Main aspects of developing the communication competence of future engineers

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Abstract. Communicative competence in the professional growth of a future engineer on the example of teaching the Russian language as the most important problem of vocational education. The author analyzes the main aspects of the formation of communicative competence in the process of language teaching, the assimilation of which is one of the key points in raising the level of professional activity of future engineers.

1 Introduction

Everyone knows that the cardinal changes that have taken place in all spheres of human activity have also affected the system of higher professional education. New economic realities demanded an improvement in the quality of training of future specialists. This was explained by the growing demands of society and, consequently, employers for future professionals, since social and economic working conditions had a strong influence on the development of new modern production technologies. The result of these processes is the obsolescence of existing knowledge and skills, the loss of their relevance. Great professional competition requires a person to constantly grow both professionally and spiritually throughout life.

Many scientific studies are currently paying great attention to the consideration of issues related to the formation of professional competence of specialists in various fields of human activity. Modern pedagogical science puts the personality of a professional in the first place, since it is his value attitudes that will influence the results of work. Only professional activity contributes to the most complete self-realization of the individual, and only it provides the maximum opportunity to satisfy the individual's need for social recognition and respect. Also, the professional activity itself to a large extent affects the formation of the personality of a professional. Modern scientific research, which considers the problems of becoming future professionals, states the unpreparedness of university graduates for their professional activities. Many scientists, including V.P. Andronov, E.F. Zeer, V.V. Kraevsky, R.M. Nizhegorodtsev [1,2,3,4], note that professional development is associated not only with the system of knowledge, skills and abilities, but also with the possession of professional competence.

To build a didactic model for the formation of the communicative competence of future engineers using language tools based on the above pedagogical conditions, we correlate the...
2 Materials and methods

Considering the latter in relation to possible creative productivity, one can single out a certain gradation of the complexity of the nature of the activity, leading to a more creative and effective result. This is due to the main content of the educational process - the development of knowledge, which V.P. Bespalko proposes to consider as a process consisting of four levels.

Level 1 - student - the simplest level of reproductive activity. At this level, all components of the task are known (goal, situation and actions to solve it).

Level 2 - algorithmic - a more complex level of reproductive activity. In a task designed for this level, only the goal and the situation (conditions) are given. The student is required to apply previously learned actions to solve it.

Level 3 - heuristic - is the first level of productive activity. In the course of independent processing of known information, the student obtains subjectively new (i.e., new only for him) information.

Level 4 - creative - the most difficult level of productive activity. At this level, a person sets a goal for himself, formulates it, details it, and then searches for possible situations (conditions) and actions leading to the achievement of his chosen goal. An example of this kind of activity is research activities to solve scientific and production problems. Based on this, the first stage, reflected in the subject of our study, will be presented as the initial one. The third and fourth are taken almost entirely and superimposed on the sphere of communicative competence. As a result, the following gradation of the levels of formation of the communicative competence of future engineers is obtained: reproductive, basic heuristic and advanced creative.

The reproductive level of formation of communicative competence is characterized by an orientation towards the use of personality-oriented communication opportunities and the formation of students' multicultural competence. At the same time, the main learning is the imitative, reproducing nature of the activity, which ensures the reproductive stage of educational activity. In relation to the teaching of a foreign language, this is manifested in the accumulation of vocabulary, a predisposition to heuristic activity and the prerequisites for the formation of creativity in the future. Here, students demonstrate mastery of the language as a means of dialogue between cultures and the transfer of professional and personal meanings. Computer facilities here play the role of an accompanying element in the traditional system of exercises. The basic heuristic level is based on the conditions associated with the formation of a communicative environment and the use of heuristic methods of communicative self-development. At the same time, a solid foundation is laid for language training before making creative decisions in the further learning process and beyond the framework of university training. And also significant are the components of the logical construction of speech and adaptability to the social environment. These features provide the second, partially exploratory stage of educational activity, the essence of which is the search for educational resources aimed at the creative self-realization of the student in the process of communicative training by means of the Russian language. At the same time, the language becomes a means of communicative search and organizational decision-making. There is an unconventional discursive system of exercises using language levels.
3 Results

The increased creative level of training of future engineers provides for the most active use of teaching aids combined with a computer, which provides maximum opportunities for mastering heuristic methods of communicative activity, inclusion in discussions, and full possession of computer technologies and programs. Here the component of communicative competence operates, associated with the creative mastery of the language, which allows you to feel a certain degree of freedom in its professional application. There is a maximum attraction to creative self-realization, which is carried out with the help of a foreign language as a creative subsystem of the professional activity of the future engineer. The considered features determine the problematic stage of communicative competence. Here, a problematic system of exercises into constructive exercises is needed in combination with distance systems with traditional means.

4 Discussions

As is known, speech plays the main role in the process of communicative competence. Speech is verbal communication, i.e. the process of communication through language. There are the following types of speech: external and internal (fig. 1). External speech is subdivided, in turn, into oral and written, and oral-into monologue and dialogic.

Fig. 1. Types of speech activity

<table>
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<tr>
<th>Internal</th>
<th>External: 1. written</th>
<th>2. oral: monologue, dialogic</th>
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Types of speech activity
sounds, letters perceived by the ear, visible by sight, and speech movements produced by a person (since the sounds of a language cannot appear without speech movements). From this it is clear that written speech appears later than oral speech and is formed on its basis. This applies to its development both in society and in the individual life of a person. The processes of analysis and synthesis of the visible and audible word are different. It follows that the transitions from one to the other must be specially designed. This is the task of teaching writing.

The audible speech spoken by someone is called oral speech. In oral speech, communication is limited by the conditions of space and time. Usually, the interlocutors see each other well or are at such a distance that they can hear the spoken words, which leaves an imprint on the nature of speech. When conditions change, for example, when talking on the phone, the characteristics of speech usually change (it becomes more concise, less detailed, etc.). The nature of verbal communication changes especially significantly during television and radio broadcasting, when the listener does not have the opportunity to make a cue and get an answer to it. Oral speech can be dialogic and monologue. Dialogic speech is supported by mutual replicas of the interlocutors, also called colloquial. Usually it is not fully developed, since much either follows from what has been said before, or is known in advance by the speakers, or is obvious from the existing situation. Maintaining conversational speech, as a rule, requires a natural response to the interlocutor's prompting or exists as a reaction to what is happening around. Monologue speech continues for a long time, is not interrupted by the remarks of others and requires preliminary preparation. Usually this is a detailed, prepared speech (for example, a lecture, report, speech, etc.). In preparation, such a speech is often repeatedly spoken out (especially its separate places), the plan is rebuilt, the necessary words and sentences are selected, and, often, the plan of oral speech is recorded in writing. Monologue speech has great compositional complexity, requires completeness of thought, strict logic and consistency. Monologue speech is more difficult than dialogic speech. The power of oral speech lies, first of all, in its emotional intensity, penetration, in the ability to convey the subtlest shades of thought and feeling, which, as a rule, is beyond the power of the printed word. Live speech intonations are an additional “paralinguistic code” in the communication system that the speaker has at his disposal to influence the audience. Live communication is characterized by great efficiency and simplicity in its implementation. It does not require special technical devices (with the exception of a horn or microphone in a large auditorium) or other sophisticated equipment. It is absolutely clear that knowledge of the listed features of the living word, skillful consideration of them in any conversation with people will help any speaker achieve the desired result. When considering the characteristics of the types of speech activity, it becomes necessary to more clearly define our understanding of the very phenomenon of “speech activity”. This need is caused by a somewhat contradictory situation, in which, on the one hand, the theory of speech activity is being actively and successfully developed, and on the other hand, the statement that “strictly speaking, speech activity, as such, does not exist. There is only a system of speech actions that are part of any activity—wholly theoretical, intellectual or partially practical.” According to the point of view developed in this work, speech activity is a process of active, purposeful, language-mediated and situation-conditioned communication, interaction of people with each other (with each other). The speech activity of people can be included in another, broader activity, for example, social production (labor), cognitive. However, it can also be an independent activity. This is confirmed by the fact that each type of speech activity has “its own professional embodiment”. For example, the speech activity of speaking determines the professional activity of the lecturer, writing—the professional activity of the writer, and translation—the activity of the translator. Obviously, in these cases, speech activity implements both the actual communicative and professional activities of people.
acts as an independent, professionally “fixed” human activity. Consequently, the teaching of
speech activity in a foreign language should be carried out from the position of formation
and independent activity, determined by the fullness of its characteristics.

Speech activity is realized in such forms as listening, speaking, reading, writing. (fig.2).

These types of speech activity are considered as the main forms of interaction between people
in the process of verbal communication. The definition of translation as a type of speech
activity is not self-evident. And below will be given a special argument in favor of this
definition. And already quite unusual is the statement as a type of speech activity of
thinking.

Fig. 2. Speech activity

However, thinking (thinking) is legitimate to determine the interaction of a person with
himself. Thinking often precedes the main forms of human interaction with other people,
playing the role of a “draft”, preparation, self-examination, and the correctness of the
subsequent performance of such types of speech activity as speaking and writing.

The importance of this type of speech activity is obvious, and it is regrettable that, as a rule,
thinking is not taught either in the native language, let alone in a foreign language. Consider
what unites and what distinguishes the types of speech activity in these parameters.

According to the nature of speech communication, speech activity is differentiated into types
that implement oral communication and types that implement written communication.

The types of speech activity that carry out direct oral communication include speaking and
listening. To these types of speech activity, a hereditary predisposition, or genetic readiness,
is formed. It is these types of speech activity that are formed in a person in ontogenesis as
ways of realizing his communication with other people. Here it should be noted once again
that the ontogenetic way of forming speaking in the native language does not imply a
repetition of this way when teaching the Russian language. Reading and writing are more
complex types of speech activity. They require specific targeted training. The difficulty of
mastering reading and writing is explained by the fact that they reflect not only the most
complex-external written-way of forming and formulating thoughts, but also by the fact
that they involve the assimilation of a new way of fixing the results of reflecting reality, i.e.
its graphic representation. These types of speech activity implement written communication
mediated by time and distance. Obviously, teaching these types of speech activity in Russian
is an independent, rather complex learning task. According to the role performed in the
process of communication, the types of speech activity are differentiated into initial and
reactive. Speaking and writing are the initial processes of communication that stimulate
listening and reading. Listening and reading act as response reactive processes and at the
same time they are a condition of speaking and writing. At the same time, as L. V. Shcherba
noted, these processes are internally no less active than, for example, the process of speaking
[7].
According to the direction of the speech action carried out by a person to receive or issue a speech message, the types of speech activity are defined as receptive and productive. Through receptive types of speech activity (listening, reading), a person receives and subsequently processes a speech message. Through productive types of speech activity (speaking, writing), a person exercises the forms of this muscular, kinesthetic control from the organs of articulation and from the hand. Speaking about the structural organization of speech activity, we first of all note that any human activity and his speech activity are determined by the three-phase, or three-level nature, of its structure. This structure includes incentive-motivational, orienting-research (analytical-synthetic) and executive phases. (fig.3)

The first phase is realized by a complex interaction of needs, motives and the purpose of the action as its future result. At the same time, the main source and prerequisite for activity (and the general activity of the individual) is need. As A.N. Leontiev, “a prerequisite for any activity is one or another need. The need itself, however, cannot determine the specific direction of activity. “The need receives its definiteness only in the object of activity: it must, as it were, find itself in it. Since the need finds its definiteness in the object (“is objectified” in it), this object becomes the motive of activity, that which induces it. [8].

The structure of speech activity

The source of speech activity in all its types is a communicative-cognitive need. This need, finding itself in the subject of speech activity—thoughts, becomes the internal motive of this activity. The motive determines the dynamics and nature of all types of speech activity, but, as L.S. Vygotsky, revealing the nature of the speech process, “thought is not the last instance in this whole process. Thought itself is born not from another thought, but from the motivating sphere of our consciousness, which encompasses our desires and needs, our interests and motives, our affects and emotions. Behind thought is an affective and volitional tendency. Only it can give an answer to the last “why” in the analysis of thinking. If we compared thought above with an overhanging cloud pouring rain of words, then we would have to liken the motivation of thought, if we continue this figurative comparison, like a wind that sets the clouds in motion. A real and complete understanding of someone else’s thought becomes possible only when we reveal its effective, affective-volitional background. [9].

Motivation-driven phase (level) of activity, its motive enters into the internal structure of activity, defining and directing it. The second phase of activity is its orienting-research (analytical-synthetic) part, aimed at “research of the conditions of activity, selection of the subject of activity, disclosure of its properties, attraction of tools of activity, etc.” [10]. The analytical-synthetic phase of activity involves the choice and organization of means and methods for carrying out activities. And in particular, at this phase of speech activity, the selection of means and methods for the
formation and formulation of one's own or someone else's (given from the outside) thoughts in the process of speech communication is realized. This is the phase of planning, programming and internal language organization of speech activity. The third phase of any activity is the executive, realizing. When considering this phase in speech activity, it is important to note that it can be externally expressed and externally unexpressed. So, for example, the executive phase of listening is not outwardly expressed, while the executive, motor part of the activity of speaking is obvious, it is outwardly clearly expressed in the articulatory movements of the speaker. Analyzing the features of speech activity, A. A. Leontiev emphasizes that “each single act of activity begins with a motive and a plan and ends with a result, the achievement of the goal set at the beginning; in the middle lies a dynamic system of specific actions and operations aimed at this achievement.”

5 Conclusion

Along with the structural organization, any activity, including speech, is also characterized by subject (psychological) content. The subject content of the activity includes such elements as the subject, means, methods, product, result, etc.

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