

Numicon also allows you to perform arithmetic operations with a transition in ten.

When children manipulate parts, look for them in macaroni, touch them in a “magic pouch”, play with them, close their eyes, compare, select appropriate figures, they gradually form not only visual and tactile representation of these forms, but also images of these Forms and corresponding figures. That is, children begin to imagine Numicon Forms and Numbers and then act on them without having real details in front of their eyes [2].

With the help of Numicon details, you can clearly demonstrate the basic properties of natural numbers: each successive number is one more than the previous one; difference between even and odd numbers.

In addition, we can learn:

- The composition of the number.
- Adding.
- Subtraction.
- Addition with a jump of ten.
- Multiplication.
- Division.

Numicon structured imagery can help children to connect their different mathematical experiences both within maths itself and between everyday mathematical experiences and classroom learning.

Numicon Pedagogy offers to child:

- Communicating mathematically with self and others;
- Generalising and doing mathematics with self and others;
- Our mathematical communicating is where we make our ‘numbers’...simply and with a structure of;
- Calculating involves telling new stories about numbers;
- New stories come with the help of illustrations;
- Action, Imagery, Conversation;
- Inclusive [4].

Conclusion. The methodology of Numicon is a kind of bridge that allows children to relate abstract mathematical concepts with a real tangible object from the familiar world. During training, children visualize the pattern, hear its name and pronounce it. All templates have a different shape and color, which involves the sensory capabilities of the baby in the educational process. Digital templates are supplemented with special pins, working with which the child develops fine motor skills that have a positive effect on his speech and intellectual development.

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Мох Юлія Андріївна

Кандидат педагогічних наук

Національний технічний університет «Харківський політехнічний інститут»

Радченко Олена Іванівна

Харківський національний університет імені В. Н. Каразіна

FOREIGN LANGUAGE IN TECHNICAL UNIVERSITY: COMPETENCE-BASED APPROACH

The article presents the analysis of the concept of competence-based approach in the education system, the competence-based approach importance in foreign language teaching within technical university is discussed; the graduates' key competencies are enumerated; the main competence-based approach characteristics of future engineers' language proficiency are emphasized.

Key words: competency, competence-based approach, engineering education, foreign language teaching, professionally-oriented communicative competency.

Actuality. Today the idea of competence-based approach that dated back to the second part of the last century continues to play an important role in the modern system of education. It depends on many objective facts and processes, such as labor market conditions, knowledge accumulation about our world and its continuous updating and so on. The purposes and content of higher education in our country are determined by the main competence-based approach characteristics too. Foreign language training for special purposes is no exception. The essential aim of the most training programmes of “Foreign language for special purposes” is the development of students’ foreign professionally -oriented communication competency which allowed them to integrate into the international professional environment and use a foreign language as a means of cross-cultural communication.

The analysis of recent researches and publications. The overwhelming majority of lecturers believe that nowadays the most effective foreign language training in a technical higher school is achievable only when the fundamental principles of competence-based approach are realized. Nevertheless, this concept is not unanimously supported by all scholars. Their works are devoted to the definition of the competence-based approach position among other conceptions of foreign language learning. However, they have to hand it to communicative and cross-cultural approaches. In general, it is emphasized the necessity of intersubject communications between a foreign language and special subjects, professional and communicative competency formation in close relation to other social and communicative competences. Moreover, it is highlighted several significant professional skills, such as: making abstracts and reports, retelling texts’ content in brief, giving presentation and, of course, last but not least the skill of searching for necessary information in authentic texts.

As to the specific education technologies and methodical techniques, which help to implement the competence-based approach, the major part of scientists share the view that education should be employed in several steps: from the basic course to the language for special purposes. Also the modulating education system is considered to be more effective than others. Due to this approach the educational process is divided into several stages, it helps to specify the aims and problems of each stage, evaluate students’ performance and raise interdisciplinary relationships. Furthermore, it is mentioned that the competence-based approach is realized at the lessons by means of different role plays and business simulation, problem-based learning, professionally-oriented situations, projects and brainstorming activities.

The key competencies which students have to acquire during the process of education were defined at the Council of Europe’s symposium in Bern in 1996. It is accentuated that a final qualification certificate doesn’t guarantee getting a job. Many young people, who graduate from institutes and universities, are not aware of the key competencies they will need for their future successful work: communicative competency, teamwork ability, creativity, curiosity and tolerance [1].

The list of basic competencies, which young Europeans must possess, was adopted by the Council of Europe and the European Parliament in December in 2006. They must be able to speak their native language and foreign languages, possess the math competency, several key competencies in science and engineering, social and civil competencies. They must have an appropriate level of IT literacy and be initiative. They have to be able to study throughout their lives and live in the multicultural world. According to these competencies, graduates can continue their studying or begin working [2].

The training of future engineers is a very difficult and questionable process. The job profile diagram of an engineer of the international level includes both special technical skills and knowledge and some human aspects, such as: philosophy, psychology, ethics, sociology, history of civilization and rhetoric. The second language skills are one of the aspects of the job profile diagram of an engineer.

The requirements to modern engineers are reflected in the criteria of the engineers’ training international certificate and accreditation organizations, professional consortiums and associations [3].

The level of engineers’ communicative competence as “Fluency in European languages sufficient to facilitate communication when working throughout Europe...” is defined into the European Federation of National Engineering Associations’ criteria [4].

The education experts of the Council of Europe define the concept of competencies in “Common European Framework of Reference: Learning, Teaching, and Assessment” as the amount of knowledge, skills and personal properties which allow a person to do something. General competencies are not only a language; they provide any activity including communicative. Language communicative competencies allow doing things and actions using language means.

According to scientific and methodological literature and the international organizations’ documents, it is becoming apparent that the competence-based approach directed at imaginative thinking of all education process participants; at knowledge and skills development of graduates; at their leadership skills development. This approach changes our traditional views about engineering education. It is not a simple way of knowledge transfer to a future engineer. The quality and effectiveness of engineering education is determined by means of the complex of formed competencies.

The competence-based approach in the process of education is a method of learning that helps students to solve some professional problems. It also helps to develop students' skills, such as searching, selecting and analyzing useful information, team working, etc [4].

Learning a foreign language within a technical university should be focused on communicative competence development including speech competence.

The development of communicative competence at foreign language classes is feasible if a lecturer creates typical situations of communication, students encounter daily. These situations include different spheres of everyday life and relate to various issues. Thus, the need to communicate takes place under conditions of creating a particular communicative situation. I consider a communicative situation as an activity which happens in the specific time and place and involves people in a dialogue. It is a part of learning and acquiring the language that the learner wants to know. Also it is a dynamic system of peculiar factors of both objective and subjective nature, which involve and predetermine human's behavior within a single act of communication. The communicative situation consists of the following key factors:

- circumstances of reality under which the communication occurs;
- relationships between the communicants;
- speech intentions;
- implementation of the communicative act that creates new incentives for communicating.

It is necessary to highlight that all communicative situations the lecturer uses in foreign languages classes should be focused on preparing students to real-life communication. Therefore, to form the professional communicative competence of future engineers in the framework of higher technical education, it is important to develop all types of speech activity. Taking into consideration several unfavorable factors, this task is rather difficult to fulfil. The main constraint is the restricted number of hours allocated to teaching foreign languages at higher technical school and the absence of the continuous educative process. Although it is supposed that students acquire B1 level at school, in fact lecturers are faced with an extremely poor and limited knowledge of foreign languages. Besides the one listed above, the problem of teaching students with different levels of language training in one group is rather crucial. In light of this, the activity of reading professionally-oriented texts is considered to be the main type of speech activity at the initial level of studying. It goes without saying that professionally-oriented foreign language reading plays an important role in practical work of future specialists. With the growing use and influence of the Internet, reading in a foreign language has become a priority for specialists. It is a tool for satisfying both communicative and cognitive needs as well as using the means of mass communication, such as magazines, patents, monographs, etc. But the lecturers are often faced with the problem that first and second-year students are not familiar with the terms and issues which are described in the texts that complicates the reading activity.

Thus, teaching a foreign language by means of reading texts, no matter how informative they are, is not a suitable option. First of all, language acquisition implies active production. Consequently, the bottom line is to give a helping hand to students to overcome communication barriers, to get over the fear of speaking a foreign language. Teaching students to communicate in a foreign language is not dead easy. The necessity to speak a foreign language arises only when the student is proposed a real-life situation or they could really experience the same scenario before. So, the students are to be given an opportunity to practise a foreign language in real-life situations but in the classroom and then apply this new knowledge in a real case. This, in turn, allows and forces students to learn to use the vocabulary and grammatical forms to express their opinions. One of the requirements of successful and effective foreign language learning is creating the special environment by teaching classes mainly in the language under study. It is essential to explain new rules and meanings of the words using vocabulary and grammar constructions the students are already familiar with, as well as gestures and facial expressions, pictures, visual methods, etc. It should be remembered that the process of gaining foreign language proficiency largely depends on students' motivation, which is the cause of actions directed at achieving goals. The key to successful learning is to stimulate cognitive interest, which in turn will increase the motivation and engage students in foreign language learning. The cognitive interest affects positively not only the process and the results of activities, but also the ongoing mental processes – thinking, imagination, memory and attention. The cognitive interest is one of the most important reasons for learning foreign language, the basis for a positive attitude towards it. Almost all students desire to improve a foreign language, but the level of their motivation and activity decreases as well as progress in studies because of the difficulties they encounter in the process of learning. It should be mentioned that motivation is the subjective quality of a student and it is predetermined by their personal motives, wishes and needs. Thus, a lecturer can influence it only obliquely, by creating the conditions under which cognitive interest of students in foreign language learning can be developed. But one should not downgrade the role of a lecturer who is a crucial part of the process of developing cognitive interest and arousing positive emotions in the students, promoting the process of learning foreign language, and keeping students from dropping out. An experienced and wise lecturer

can become a motivator of the successful foreign language learning. It is important to think over incentives for encouraging active students' participation in speech acts by modeling certain situations. Introducing such approaches as role plays, discussions, educational videos, listening to podcasts in class can trigger students' interest off and inspire them to communicate effectively at the foreign language classes.

Therefore, the competence-based approach in learning a foreign language allows turning a modern student from a passive element of the education system to an active participant of this system. A student is learning to form his own opinion by means of traditional sources of information and new technologies during this process. However, a lecturer takes on the role an adviser, assistant, opponent and consultant. It allows not only receiving some amount of knowledge but the bottom line is that it teaches a student to think and study on his own [4].

Conclusion. The main purposes of foreign language teaching in nonlinguistic universities are to acquire and develop the foreign speech competency that is one of the main parts of foreign communicative competency, as well as to form and practise the skill of working and processing information.

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Чередніченко Артем Вікторович

Харківський національний економічний університет імені Семена Кузнеця

Бондар Людмила Вікторівна

Харківський національний економічний університет імені Семена Кузнеця

**РЕЗУЛЬТАТИ ПЕДАГОГІЧНОГО ТЕСТУВАННЯ РІВНЯ РОЗВИТКУ ГНУЧКОСТІ
У СТУДЕНТІВ ХНЕУ ІМ. С. КУЗНЕЦЯ**

Визначено та проаналізовано сучасні підходи, щодо розвитку гнучкості у студентів. Зафіксовано, що існує неоднозначність розуміння та трактування витривалості. Встановлено, що 29,6% студентів мають достатній рівень, а 54,2% середній, високий – 5,25%, низький 10,9% рівень розвитку гнучкості. Виявлено достовірні відмінності в рівнях розвитку гнучкості за гендерною ознакою на середньому рівні.

Ключові слова: гнучкість, педагогічне тестування, студенти, фізична якість.

Актуальність. Аналіз сучасних педагогічних досліджень (табл. 1) свідчить про те, що проблема розвитку гнучкості є дуже важливою на сьогоднішній день. Проаналізувавши дані досліджень за цією проблемою, ми дійшли висновку, що вона залишається недостатньо вивченою та потребує подальших досліджень. До того ж ми не знайшли результатів дослідження рівня витривалості згідно проведення Олімпійського тижня.

Таблиця 1. Аналіз дослідження гнучкості у різних авторів.

Автор(и)	Результати дослідження		Компоненти навчання				
	К. р*	О.Т**	Форми	Методи	Засоби	Методика	Пед. умови
Павлюгіна Л.Ю., Мараховська О.В., Ляликівна Н.Н. [1]	+	-	-	-	-	-	-
Куванов В.А. [2]	+	-	-	-	+	+	+
Соломинська Н.Н., Кокорін С.А., Гармаєв В.Б. [3]	+	-	-	-	-	+	+
Довбиш В.І., Сидоренко Г. М., Нефедова А.Л. [4]	+	-	-	-	-	-	-
Смазнов К.С. [5]	-	-	-	-	-	-	-
Буриков А.В. [6]	+	-	-	-	-	-	-
Мельникова О.В., Корнєєва С.В., Комкова І.А. [7]	+	-	-	-	-	-	-
Льницька А.С., Козина Ж.Л., Коробейник В.А., Льницький С.В. та ін.[8]	+	-	-	-	-	-	-
Олейникова К. О. [9]	+	-	-	-	-	-	-
Михно Л.С., Лоза Т.О. [10]	+	-	-	-	-	-	-
Дерябіна А.Л., Жигаленко Є.А. [11]	+	-	-	-	-	+	+
Терзи М.С. [12]	+	-	-	-	-	-	-
Гармаєв В.Б., Калмиків Є.В. [13]	+	-	-	-	-	-	-

Примітка: *К. р – кількісні результати; ** О.Т – олімпійський тиждень.