ORGANIZATIONAL ASPECTS OF CREATING AN ELECTRONIC SYSTEM FOR THE FORMATION OF FOREIGN LANGUAGE SKILLS

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Introduction

English dominates the world as the language of science, international communication, and the language of IT technologies. The need for widespread teaching of the English language continues unabated, and increases over time. The development of educational approaches for specific areas of knowledge is always associated with solving the problem of finding the most effective teaching methods. Those methods that work even within the framework of one area of knowledge turn out to be ineffective when moving from the transfer of information to the process formation of skills. Education systems, being one of the most conservative systems of society, do not keep pace with scientific and technological progress and social changes, do not have the capabilities and resources to solve the problems of quickly preparing a large number of adults for linguistic, social and industrial activities. In addition, the coronavirus epidemic that has befallen the whole world has exacerbated all social problems many times over. We live in a time when the main government structures are simply not doing well with the responsibilities entrusted to them:

Health care systems are failing and medical staff is forced to show real heroism in order to save people;

Education systems are unable to train people in professional and language skills in a fairly short time, as a result of which the migration crisis turns into a disaster, and this is becoming especially relevant now, during a pandemic.

The transition to distance learning is a compulsory measure, but practiced now distance education cannot show decent results in any way, primarily due to the tendency to use the same approaches, both for classroom and distance learning. The main task today is the transition from distance to full-fledged electronic education. However, we all the more cannot use those traditional educational technologies that will not bring the desired effect, but will only undermine faith in new approaches. Therefore, it is necessary to develop such teaching methods that will most fully satisfy

To develop such teaching methods that will most fully satisfy the educational needs that have arisen and will form the basis of electronic educational systems.

Finally, all efforts to design such a system and create a working prototype will be ineffective if scientists interested in implementing effective approaches to the formation of sustainable skills in

mastering a foreign language cannot solve the problem of joining efforts in the development of the scientific, economic and financial potentials inherent in the programs of the joint Europe.

The aim of the article – invitation to cooperation of interested persons and organizations in the framework of the next challenges of the new program of the European Union (EU) "Horizon Europe".

Objectives of the article:

1. Analysis of trends in the level of foreign language proficiency in some regions of Europe.

2. Improving the concept of creating an electronic system for the formation of foreign language skills.

3. Preliminary assessment of the possibilities for joint development of an electronic system for the formation of foreign language skills.

The relevance of the topic is determined by the need to create a new detailed technology for the formation of speech skills in the electronic learning management system (LMS) of a foreign language for adult students. A special role is assigned to solving the problems of the development of management science and innovation in Europe, the implementation of a new policy in the field of education and its digitalization, and the use of science-intensive technologies in business.

1. Trends in changes in the levels of foreign language proficiency in some regions of Europe

Most countries have their own or adapted teaching methods and language proficiency assessment mechanisms approved by ministries of education, as well as countless courses based on the most advanced methodology. However, only large international corporations can objectively assess the situation, one of the most authoritative is Education First (EF).

Its regular current Education First English Proficiency Index (EF EPI) is published annually based on their own English proficiency tests conducted on their website for users around the world, and in collaboration with companies to assess their employees [1]. For convenience and clarity of presentation, the information is summarized for some historically formed regions of Europe (table1).

Data for the EF EPI began to collect in 2007-2009, based on which the first report was released in 2011. EF publishes new reports every year and the tenth edition was released in 2020, displaying data within an updated rating system. Figure 1 shows the average ranking of some European countries by region.

The tests are based on adaptive testing, primarily of basic skills: reading and listening comprehension. Since they are held on the Internet and people who are more interested in mastering the language pass them, the results are somewhat overestimated, and countries with a weak Internet penetration drop out of the rating. Despite all this, the rating data allow us to determine the trends in

the further development of the situation in the world, as well as to prolong and extrapolate them. In addition, EF EPI has a strong (> 70) correlation with TOEFL iBT and IELTS Academic Test.

Table 1. EF EPI Rating. Europe regions

| Region	Country	2009		2012		2014		2017		2020	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score
North Europe	Finland	4	66.26	1	68.69	1	70.94	2	70.40	**3**	625
	Sweden	1	69.09	2	66.60	4	67.83	4	67.77	**4**	624
	Norway	5	61.25	8	62.63	5	65.32	5	65.83	**5**	631
Baltic	Lithuania	-	-	-	-	21	55.08	20	57.08	**21**	570
	Estonia	-	-	-	-	-	-	-	-	22	566
	Latvia	-	-	14	57.66	18	57.16	-	-	24	555
South Europe	France	12	53.16	23	50.53	24	51.84	22	54.39	23	559
	Italy	16	49.05	22	50.97	22	54.02	23	54.19	25	547
	Spain	17	49.01	19	53.51	19	56.80	21	56.06	26	537
Slavic republics	Belarus	-	-	-	-	-	-	-	-	**27**	513
	Russia	18	45.79	21	51.08	25	51.59	24	52.19	28	512
	Ukraine	-	-	20	53.09	23	52.61	25	50.91	30	506
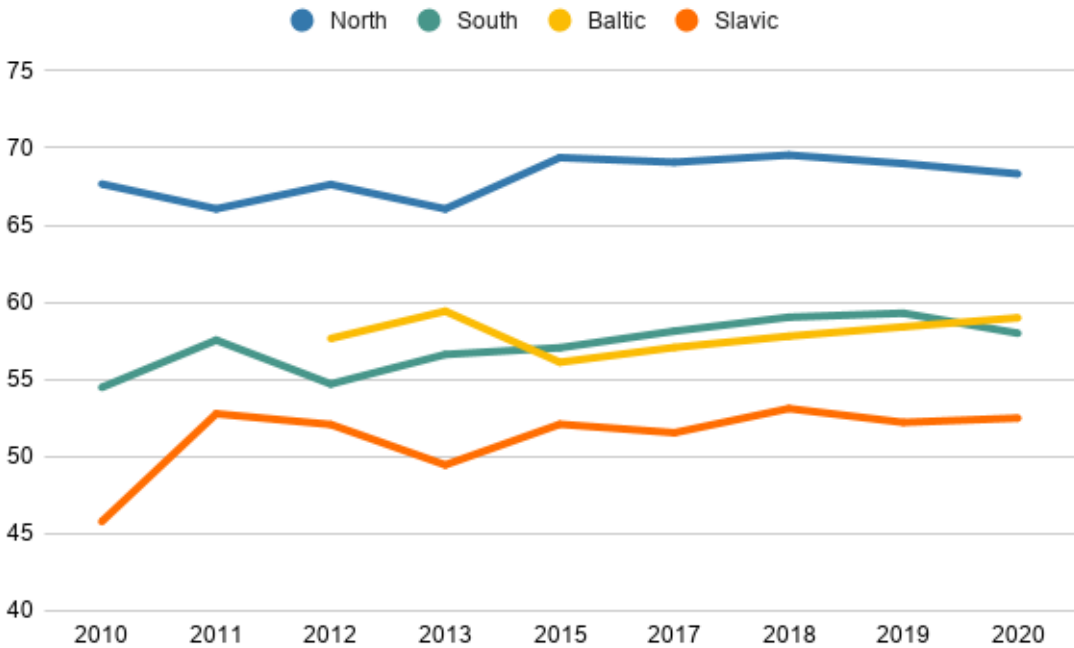
Figure 1. EF EPI rating 2010-2020. Europe regions

According to EF, only Scandinavia and the Netherlands can say that the problem of mastering English as a second language has been solved. This success reflects decades of efforts by national ministries of education to promote multilingualism. School systems in these countries employ several key strategies, including an early focus on communication skills, daily learning of

English both in and outside the classroom, and specialized language teaching in later years of study, whether in vocational school or university.

The EU's robust data collection and information exchange network has helped disseminate best practices among member countries.

In the Slavic countries of the former Soviet Union, this level barely reaches ten percent. English proficiency in Russia is not improving in any way. A survey conducted back in 2014 showed that 70% of adult Russians admitted that they did not know a single foreign language, and only 11% said that they could speak a little English. In all Russian-speaking countries, the level of English proficiency remains consistently low.

English language teaching in schools focuses on grammar and translation rather than practical communication skills, with most of the content being delivered in the native language. University graduates need a year or more of intensive preparatory English courses because their level of English is too low to move to a European country for higher income.

Unfortunately, the situation is similar in those countries that have the peak of emigration waves. Of the four largest economies in the Eurozone, only Germany speaks good English. France, Spain and Italy lag behind almost all other member states. The English proficiency gap is of particular concern, as both Italy and Spain suffer from high unemployment rates, especially among young people.

And are subject to a constant influx of new migrants. Of these three countries, only France has made steady progress over the past three years. According to a recent government report, by the age of 15, only a quarter of French children are able to string together several sentences in "more or less correct" English. Last year, another round of education reforms was announced.

A special role is assigned to the Baltic countries, which have chosen instead of Russian English as the language of interethnic communication within the framework of a united Europe, which has led to quite obvious consequences. On the one hand, the population has decreased as the most motivated young people left for English-speaking countries in search of a decent income, on the other hand, the best methods of the Scandinavian countries were chosen for education in schools. This led to the fact that in a short period of time from the moment of leaving the USSR, the liberated republics in the EF rating turned out to be higher than those countries of Europe, where the predominant influence is exerted by long-outdated methods of studying foreign languages, such as the study of medieval Latin, and rigidly fixed by legislative regulations and curricula of educational systems.

Fast and easy communication strengthens ties between Europeans, as does student exchange, travel and transnational work. Even when growing nationalism or negative political change in partner countries challenges EU projects, the opposing forces of European cohesion seem to be

resilient. Corporate and publicly funded adult education programs are spread throughout Europe, but these foreign language courses are often too short and too low-intensity to be effective. European countries could further improve their English proficiency by introducing externally certified adult education and normalized quality assurance certification systems, but this is too slow.

2. A systematic approach to creating a new type of learning management systems

The ability to communicate in a foreign language is most quickly achieved through the progressive mastery of labor skills with the simultaneous development of the entire language system, which very accurately and in a timely manner implements the speech skills of the new language necessary for the student in his daily activities. This is the only way to quickly form thinking in a foreign language, in which the presentation of thoughts occurs in accordance with the norms of the new language system, acquired for its expression in everyday speech. In addition, the use of modern information and communication technologies (ICT) in conjunction with the use of effective models for obtaining labor and language skills can significantly speed up the learning process and increase its success. Modern research is interdisciplinary in nature and is at the intersection of systems analysis, ICT, cognitive psychology, linguistics and activity theory.

The authors propose technology development based on new learning ideas. The use of modern ICT, together with the use of effective models for obtaining language and professional skills, can significantly speed up training and increase its success. Providing such integration is possible through the joint use of system analysis tools and the Structural-Visual Method (SVM) used in the project [2, 3]. The purpose of the new technology is to display the implementation of SVM in a high-tech educational environment to accelerate the acquisition of language by adults. The peculiarity of the proposed approach lies in the logical relationship of the entire system, the economy in terms of the time of mastering the material and the dynamics of the use of language structures. Obtaining results should be achieved due to the intensity of the student's efforts maintained at least at a critical level for a sufficiently long period of time (months), which plays a decisive role in foreign language classes.

The conceptual solution is based on the use of systems analysis mechanisms and the unification of scientific concepts of representatives of the Soviet school and scientists of Western countries against the background of the technological leap in the second decade of the 21st century. The system allows you to manage the process of forming professional and language skills of adults and combines:

Methodological principles substantiated in the works of Bandura and Halperin [4, 5];

Structural-Visual Method, which accelerates the acquisition of linguistic competencies;

Using the achievements of the IT sphere as a tool to ensure the implementation of learning goals with continuous monitoring of the current state and obtaining a guaranteed learning result in a finite number of steps.

The prototype being created is a distributed Management System for the Acquiring of professional and language skills by adults (e-AMS) (Figure 2). The main components of the system are: Interactive Speech Trainers with Visual Models (IST with VM), Content Management System (CMS), Speech Recognition and Modeling System (SRS), Continuous Evaluation System (CES) of language proficiency and Virtual Assistant (VA).

E-AMS has the following properties:

The unity of the main goal of achieving the learning outcome for all its elements;

High stability of the entire system and the independent value of each element;

Correlation dependencies between the elements of the system that provide positive feedback in the process of forming professional and language skills;

Continuous evaluation of the learner's level of competence, which ensures the formation of a logarithmic dependence of the learning curve and compensates for the prerequisites for the degradation of the learning curve towards the loss of expected competence;

The ability to evaluate and compare the results of both similar educational systems and technologies, and their individual components;

Cross-platform with respect to operating systems and programming languages and invariance with respect to the student's native language and the foreign language being studied.
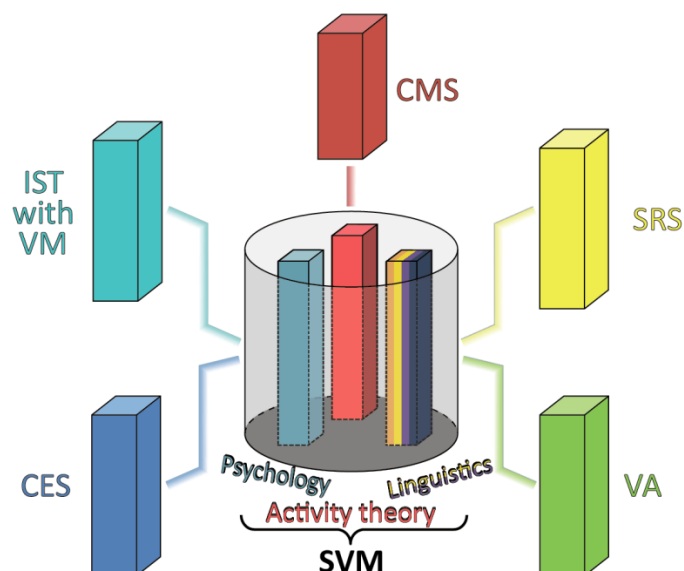

Figure 2. Generalized structure of e-AMS

Interactive Speech Trainers are voice chatbots of a new generation, which, using artificial intelligence mechanisms, are configured for each student in the system, and Visual Models are in

the form of augmented reality elements. This combination will ensure complete immersion in the process of skills formation and guarantees the maximum concentration of the trainee's attention.

The Content Management System is designed to provide the formation of educational material based on the most frequent words and semantic structures from the Corpus of the English language, subsequently modified by the subject area of the acquired professional skill. The current frequency is automatically determined using the Google Ngram Viewer.

During the operation of the Continuous Assessment System, a detailed statistical analysis of the results is carried out, dynamic learning curves of each adult learner are displayed, tables of coefficients are justified and indicators of the speed of formation of speech skills are refined, the levels of speaking are assessed from initial too spontaneous in accordance with the scale of the Common European Framework of Reference for Languages (CEFR) [6]. Not the curriculum, but the state of the level of proficiency in professional skills and, at the same time, the level of language proficiency at the current time will be decisive for further progress along the learning curve.

Special methods of using the Virtual Assistant will allow organizing the process of training language skills in such a way that the activation of the translation mechanism could not occur physiologically. The system will feed material at such a speed that the exercise can only be completed without water way.

Another option is also possible, which is used now, when the target speed of performing simple exercises is set such that it is almost impossible to perform them in a translated way in the allotted time.

In addition, the Virtual Assistant should perform the function of a media aggregator that provides the ability to connect to various services and find professional content of interest (virtual classes, photos, audio, and video) according to various criteria with reference to the level of the current language proficiency of an adult student.

E-AMS operates continuously on three levels:

A programmer moderator who is one of the development team;

A teacher who updates the content, processes general learning statistics at different levels and, in difficult cases, resolves the issue of the teacher's work through interactive platforms "face to face" with the student;

The most important level is the level of an adult student who consciously "transfers" his own consciousness to the control circuit of the educational process.

System c provides the formation of the speech zone of the acquired language in the mind of the learner due to a sharp increase in the effectiveness of exercises by transforming grammatical information from verbal into graphic form,

This allows you to move from learning a language to improving it in the process of using it. Continuous assessment of the learner's level of competence leads to the formation of a logarithmic dependence of the learning curve and compensates for the prerequisites for its degradation towards the loss of expected competence, ensuring the emergence of a synergistic effect in the learning process.

A conceptual solution to such a system was obtained [7]; its use will lead to the emergence of a synergistic effect in the learning process and, as a consequence, accelerated creation of a new language zone in the mind of the learner. The implementation of the system will provide a solution to the problem of rapid teaching of language and professional skills for the following categories of adult learners: students and teachers in the implementation of scientific and cultural exchange, refugees and migrants, students with a hieroglyphic writing system.

The resulting conceptual solution is based on the use of systems analysis mechanisms and the unification of scientific concepts of representatives of the Soviet school and scientists of Western countries against the background of the technological leap in the second decade of the 21st century. This approach opens up a new scientific direction in the construction of learning management systems.

3. Preliminary assessment of opportunities for joint development of e-AMS

E-AMS is a unique high-tech product. Its use will lead to a synergistic effect in the learning process and, as a result, to the accelerated creation of a new language zone in the minds of adult learners. The system provides a process of controlled formation of professional and speech skills, which allows you to move from learning a language to improving it in the process of using it. It is built on a modular basis so that each element of the system can be efficiently developed and used separately.

At the same time, the effect of the joint use of all elements of the system and the integration of additional developments can significantly exceed the capabilities of existing analogues and help solve very important social problems.

In the European Union, within the framework of the "Horizon 2020" program, a preliminary assessment of material and time resources was carried out to create such a system in combination with the necessary infrastructure for the implementation of the task of training professional personnel and language adaptation of refugees and migrants. Such expenses are approximately 5 million euros, which must be mastered within 2 years, provided that the necessary work is carried out in parallel between 5-6 institutions or organizations.

Under the current "Horizon Europe" program, the allocation of resources will undoubtedly be increased as the EU leadership does not seem to have a constructive understanding of how to transform the current migration crisis from a humanitarian disaster into a controlled migration

process. Consistent the emergence of even individual components of e-AMS will contribute to improving the quality of the educational process in the field of mastering foreign languages and actively expanding international relations.

The work is at an early stage and, to one degree or another; researchers from Ukraine, Lebanon, the USA, Japan, Iraq and Belarus are involved in the project. It should be emphasized that it does not contradict the existing system for assessing language competencies in Europe, but on the contrary contributes to increasing its importance. I would like to note that the documents prepared by the Council of Europe on the basis of the recommendations of Cambridge and other educational structures of the united Europe, speak in detail about the multi-level levels of language proficiency, but they do not say anything about how to achieve this in the minds of adults. It seems that these organizations have little understanding of how to do this with regard to adult learners in a fairly short time frame and on a massive scale, especially in a pandemic.

That is why the problem of refugees and migrants sometimes takes on the dimensions of a catastrophe in the developed countries of Europe and the United States of America. One of the main reasons why developed countries refuse to accept them is, first of all, a lack of understanding of how to solve the problem of educating a large number of adults and their subsequent employment. Therefore, both in Europe and the United States, instead of destroying walls like Berlin, they plan and create walls between states, spending huge sums for this, exceeding the cost of creating high-level educational systems by a factor of thousands (Figure 3). Maybe the situation will change now with the arrival of the new administration of the White House?

Figure 3. The Wall and e-AMS costs

The implementation of such a project is of particular importance for refugees and migrants. In a relatively short time, they will be able to receive not only all the necessary information about their new profession, but also acquire stable language skills of their new homeland. Moreover, the learning process will take place remotely, without the work of a teacher, directly in the classroom, face to face with students, and the classes themselves can be held anywhere where there is Internet. Received solutions and tools will actively contribute to the efforts of state administrations to manage the integration of migrants at the national and local levels. They will also facilitate communication with migrants and their access to services such as vocational and language training, employment, education and social security in host communities.

Expansion of the influence of SVM in educational institutions of different countries, and, especially, the widespread introduction of components in the market of electronic educational services will allow changing the tendencies existing for decades and eliminating the existing gaps in the ratings of even developed world powers. So, for example, such a technologically advanced country as Japan, according to the EF EPI Rating is only in 55th place in the world, which is significantly lower not only, say, Lithuania (24), Italy (30) or Spain (34), but even Belarus (40). Despite the existence of the IT-country project (Figure 4), the introduction of a full-fledged e-AMS system in Belarus is not only planned in mind.

Complete disinterest of state educational structures to change the situation that has developed for decades, but this state will inevitably worsen due to negative changes in the political situation in the country. As an alternative, it is proposed to look for independent solutions within the framework of the start-up system or look for like-minded people abroad, which seems to be the most preferable.
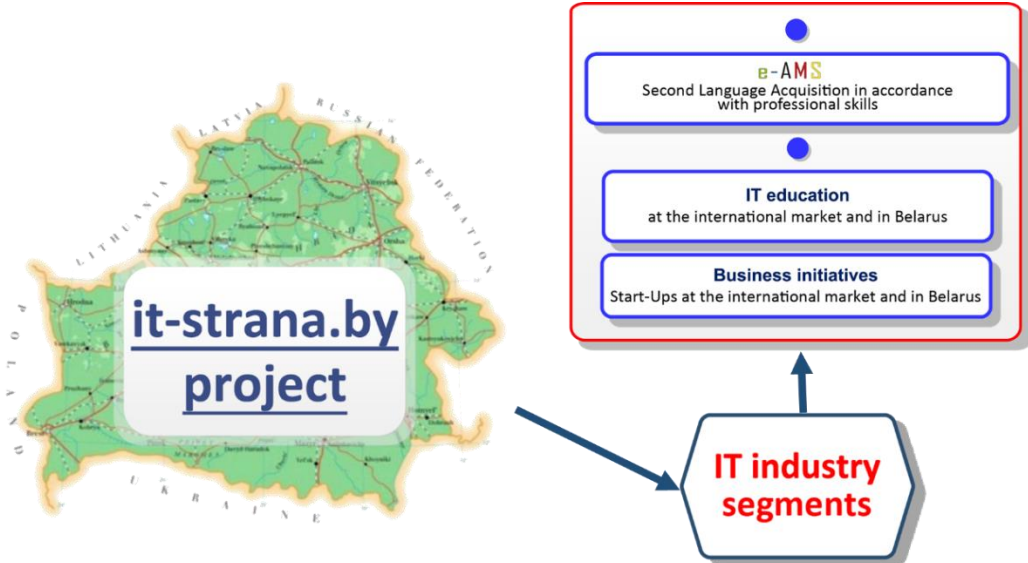

Figure 4. IT Country Project

It is impossible to stop progress, however, sometimes it is the educational systems, due to the extreme conservatism and focus of their activities primarily on the implementation of government social orders, do not contribute to the innovative development of society. An alternative to this is e-learning systems that can quickly implement and implement the most advanced technological innovations.

The main result for today can be considered the conceptual solution of the problem of simultaneous interaction of the language system and ICT tools, ensuring the sustainable formation of foreign language thinking of adults in the process of developing professional and language skills, presented at the system level. However, the implementation of this and other similar high-tech systems will never be solved if the stakeholders do not have a clear understanding of how, within the framework of which programs, creative efforts should be combined.

A special role belongs to progressive business, which has experience in the development of those resources that are laid down both in national programs for the development of management science and innovations, and in the framework of high-level programs of a united Europe.

Conclusions

1. The Baltic States have achieved a sustainable development of English language skills in a short historical period through the use of high-quality educational methods. The search and creation of new forms of acquiring a foreign language will help to avoid the inevitable stagnation that is observed in the countries of Southern Europe.

2. E-AMS provides a transition from distance to e-learning of foreign languages and opens a new direction in the development of digitalization of education.

3. Currently, educational platforms operate in the face of modern global challenges associated with the coronavirus pandemic, political instability and the migration crisis. Their development is possible only by combining progressive teaching methods, introducing new mechanisms for the impact of modern ICT on adult students, effectively using the economic potential of European development programs and combining the creative efforts of specialists from different countries and various fields of science and knowledge.

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Summary

An analysis of the reports published by Education First indicates negative trends that have emerged in recent years in the education systems of developed countries. Attempts to use modern ICTs to accelerate the process of adult learning turn out to be untenable due to the lack of proper coordinated work of specialists in various fields. The article shows how it is possible to combine the most progressive approaches to the formation of production skills in adults and at the same time accelerate the process of learning a foreign language using the technological opportunities that have opened up in recent years. Only a systematic approach allows us to speak about the successful mastering of basic linguistic skills in the training of specialists, and both of these processes occur simultaneously. Cooperation of interested organizations within the framework of the new program is of particular importance EC "Horizon Europe".