

MULTIMEDIA TECHNOLOGIES AND PROFESSIONAL DEVELOPMENT OF TEACHERS

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The key factor of structural changes in society is informatization - the process of penetration of multimedia technologies and telecommunications in all spheres of human activity. At the same time, the use of multimedia technologies as a means of production has a decisive impact on the employment structure of the population, which is increasingly involved in the generation, accumulation, storage, search, processing, distribution and use of information and knowledge. Thus, the main subjects of technological interaction in the information age are people-the owners, creators and consumers of knowledge. That is why the most important characteristic of the global knowledge society is the presence and implementation of the principle of primacy of the human factor, as the main carrier, generator and consumer of knowledge at the same time is a person [1].

The knowledge society should be inclusive, i.e. comfortable for all its inhabitants-from the newborn to the pensioner, including persons with disabilities and special needs. One of the most "hot" topics is the formation and development of the most important competencies of the knowledge society, allowing to solve such problems of the world community development as increasing the level of social responsibility and inclusiveness, ensuring competitiveness and guaranteed employment, supporting the processes of innovative development and intellectualization of the economy and social sphere. However, in order to successfully address these challenges, it is necessary to ensure high quality education at all levels and in all sectors, which can be achieved only if there is a sustainable system of professional development, continuous training, retraining and professional development of teachers.

This is fully in line with the main objective of UNESCO's activities in the field of education – to make quality education a reality for every child, young person and adult, and the most important priorities of UNESCO in the field of education is to achieve the goals of the “Education for all” Program. Therefore, it is no coincidence that the main objectives of UNESCO in the field of education are defined: providing teachers with global assistance, increasing their status, supporting their ongoing training and professional development, improving the management and administration of the educational process, forming key elements of the policy and strategy of working with teachers. The key factor in ensuring the quality of education in general remains the quality of teachers and other categories of teachers, their continuous professional training, retraining and advanced training, the level of professional development and competence [2].

The results of numerous studies in this area clearly indicate that, among other factors, the crucial role is played by high-quality training of teachers, which in the context of the ongoing efforts to reform the education system, unfortunately, is not given enough attention. Meanwhile, it is the lack of effective professional development of educators that is often considered to be the main reason for the gap between what students can potentially achieve and the reality they actually face in their classrooms around the world.

Foreign experience of professional training of teachers.

The experience of the United States.

In the Lake Washington school district in Raymond, Washington, teachers are required to learn one technology skill per year. Each district selects one technology each year, and educators are offered a variety of ways to acquire the skill and demonstrate their knowledge. Teachers who successfully complete a refresher course receive a bonus [3].

The Danish experience.

All employees should use multimedia technologies in the educational process, including integrating them into existing curricula. Each employee (including administration staff) must demonstrate basic information technology skills (computer literacy). Those who need help are offered the opportunity to undergo additional training. Informal professional development is encouraged through self-training in a specialized classroom for teachers equipped with the necessary technological tools, and scheduling so that teachers can necessarily work together [4].

Turkish experience.

The project for the empowerment and improvement of educational technology (FATİH). The project envisages that all classrooms will be equipped with technologies, and that all classes will be based on the use of modern technologies by teachers and students. In order to prepare teachers for the use of multimedia technologies in the educational process, various skills development activities have been planned, both online and in-person, to support some 600,000 teachers [5].

The Experience of New Zealand.

In New Zealand, each school develops its own teacher development strategy in line with government policy: “Development New Zealand of a prosperous and stable information society involves the development of new skills and knowledge. This will require the creation of a culture of entrepreneurship, continuous pursuit of knowledge, innovation and improvement and risk-taking decisions. All this can be achieved only through the development of the education system” [6].

Finland experience.

Technical vocational education plays a key role in Finland's economic competitiveness. The national policy for technical vocational education is based on quantitative and qualitative expectations, namely, quantitative expectations for long-term labour demand and educational needs and qualitative expectations of specific skills among workers. The government of Finland is monitoring the skills needed in the future and the overall need for certain skilled professionals, and how to meet these needs through education and training in the field of information technology, as well as to develop a national qualifications framework for Finland [7].

Russian experience.

The problem of formation, development and improvement of technology competence of teachers is relevant for modern Russian education. The requirements for the use of information and communication technologies by the subject teacher outlined in this document include the need for each teacher [8]:

- to make an informed choice of educational technologies, including information technologies, as well as to make a choice of electronic educational resources;
- to implement control and evaluation activities in the educational process using modern methods of evaluation in the context of information and communication technologies (maintenance of electronic forms of documentation, including electronic journal and diaries of students);
- to know the basics of working with text editors, spreadsheets, email and browsers, multimedia equipment.

When considered together, all these successful approaches to teacher training meet the individual needs of teachers and focus on creating conditions that stimulate the introduction of technologies, equal interaction of participants in the educational process and decision - making involving certain risks. They also include a technology component in the overall goals and direction of the school and district curriculum. The above examples also show that successful professional development of teachers using multimedia technologies can certainly do that. Our challenge, then, is to use effective professional development to bring about change, from the micro-level of schools to large-scale systemic reforms of education in general.

The new role of the teacher. An effective policy of innovation in the school system should take into account that the role of teachers is changing quite quickly and profoundly: they become leaders, managers of the educational process, teachers-facilitators, begin to design, adapt, manage and evaluate the educational environment. Policies aimed at adapting teacher competencies to the new situation should also take into account the local version of the Framework Recommendations. The active introduction of technologies environment requires teachers to study completely different approaches to the organization of the educational process. It requires a change in the role of the teacher from the lecturer to the designer, as he must design and implement, form, implement the educational environment (including both digital materials and educational activities) before the beginning of the direct reading of the course, as well as use completely new methods of teaching in the classroom [1].

Teachers will need to master the skills of finding and adapting already developed reusable materials, as they will have much more opportunities to access huge amounts of educational content through the use of new technologies. Significant amounts of the content of such educational resources are available completely free of charge in the format of OER (open educational resources). Learning how to design and develop an information and education environment based on the use of

state-of-the-art multimedia technologies requires much more time before it can be used in the classroom than just listening to a single course, and also involves receiving much more help from the school administration and the expert community. It is therefore necessary to give teachers significantly more time to develop their ideas, skills and develop their own learning projects. Since it is difficult to involve all teachers in innovation processes at the same time, it is necessary to adapt and apply a strategy of sequential actions, which assumes that initially teachers who are already innovators or ready for innovations, who are often called “early adopters” (followers, implementers), who are not afraid to fail and even willing to take risks to gain experience of innovative practice, are involved in innovation processes. However, it is important that this does not preclude efforts to involve as many teachers as possible in the process of integrating multimedia technologies into their classrooms [9].

The international program of IT training for teachers. There are several full-fledged programs of this type for teachers - both national and international models used by different countries. ECDL/ICDL representatives, (<http://www.ecdl.com/>) consider, that the computer and the Internet are part of daily life. Therefore, ECDL puts the Internet at the center of all computer skills. Different levels of the program are offered (for different categories of students: individual representatives, employers, teachers and students), such as [9]: Introduction, ECDL, ECDL for experienced teachers.

Introduction prepares for General user skills, teaches free use of the computer and the Internet.

The ECDL level teaches all basic skills: the concept of ICT; computer usage and file management; work with text; spreadsheet; use of the database; presentation; the use of Internet and communication.

And additionally: 2D design; image-editing; edit the website; the health information system of use; information security.

EPICT. European Pedagogical ICT Licence (<http://www.epict.org/>)-founded by professional teachers on the basis of pedagogical needs and perspectives, while ECDL is based on the interaction of ICT and different professions and on this basis develops special programs for teachers and students. Teachers from the same school are encouraged to team up and take the training course at the same time for 6-12 months – as part of their main job. Training should be conducted by regional or local organizers. After an introductory lesson, in which participants are presented with the course concept, methods and tasks, the basic course begins, teaching the use of the Internet, which ends with a control check. Joining the EPICT program involves setting a national level and developing a program (adapted), understanding the General direction, obtaining a certificate (1-from EPICT; 2 - from national/regional associations).

The EPICT program contains mandatory and optional topics [10].

Obligatory: ICT in learning and teaching.

- Computer: search and communication via the Internet; working with text and creating it; ICT and school innovation; planning; digital image; presentations; the creation of web pages; spreadsheet; in the online database; use of online learning resources; ICT and working methods, it as a balancing and auxiliary tool; application of computer games in training.

RSA-research at Oxford and Cambridge offers the CLAIT (Computer Literacy and Information Technology) program – “Computer literacy and information technology”, which certifies the ability of users to use the Internet in work or study in three categories. Training courses

are divided into parts, one of which is mandatory, and two additional ones are chosen by the candidate. These programs are designed to enhance skills to move to the next level. The purpose of the mandatory part-to give the initial skills of using the equipment and software of a conventional computer. Additional parts offer training in the application of five different applications. Candidates can achieve a chartered qualification if they study at least 5 parts: one mandatory and 4 additional. Certification reflects the level of topics studied.

When studying the course, teachers can also pay attention to various problems: spiritual, moral, ethical, social and cultural (copyright, confidentiality of information, responsibility for honesty and accuracy, database security). They can also focus on health, safety and environmental issues.

Each part should be devoted about 20 hours.

Mandatory part [11]:

- Topic 1: file management and document creation.

Additional:

- Part 1: creating spreadsheets and graphs.
- Part 2: database management.
- Part 3: creating an online publication.
- Part 4: creating a presentation.
- Part 5: creating a digital image.
- Part 6: creating web pages.
- Part 7: online communication.
- Part 8: Internet security.

OCR also offers a program for a variety of life skills. It contains 10 areas, of which 4 are key skills and 6 are life skills.

Key skill:

- Communication.
- Ability to quantitative thinking.
- ICT.
- Personal growth.

Life skill:

- Society.
- Creativity.
- Environment.
- The running of the household.
- Rest.
- World of work.

Several aspects need to be considered when considering how IT training programmes are implemented. IT skills are divided into levels ranging from basic to expert and/or professional. IT skills training in education is not just about learning how to use a computer, but also developing pedagogical, organizational skills, planning the educational system and identifying methods. Access to a computer and software is only a starting point for improving the quality of learning and effective use. To change the school, you need a comprehensive course, including educational programs.

All of the above companies have developed large programs that develop IT skills, but each starts differently. Especially EPICT, which is based on pedagogical and organizational elements. Without a doubt, it is comprehensive and requires a lot of effort. On the other hand, methods that focus on technology and highlight pedagogical and organizational problems may not lead to effective changes – to the modern school that will be needed in the future. As it has already been written, all presented programs include pedagogical aspects, but do not always represent organizational aspects. Whatever program is chosen or created for a particular region, it is necessary to be careful with local traditions. New and innovative methods can be applied only after consideration of all aspects and taking precautions [12].

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