

## APPROACHES TO THE FUTURE ENGINEERS FOREIGN COMMUNICATIVE CULTURE FORMATION

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### Abstract

**Purpose:** The main aim of the article is to define the approaches to the formation of future engineers' communicative culture. The main research method used while working on the article is analysis of the domestic and foreign publication space for critical consideration of different ideas on the pedagogical problem of the future engineers' foreign language communicative culture formation process.

**Methodology:** In this study Content abstraction, generalization and the comparative method was applied.

**Result:** The approaches (cultural, connectivism, technological, axiological, communicative, environmental approach) will help to the formation of the communicative culture of future engineers in the process of foreign language training.

**Applications:** This research can be used for engineers and companies.

**Novelty/Originality:** In this research, the model of approaches to future engineers' foreign communicative culture formation is presented in a comprehensive and complete manner.

**Keywords:** *approaches in pedagogy, communicative culture, future engineers, foreign language training, formation, educational process.*

### INTRODUCTION

Communicative culture is an essential component of the future technical specialist's professional culture. The development trends in the world society have actualized the pedagogical problem of the future engineers' foreign language communicative culture formation process. Hence, the aim of our article is to define the approaches to the formation of future engineers' communicative culture.

### RESEARCH AND RESULTS

When choosing approaches, we took into consideration the primary necessity of the strategy and the dominating philosophic-pedagogical concept of foreign language professional training for future engineers. The use of the *Cultural Approach* (Zimnyaya, 2004) is based on the research theme and therefore, on the necessity for students to gain socio-cultural experience when learning a profession-specific foreign language. The essence of the Cultural Approach is considered in conducting the educational process within cultural environment, in dialogue between various cultures, and culture recognition in learning process (Ardakani et al, 2015). The learner not only studies the culture but lives through it as a personal socio-cultural experience.

The particular features of the Cultural Approach when teaching a profession-specific foreign language to future engineers are:

- Consideration of learners' existing social-cultural experience.
- Creating a virtual multi-cultural environment that simulates cross-cultural communication (everyday living, personal, socio-political).
- Formation of learners' values during their cross-cultural communication.
- Creating general cultural awareness of a future engineer when teaching a profession-specific foreign language via communication in that language.

One cannot disagree with the opinion of the following group of researches (Passov, 2005) stating that when learning a foreign language, the Cultural Approach carries out the following functions: developing, training, educational, cognitive and profession-oriented. Refer to Table 1 for details.

**Table 1:** The Cultural Approach Function Characteristics when teaching a profession-specific foreign language to future engineers

Developing function	Training function	Educational function	Profession-oriented function
Development of socially and professionally important skills that play a significant role in learning processes (psychological: speech cognition, memory, imagination, perception; speech skills: phonemic hearing, language sense, language guessing, imitation, logical reasoning; character traits: willingness, perseverance, productiveness, ability to learn)	Training all speech functions (reading, speaking, auditing, and writing) and various forms of communications which enable learners to enrich their inner world when experiencing a foreign culture (cross-personal/cultural communication, defending their views)	Ethical education of learners via enrichment of the educational discipline and the methods used	Teaching profession-specific foreign language that is characteristic for specialists from certain countries, acquirement of professional cultural norms of communication

As we can see from Table 1, the Cultural Approach plays a vital role in forming future engineers' communicative culture, as it helps to achieve integrated goals in teaching a profession-oriented foreign language (training, developing, educational, and profession-oriented). Moreover, it is the Cultural Approach that influenced the choice of Technological, Axiological and Connectivism Approach as the methodological foundation of the thesis. It is a well-known fact that Pedagogy is a culture-conforming science; the scientific-pedagogical idea reflects the level of development of a society. That is why it is natural and rational to use this particular approach. The Cultural Approach when learning a foreign language implies not only the enriched content of the socio-cultural themes but also a radical change in methods and forms of work corresponding to the demands of the culture within certain societies. According to M. Kastels, the modern society is ruled by informational, technological and technocratic cultures ([Kastel's, 2000](#); [Kastel's, 1999](#)). Thus, we think it is necessary to have the principles of *connectivism* as a foundation for forming communicative culture of future engineers, as a new stream in education philosophy ([Downes, 2005](#); [Hutchinson & Waters, 1987](#); [Siemens, 2005](#); [Lieberman, 2017](#); [Shestakov et al, 2017](#); [Nisawa, 2018](#)).

We can highlight the following principles of connectivism:

- Learning is constantly changing environment;
- Knowledge goes to networks;
- Learning is building your own network;
- Learning is not a process, but a permanent state;
- Mental and behavioral phenomena can be described by networks of simple connected elements;
- Learner's personality is above all;
- The learning process is sustained from outside and is based on the involvement of various information sources.

The approach is revealed by such notions as Personal Learning Environment (PLE), Personal Learning Network (PLN), Personal Learning Plan (PLP) and Open Educational Resources (OER). Learning Network is created by connecting users, different sources of information (magazines, websites, encyclopedias, books, databases), and organizations. Due to the use of such networks, a user's brain also creates a similar neuron network, which is highly versatile. The less active users and sources of information become obsolete i.e. the learning process is multithreaded. This factor influenced the use of connectivism as a foundation informing the communicative culture of future engineers. As the main personal skill in such approach is the ability to establish connections between the network users as well as to differentiate multiple sources of information, knowledge, popular ideas and concepts. In addition, working place of a specialist in any industry these days goes far beyond the physical boundaries of the office and networking becomes more substantial.

Let's have a closer look at the peculiarities of the education process when using connectivism. A teacher, in this case, is only a moderator, sometimes taking an expert role, yet the educational process is built on self-management and interactive learning principles; the teachers' presence is peripheral. At the same time, the teacher acts as a coordinator and expert, however, teacher's duties are equally spread between all network users. The main purpose of this approach is to create a learning contest by equal participants which will be sufficient for their self-education.

Thus, let's describe the process of forming the communicative culture of future engineers using connectivism:

- Intense social multicultural communication;
- Increase productivity due to the presence of other network users;
- Mutual formation of the educational content;
- Every network participant is a source of new knowledge, communication with whom is a source of gaining new skills;
- Development of an informational culture of future engineers by using large volume of authentic information sources;
- Developing tolerance and skills to cooperate effectively in a virtual multi-cultural team;
- Developing abilities for learning, self-education, and self-development as a life-long process.

As it was mentioned above, one of the major cultures nowadays is the technological culture. That is why it is important to use the *Technological Approach* as a methodological foundation in the formation of the communication culture of future engineers. The main sign of domination of the technological culture is the presence of technologies in all socio-economic processes in general. The use of the Technological Approach, which is more common for exact sciences, is indeed a controversial subject among scientists and practicing teachers. The supporters of the Technological Approach ([Tarasov, 2000](#)) explain that it makes possible to systematize, formalize, and control the learning process as teachers can pass on their own ideas by constructing a system of consecutive steps that ultimately guarantee positive results. The educational process itself becomes effective, universal, resultative, optimal and science-intensive. Following M. Tarasov, we define the Technological Approach as a systematic method of creation, application, and definition of the whole teaching process and knowledge mastering utilizing technical and human resources and their cooperation. The objective of the approach is to optimize the educational patterns ([Tarasov, 2000](#)).

In the current context, the Technological Approach regulates the researcher's activity through pedagogical design. The principles of the pedagogical design are: firstly, the technology of communicative culture formation for future engineers when learning a profession-oriented foreign language; secondly, creation of the innovative educational environment.

Therefore, we believe that the technological approach of forming future engineers' communicative culture is aimed at:

- First of all, preliminary design of teaching and educational process with the subsequent possibility of reproducing this project in the foreign language training of future engineers, as well as future specialists of other faculties in the non-linguistic high school for the educational level “bachelor”;
- A specific objective goal setting, which is revealed in the detailed statement of tasks. It enables objective control over the quality of the set goals' achievement at each stage of the foreign-language professional training of future engineers;
- Design and adoption of the innovative educational environment of foreign professional training for future engineers in the teaching and educational process;
- Achievement of the structural and substantial integrity of technology for the formation of the future engineers' communicative culture, i.e. the possibility of making changes in the content of training without affecting other components with the purpose of its (technology's) implementation in the foreign language training of specialists of other areas of training in a non-linguistic university at the “bachelor” educational level;
- Substantiation of optimal approaches and principles, selection of optimal methods, forms, and means of training for the formation of future engineers' communicative culture;
- The capability of realizing a constant, high-quality, operational feedback allowing to adjust the process of foreign language training of future engineers.

The described above justification in selecting the Cultural Approach as a methodological basis for foreign language training of future engineers is that the person is constantly assessing their moral and philosophical surrounding environment, making ethical choices, setting goals, formulating problems, finding the right solution and its implementation.

Hence, the natural consequence is the use of the Cultural Approach when the student is the object of cultural influence and the subject of the creation of cultural values. Consequently, in our deep conviction, the Axiological Approach ([Kan-Kalik, 1995](#)) is closely connected with the Cultural Approach. The *Axiological Approach* implies a form of vital values set for the students which will later become the guidelines for the daily, life and professional choice in the conditions of surrounding reality.

The axiological Approach in education is considered to be the basic one for the humanistic paradigm. It recognizes each participant in the educational process as an active value-motivated subject of educational activity which, in turn, makes it possible to build subject-subject relations within the educational body. This approach implies the formation of a system of humanistic social and moral value orientations of the future professional's personality. Without this system development of the society is impossible, as well as the social and professional development of the individual. The future engineer should

have a completely stable system of values which in the future will constantly determine his life and professional development path.

Thus, the features of Axiological Approach implementation to foreign language training of future engineers are seen in the following:

- Creation of a system of values and motives that will act as regulators of students' life activity, and also contribute to the establishment of social ties of the future professional, the search for an individual's place in a multicultural society;
- Cultivating tolerance and respect for the cultural values of their own country and the country of the language studied;
- The following motive types are attributed to the system of motives of the future engineer:
  - Communicative (need for communication);
  - Linguistic-cognitive (desire to learn foreign language phenomena);
  - Professionally oriented (acquiring professional knowledge through and with the help of a foreign language);
  - Linguistic cultural studies (interest in comprehending of culture and history of the country of the studied language);
- Recognition of each student as a value, with his own motives, interests, socio-cultural experience;
- Designing the content of foreign language vocational training aimed at forming a system of humanistic social and moral values of the students (personal, socio-cultural, professional);
- The following values are referred to as the personality of a future engineer:
  - Personal (beauty, originality, willpower, care, love, kindness);
  - Socio-cultural (art, culture, nature, patriotism, altruism, humanism);
  - Professional (social status, interest in work, active professional position, harmony).

The choice of the Communicative Approach ([Passov, 2005](#)) as a methodological basis for the process of forming the communicative culture of future engineers is determined by the research subject.

Our investigation of the works of the above-mentioned authors has identified the following distinctive features of a communicative approach to the formation of the communicative culture of future engineers:

- Foreign language professional communication is the means and goal of learning at the same time;
- Formation of special skills and development of students' abilities: to start communication process, to stop and resume it; defend your own opinion on the basis of creating your own strategic line and tactics of behavior; communicate with several voice partners taking into account the change of roles in the speech act; predict probable verbal behavior of communicants; consider non-verbal means of communication;
- Organization of foreign language communication (mediated and immediate, in real and delayed time) of future engineers in an innovative educational environment based on dynamic professionally significant communicative situations united by communicative mechanisms;
- Creating a communicative situation (of household and professional orientation) based on cultural background of the country of the studied language.

In addition, the basic principles of a Communicative Approach also characterize the process of forming the communicative culture of future engineers. Thus, novelty, speech activity, individualization, functionality, situational should be attributed to the basic principles of the communicative approach according to E. Passov.

If we talk about the principle of novelty, we consider that it should be necessarily implemented at all levels of learning and communication: choice of subjects and communication situations, used methods, forms and work process, constant updates of content and, accordingly, the education means.

The speech activity principle implies the teaching of foreign language communication in the process of active speech activity. The principle of functioning requires teacher to select educational material and create communication situations carefully.

The greater the probability of subsequent speech activity experience uses in real life, the more valuable its value. Also, the principle of functioning implies the preservation of the unity of four types of speech activity (reading, listening, speaking and writing) in the learning process. The principle of individualization is closely connected not only with the Communicative Approach but also with the Axiological Approach as its implementation allows each student to be perceived as an independent value, to take into account personal motives, interests, experience, inclinations, future profession, needs.

One of the most important principles of the Communicative Approach is the principle of contextuality according to which communication occurs only if the communicative situation develops. Under the communicative situation, we will assume the set of circumstances of communication (the subject of communication, the number of communicants, verbal and non-verbal communication, the cultural background of communicants, their motives, values, degree of awareness of the communication subject). In other words, it is a dynamic system of students' relationships that contributes to development of communicative motivation. It is both: foundation and means of communication of future professionals in a foreign language ([Mendonça & Andrade, 2018](#); [Abishov et al, 2018](#)).

*The Environmental Approach* to the formation of the communicative culture of future engineers is specified by the urgency of the needs of modern society to function in the global information space. A person throughout his life arrives in a sociocultural environment that exerts more and more influence on him. Therefore, in order to prepare a student for future life and professional activity effectively, the educational environment must be a view of individual's functioning environment.

Thus, the main goal of implementing the Environmental Approach to the formation of the communicative culture of future engineers is to ensure comprehensive socialization and effective adaptation of students in changing socio-economic conditions. Therefore, with this approach, the educational environment is an integral part of the general socio-cultural environment of students, which has significant elements of spontaneity and even chaos. This environment is saturated with many information sources, where a certain social experience is concentrated. It is assimilated by every student in accordance with personal inclinations, abilities, interests, and needs. The formation of a person and personality takes place through the process of obtaining social experience ([Irvani et al, 2015](#); [Selomo & Govender, 2016](#)).

The choice of the Environmental Approach as a methodological basis for the process of the communicative culture formation of future engineers is primarily attributed to the fact that the educational process is no longer limited territorially to the educational institution. But, on the contrary, it is characterized by the possibilities for the students to freely choose place, time, programs, forms and methods of teaching. Correspondingly, the problem of designing an innovative educational environment that provides trainees with a set of opportunities for self-education and self-development is actualized. At the same time, in justifying the Environmental Approach to the formation of the communicative culture of future engineers also the following factors were taken into account: intensive development of the communication means; removal of socio-economic boundaries; a new ratio of working hours and leisure time; changes in the nature and principles of the organization of labor. In addition, according to T. Meng, the main task of implementing the environmental approach in education is development of the world of communications, connections, and interrelationships between the international educational systems, institutions and their educational environments, and, as a consequence, the integration of these environments into a single communicative cultural space ([Passov, 2005](#)).

Analysis of the domestic and foreign publication space highlighted continuing scientific interest in the environmental approach. The works of K. Krechetnikov, T. Meng, L. Hutchinson and A. Waters, G. A. Lieberman, are devoted to this approach ([Krechetnikov, 2003](#); [Meng, 2008](#); [Hutchinson & Waters, 1987](#); [Lieberman, 2017](#)).

Taking into account the achievements of the above-mentioned authors, the peculiarities of the environmental approach implementation to the formation of the communicative culture of future engineers are formulated:

- The educational process is open, self-organizing, non-linear, dynamic, developing in time and space competitive system;
- Active participants in the educational process are: a student, a teacher, an environment. The main task of the teacher is to turn any environment into your ally, so-called assistant in matters of education and upbringing;
- Effectiveness and productivity of the educational process depends on the degree of coherence, mutual enrichment, co-development, the complementarity of the environment and students;
- Principles of implementation of the environmental approach: mediation, manufacturability, variability;
- Formation of socially significant personal qualities of trainees without obstacles for their individualization;
- Students are not users of the innovative educational environment, but its creators in the process of joint creative activity with the teacher;
- The innovative and educational environment is a special personal student's space and at the same time a micromodel of his communicative culture ([Tokmazov & Pankina, 2017](#); [Zubkova, 2017](#)).

## CONCLUSION

Thus, having substantiated the methodological basis of the research, further scientific research is seen in the development of the technology for the formation of the communicative culture of future engineers in the process of foreign language training.

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