



**Professional and personal  
self-development of a  
future engineer by means  
of foreign language**



## PROFESSIONAL AND PERSONAL SELF-DEVELOPMENT OF A FUTURE ENGINEER BY MEANS OF FOREIGN LANGUAGE

## DESARROLLO PERSONAL PROFESIONAL Y PERSONAL DE UN INGENIERO FUTURO MEDIANTE EL LENGUAJE EXTRANJERO

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### abstract

This article discusses the role of a foreign language in solving the problem of professional and personal self-development of future engineers. It analyzes the relevance of textbooks of professional orientation in foreign language in the educational process.

**Keywords:** professional and personal self-development, training manual, vocational training, achiever, independent learning activity.

Este artículo analiza el papel de un idioma extranjero en la resolución del problema del autodesarrollo profesional y personal de los futuros ingenieros. Analiza la relevancia de los libros de texto de orientación profesional en lengua extranjera en el proceso educativo.

**Palabras clave:** autodesarrollo profesional y personal, manual de capacitación, formación profesional, triunfador, actividad de aprendizaje independiente.



## Introduction

Higher education in modern Russia is reaching a new level, which is characterized by a high plane of development of scientific, technological and innovative components. A modern higher school should have a streamlined, effective system for managing the quality of training future specialists, taking into account the requirements of the modern labor market and the needs of the region. The specialist of the 21 century, in the era of severe competition between people and ideas, is an extremely professional person who has an imaginative ability, makes unusual decisions and takes responsibility for them (Mizyurova, 2017).

The problem of professional and personal self-development is relevant today, since Russia's developing into the transnational initiative of communication significantly affects its position in the competitive struggle, which is determined by the success of vocational training and education. The Federal Law on Education, educational standards and third-generation educational programs "Plus, Plus", adopted and used in the practice of the educational process, are aimed at solving the problem of the phenomenon of professional and personal self-development of a specialist who meets the needs of modern and promising labor market.

The subject matter of our study is a foreign language, the significant role of which is characteristic for the sphere of vocational training. Foreign language is considered as: 1) one of the means providing access to any kind of information; 2) a means of transnational and international collaboration and cooperation in science, public activities; 3) a means of overcoming national and cultural backwardness in various spheres of society; 4) one of the means of removing the linguistic barrier while ensuring the right of people (especially young people) to free movement in the world, when choosing a place, forms, types of education and work, leisure activities, participation in various international organizations (Mizyurova, 2015). Undoubtedly, today foreign language has the role of solving the problems of communication of specialists, for example, technicians (builders, mechanics, electricians, etc.) from different countries, by using the necessary knowledge, speech skills and abilities. In order to meet the level of modern requirements, the future specialist needs to continuously work at self-improvement, to professionally self-perfect.

## Materials and Methods

Professional and personal self-development is the process of personality formation (if to define

broadly) and the professionalism in self-development, training, professional activities and interactions. Professional and personal self-development begins at freshmen courses. According to E. A. Vlasova, professional and personal self-development of future specialists is carried out in three stages: 1) oriented – it consists in students' formation of professional intentions, the system of knowledge about self-development of the personality and his/her professional orientation; 2) efficient – it consists in students' acquisition of a new method of action; 3) control and corrective – it intends the students' mastering and consolidation of new methods of action in practice (Vlasova, 2007).

Professional and personal self-development of the future specialist must be activated and corrected in the educational process. There are the following factors for activating the professional and personal self-development of the future specialist: - the student's conviction in importance of professional and personal self-development; - his ability for creative perception, understanding and transformation of the reality and himself in it; - orientation of the educational process of the university toward the professional and personal self-development of the student (Soleimani et al, 2014).

In their studies, E.F. Zeer, E.E. Chudin and other scholars define the mechanism of professional and personal self-development as a future specialist's self-organization of his own educational and developmental space. The scholars such as B. Z. Wulf, V. N. Kharkin, V.E. Chudnovsky see another real-life self-development mechanism in the creation of real professional situations. Modeling real professional situations for the students will provide an opportunity to show creativity in mastering a future profession, to bring the value of work into the foreground. However, professional and personal self-development is impossible without the very personality's participating. Therefore, we believe that readiness for professional and personal self-development is the main criterion for the effectiveness of vocational training. The effectiveness of preparedness depends on the following pedagogical conditions: - implementation by the teacher of pedagogical support for students; - internal motivation and focus of the students on the creative mastery of foreign languages; - encouraging the students to independent learning activities in organizing interaction of the subjects of learning activities. We see the result of the process of preparing for professional and personal self-development in changes in knowledge, abilities, personal and professional qualities.

Today's technologies of teaching foreign languages face one common problem – to



organize the student's learning activity in such a way as to ensure the greatest learning motivation, in which foreign language speech activity serves as a means of solving the professional and objective tasks of the future engineer. In the first place, this is the presence of special terminology, special general scientific and specific professional vocabulary, corresponding grammatical constructions. Optimally selected material consolidates all components of motivation: needs, interests, emotions, motives themselves. In this case, we note the relevance and need for creating and using copyrighted textbooks of professional orientation by teachers of the department "Foreign Languages and Speech Culture" of SSAU. So, for example, two guidance manuals have been worked out for the profiles: "Heat and Gas Supply and Ventilation" and "Expertise and Property Management" in 08.03.01 Construction. These manuals are assembled in accordance with the Federal educational standard of higher vocational education in a foreign language for undergraduate students (Rokityanskaya, 2014a; Rokityanskaya, 2014b). A final-year student must master, among other general professional competencies, "one of the foreign languages at the level of professional communication and translation" (Federal State Educational Standard of Higher Education). The practice of working using these textbooks in student groups shows that the students read the text of the manual with great interest, finding a lot of interesting information (the history of the gas field in the Saratov region, the problems of gasification of the Saratov region, boiler equipment, thermal power plants, energy supply systems, modern construction equipment, industrial safety, etc.) (Mizyurova & Rokityanskaya, 2017). The topics and content of the sections of the manual are coordinated with the working curriculum of the undergraduate degree program in 08.03.01 Construction. The department "Construction, Heat and Gas Supply and Energy Supply" is the graduating for two degrees: "Construction" and "Heat-and-Power Engineering and Thermal Fluids Science". The joint activities of the teachers of the two departments greatly helps in working on profession-oriented teaching aids, transferring a student from a passive consumer of knowledge to an active one who can formulate a problem, analyze the ways of solving it, find the optimal result and prove its correctness. For example, within the framework of a cooperation agreement for training highly qualified specialists and facilitating their employment, an industrial tour of students at HES-5 has been organized. The Saratov HES-5 is one of the first in the country and the only power plant in the Saratov power plant with a block layout of equipment. After being instructed in safety, the students

familiarized themselves with the production process of the station, the work of the operational dispatch center, received detailed information about the operation and technical parameters of power equipment, participated in the discussion, and actively asked the questions about the main and auxiliary equipment of the station. A visual representation of the work of the production at the heat electropower station helped the students understand the difficulties in translating the text material of the manual, participate in discussions in a foreign language, correctly asking and answering questions using the new of profession-orientated vocabulary. The corresponding psychological and educational situation in the classroom helps the students express their understanding using words, terms and concepts in the way that this understanding becomes knowledge. As practice shows, knowledge does not always mean the ability to use them effectively. Therefore, it is necessary to create a learning environment for organizing independent learning activity, including a set of learning methods (for example, project methods, role-playing games, etc.). To successfully hold a round table on the topic – The Problems of the Residents of a New Residential Area of the City of Saratov – the students of course 2 were expected to show independence and creativity.

Each student had his own definite solution to the existing problems of the region, the need to build a new gas distribution point and a high and low pressure gas pipeline for new consumers in the residential area of the city of Saratov was especially demonstrative and convincing. On the basis of the learned material of the profession-oriented teaching aids, the students independently work using additional sources of information in a foreign language, appearing at various events at the university: for example, in the intellectual game-competition "Energy Saving - the Lifestyle of Modern Man", the scientific-practical conference "Cultural and Historical Legacy of Construction: Yesterday, Today, Tomorrow", interdisciplinary competition "Properties of Building Materials".

Foreign language Classes in "Construction" are held in a new classroom, which has been opened thanks to the joint activities of the department "Construction, Heat and Gas Supply and Energy Supply" of SSAU with REHAU (the official manufacturer of plastic windows in Saratov). The classroom has been facilitated with the branded windows with energy-efficient REHAU glazing, mock-ups of modern engineering construction equipment, samples of water and electric underfloor heating, sound-absorbing sewage systems, water supply systems and radiator wiring. It also demonstrates installation tools that allow pipes to be connected



using cold axial pressing. The cooperation of SSAU and REHAU company is new opportunities for our students.

## Results and Discussion

Within our studies, we tried to trace the dynamics of the development of students' professional and personal self-development by means of a foreign language. A quantitative and qualitative analysis of the developed skills in a foreign language in experimental and control groups of the 2nd course allowed us to identify the students with high, mediate and low levels of their independent learning activity. Low level – narrow independent activity (they do not cope with the tasks without the help of a teacher); mediate – partly independent activity (they do it on their own, but poorly); high level is actually an independent activity (they cope with the tasks by themselves without the help of a teacher). A comparison with the initial data shows that some progress has been made in learning, and more significant one is in the experimental group, where out of 100% of the students with a low level of self-development at the beginning (according to the results of the ascertaining experiment), only 20% has remained (as compared to 83,3% at the beginning and 50% at the end in the control group). At the same time, the students with a high level of self-development constitute 50% (16,7% in the control group), with the average level – 30% (33,3% in the control group). The students with average intellectual skills in the experimental group have constituted 3,0 and it is fair to the higher result than that in the control group (2,5).

## Conclusions

Thus, as a result of training, about 50% of the students in the experimental group has managed to shift from low to higher level of self-development, while in the control group their number is about 25-30%. The formation of professional and personal self-development in the experimental group should occur faster than in the control group.

It is important to note the role of the teacher in shaping the creative personality of the future engineer who is capable of self-developing and self-educating. Invisible threads of the organization and management of the creative activity of students should be in his hands. The described method allows to include the elements of problematical character in teaching of foreign languages, to introduce the creative elements into the guided independent practice of the students, to stimulate their professional training in the learning process.

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