and is gaining increasing importance, becoming its natural component. The questions of the content of foreign-language preparation of students are analyzed. The structure of modern self-organization skills is described and the conditions for their formation using computer technologies are justified. The features of the organization of independent work on a foreign language in a technical university are considered, based on internal resources of students, such as self-monitoring, self-assessment, self-management, self-regulation, serving as a way to coordinate the auditor and extracurricular independent work of future engineers.

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1. Introduction

Currently, the rapid process of informatization that is taking place in society and in education determines new orientations in the educational space of modern universities, in particular, at the present stage of the educational process, there is an urgent need for graduates of educational institutions that speak one or several foreign languages as part of everyday communication (Almazova, Khalyapina, & Popova, 2017). So, in the professional sphere (Almazova, Baranova, & Khalyapina, 2017) one of the priority areas is the introduction and use of information and communication technologies. New information conditions contribute to the discovery of new ways to improve the quality of the learning process (Zhigadlo & Odinokaya, 2017; Almazova, Eremin, & Rubtsova, 2016). The effectiveness of interaction in the field of education using computer technology is determined by the willingness of the student for classroom and extracurricular independent work, and also in the future readiness for the professional activity of a student as a future specialist, carried out through self-monitoring, self-assessment, self-regulation, and self-organization (Odinokaya, Zhigadlo, & Petrov, 2018).

2. Problem Statement

The observation of the process of teaching a foreign language in a technical university made it possible to identify the deficit of students' foreign language independence, which is manifested in their inadequate capacity for full-fledged and productive foreign language activity in the developing polylingual and multicultural environment of the future engineer, both social and professional.

3. Research Questions

Currently, the researchers are conducting research aimed at finding and justifying productive learning technologies in the context of increasing mandatory requirements for the implementation of the main professional higher education educational programs in various areas of student training. In the Russian universities the transition to the Federal state educational standards of higher education taking into account professional standards (FES 3 HE ++), regulated by Federal Law No. 122 (O vnesenii izmenenij v Trudovoj kodeks Rossijskoj Federacii i stat'i 11 i 73 Federal'nogo zakona «Ob obrazovanii v Rossijskoj Federacii», 2015). This law establishes changes in the Federal Law "On Education in the Russian Federation" (Ob obrazovanii v Rossijskoj Federacii, 2012), which deals with the formation of requirements of the Federal state educational standards for vocational education to the results of mastering the basic educational programs of vocational education in terms of professional skill on the basis of relevant professional standards. The goal of the modernization of FES HE 3 ++ is the division of unified universal (unified to the appropriate level and cross-cutting in levels), unified professional (by rooted groups of specialties / training areas) and professional skills established by professional standards and basic educational programs. It is known that at the present time transferable skill, general professional skill and professional skill act as an indicator of readiness for professional activity of a student as a future specialist.

For graduates of higher education (bachelor's level) in established FES HE 3 ++ (Federal'nyj gosudarstvennyj obrazovatel'nyj standart vysshego obrazovanija, 2017) universal competences are

established, which include, in particular, self-organization and self-development (including health preservation). Code and name of this universal competence of the graduate of the Bachelor's program: TS-6 expressed in ability to manage his time, build and implement the trajectory of self-development on the basis of the principles of self-education throughout life, as well as TS-7 expressed in ability to maintain the proper level of physical fitness to ensure full social and professional activities.

To master universal competencies, bachelor's programs should provide for the implementation of disciplines, which include a foreign language. In a foreign language aspect, the competence of self-organization means the ability and readiness of the future engineer to conduct an effective independent foreign-language activity, that is, his ability and readiness to display independence in mastering a foreign language. As part of the competence of self-organization, three key components can be provisionally identified: the target (awareness of the need for self-management and self-improvement in learning activities, the students' ability to organize themselves in the context of informatization), functional (the need to work on themselves and apply this ability to the conditions of professional activity, work together with the teacher and fellow students in the learning process), personal (awareness for each student of the practical actions he takes). The formation of the self-organization components determines its presence. The formation of students' self-organization skills in the context of the informatization of education is understood as the creation of such conditions for the student's educational activities that will lead to a positive dynamics in the formation of the three components of the self-organization skills.

For graduates of technical directions of higher education (bachelor's level) in the approved FES 3 HE ++ (Federal'nyj gosudarstvennyj obrazovatel'nyj standart vysshego obrazovanija, 2017) the following (GPS) general professional skills are established (Table 01):

Table 01. (General professional skill (bachelor's level))

Name of The Category of General Professional Skills	Code and Name of The General Professional Skill of The Graduate of The Bachelor's Program
Theoretical and practical bases of professional activity	GPS-1. Is able to advise and use fundamental knowledge in the field of mathematical analysis, complex and functional analysis of algebra, analytical geometry and topology, differential equations, discrete mathematics and mathematical logic, probability theory, mathematical statistics and random processes, numerical methods, theoretical mechanics in professional activity
	GPS-2. Is able to conduct research under the scientific guidance on the basis of existing methods in a specific field of professional activity
	GPS-3. Is able to independently present scientific results, compile scientific documents and reports
	GPS-4. Is able to find, analyze, implement programmatically and use in practice mathematical algorithms, including using modern computer systems
Information and communication technologies for professional activities	GPS-5. Is able to solve standard tasks of professional activity on the basis of information and bibliographic culture with the use of information and communication technologies, including the domestic manufacturer, taking into account the basic information security requirements

Financial literacy	GPS-6. Is able to use the basics of economic knowledge in various spheres of life
Legal literacy	GPS-7. Can use the basics of legal knowledge in various spheres of life

General professional skills are socially significant activities for the implementation of specific functions and duties, for the performance of which both professionally conditioned qualities of the individual, as well as special knowledge, skills are required. Professional skills can be established by an exemplary basic bachelor degree program as mandatory and (or) recommended.

4. Purpose of the Study

Issues related to the skill of self-education in educational and cognitive activities in Russian education have recently attracted the attention of many researchers and teachers. The questions connected with self-organization in educational and cognitive activity are touched upon and covered in the works of Karambirov (2014), Kurganskaya (2014), Miroshkina and Gor'kova (2014), Popova, Almazova, Khalyapina, and Tretyakova, (2017), etc. The necessity of understanding the essence of self-organization in the educational process is substantiated in the works of foreign researchers, in particular, Dummel and Stahl (2018), Leigh and Herbert (2018), McCollum and Barber (2017), Munro, Weyandt, Marraccini, and Oster, (2017), Stamp (2013), Wan and Niu, (2018), Ye (2017), etc. Despite the fact that the term self-education skills have been used in educational practice for several years, a common understanding of this phenomenon.

5. Research Methods

At present, among many educators, researchers raise questions about the extent to which students of higher educational institutions, in particular, a technical college, are self-organized in the educational process at training sessions using computer technology tools. In this regard, in March 2018, a study was conducted on the basis of Peter the Great St. Petersburg Polytechnic University, whose goal was to analyze the practice of organizing the process in foreign language classes using the technology of cloud services G Suite for Education. The basis of this activity is designed didactic materials, pedagogical support system, diagnostic procedures. The logic of the transition from one stage to the next should be expressed from the explicit managerial functions of the student's educational activity on the part of the teacher to the manifestation and self-management of these functions by students. The experiment was conducted in three stages.

Let's consider the stages of forming the skill of self-organization. At the first stage, students need to offer projected learning materials and assignments with an algorithm that provides step-by-step execution of training assignments with emphasis on individual activities for the purpose of their self-analysis, self-awareness, self-correction, and using the technology of cloud services G Suite for Education.

At the second stage, students seem to have a certain degree of freedom in the performance of training assignments using the technology of cloud services G Suite for Education. The peculiarity of

these tasks is the implementation of their choice by students, who from the point of view of students are most interesting, personally and professionally significant for them, and offered by the teacher. Educational tasks prevail in non-auditory independent work of students with the ability to detail, additions, explanations, step-by-step support, adjustments. The main characteristic of this stage is the taking of certain responsibilities and conscious implementation of educational activities by students, as well as the implementation of actions in the process of educational activities.

At the third stage, students are offered study assignments with the possibility of their selection. Students are given the opportunity to independently choose a training topic, within the program, information sources, the time of the assignment, to choose the place.

In total, 45 students participated in the experiment. Upon completion of the training, we carried out a diagnosis consisting of an author's online questionnaire. To obtain the most objective result, we fulfilled the following conditions: an online questionnaire based on the Google Form web service was developed, a modern tool with a set of questionnaire templates for quick polling; the diagnostic procedure was conducted by us on the World Wide Web - the Internet. The questionnaire consisted of nine consecutive questions (Table 02).

Table 02. (A questionnaire on identifying features of self-organization using the technology of cloud services G Suite for Education by students in a technical university)

№ Question	Questionnaire questions	Variants of answers
1	What tools of the technology of cloud services G Suite for Education did you use in the course of teaching a foreign language?	- Google disc, - Calendar Google, - Hangout, - Google+, - Gmail, - Google groups, - Documents, tables, forms, presentations
2	Did you know about Locked mode in Quizzes in Google Forms?	- Yes, I knew. - No, I didn't know.
3	Did you know about Tour Creator?	-Yes - No
4	Did you take advantage of the opportunity to receive a teacher's consultation that you recorded online? (implemented using the Google Calendar service)	- Yes - No
5	Did you use the opportunity to use the technology of cloud services G Suite for Education at the working (educational) place?	- Yes - No
6	What attracted you to using the technology of cloud services G Suite for Education?	- Security in the use of free tools, - Providing with the necessary tools for solving any learning tasks, - User-friendly interface, - Ability to interact online all participants in the

		educational process, - Planning of joint work, - Ability to publish training materials, - Ability to host training video materials, - Keeping a lot of teaching materials, - Editing together with co-authors of educational documents, presentations and spreadsheets
7	Do you think that the use of cloud services G Suite for Education promoted effective self-organization in the learning process?	-Yes - No
8	Did you know that with Google's intelligent technologies, such as natural language search and optical character recognition, automatically find the files you need for work and add them to the Quick Access section, saving your time?	-Yes - No
9	Do you agree with the opinion that the systematization of educational material on the Internet makes it more accessible?	-Yes - No

6. Findings

Our survey showed that respondents most often use the following tools for cloud services G Suite for Education: Gmail - 86.7%, - Google disk - 60%, - Documents, tables, forms, presentations - 46.7%, - Google+ - 33.3%. We found that respondents are familiar with the Locked mode in Quizzes in Google Forms to keep students focused and distraction-free during tests and quizzes giving them full control over assessments. Also, we see that the greater part of the respondents - 53.3% - expressed a desire to conduct online consultations using the Google Calendar service. The overwhelming majority of respondents - 93.3% have the opportunity to use the technology of cloud services G Suite for Education at the working (training) place. Also, the minority part of respondents (only 2%) are familiar with Tour Creator, a web-based application, due to its new option in G Suite for Education that allows to create virtual reality tours using footage from 360° cameras or the huge library of existing Street View content and view the tours on Poly.

Most of all the respondents are attracted by a convenient interface - 66.7%, editing together with co-authors of educational documents, presentations and spreadsheets - 40%, the possibility of online interaction of all participants in the educational process - 40%, as well as the storage of a large number of training materials - 33, 3%. Next, we were interested to find out whether the use of technology for cloud services G Suite for Education facilitates effective self-organization in the learning process, and analyzing the results of the questionnaire further, we found that - 33.3% of respondents answered positively, 26.7% - negative and 40% found it difficult to answer. All respondents - 100% agree with the opinion that the systematization of educational material on the Internet makes it more accessible.

Making a general conclusion on the results of the study, we can say that at the present time, most students are familiar with the technology of cloud services G Suite for Education and a quarter of students are ready to use it for self-organization. Information technologies contain a huge educational potential for the formation of professionally competent graduates of various areas of training. To take full advantage of the opportunities presented by the graduate to an independent and self-organized one, which starts with the education in educational institutions and with the contact of professional teachers in various fields of science.

7. Conclusion

Based on the foregoing, we believe that, in general, we have identified some of the possibilities of G Suite for Education as a means of self-organization of the information and educational space in a technical university. Using the technology of cloud service G Suite for Education can serve as a budget computer infrastructure of the university by using cloud computing. G Suite for Education is a promising and sought-after educational platform for creating favorable conditions for the productive development of academic disciplines of various cycles; strengthening of intersubject communications between various disciplines and computer science, creation of conditions for self-organization, self-realization and self-development of a person. The use of the possibilities of G Suite for Education can contribute to the creation of such conditions for the student's educational activities that will lead to a positive dynamics in the formation of the three components of students' self-organization skills in the context of the informatization of education. The method of teaching presented in this article, according to the authors, also provides ample opportunities for both teachers of the professional cycle and for teachers of a foreign language, which precede vocational training.

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