New Learning Models and Modern Educational Trends for the Future of Education

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Abstract

The report aims to present the role of universities in creating and validating the new educational paradigm - from accredited qualification to certified skills. The practical implementation of this educational paradigm is presented, based on the experience of the University of Library Studies and Information Technologies (ULSIT), Sofia, Bulgaria and through the introduction of new approaches in the education of students, doctoral students and young scientists. The sound connection between fieldwork research and training in a modern university information environment is consolidated in the implementation of the so-called 'Learning by Doing' approach, which provides young people with the opportunity to practice in real environment the knowledge they have acquired during their university studies. In 2019 this approach was successfully applied in the training of ULSIT students and tested in fieldwork when an interdisciplinary study was conducted, which made use of the opportunities of information and communication technologies in the process of searching for immovable cultural values. Characteristic of this approach is the application of GIS programmes in archaeological research, which allow for rapid and accurate localization of archaeological sites. As a result of its implementation in the training of students, a more in-depth study and knowledge of the existing archeological sites was achieved and at the same time a new type of methodology for discovery, research, conservation and promotion of new discoveries was tested. From this point of view, new approaches in research are a modern way of training students and doctoral students in various fields of science and practice. The synergy between traditional education and innovative approaches proves the effectiveness of the application and use of alternative educational models, which led to the formation and establishing of the new educational paradigm.

Keywords: *training, education, approaches, learning by doing, ICTs, archeology.*

1. Introduction

The dynamics of social processes over the past two decades has increased people's need for new knowledge and has led to the necessity of acquiring qualitatively new skills and competencies. This need has directly and indirectly affected one of the most important areas of human development, namely higher education. Although universities have changed significantly over the years, they have retained their initial purpose as educational and cultural centres, where the average person can acquire important knowledge and skills for life. [7]

Universities are unique institutions that in an unusual way combine traditional techniques and methods of knowledge transfer with modern and innovative approaches to acquiring valuable skills. [10] That is why educational institutions are now facing new challenges and problems related, on the one hand, to the access and quality of the offered services, and on the other, to the motivation of young people [8] to acquire new knowledge and skills.

2. Exposition

Building a more educated and competent society is a complex and continuous process in which universities play a leading role. Therefore, they had to include in the learning process new research approaches and innovative solutions, in order to adequately respond to society's need for new knowledge. In search of a solution, universities have expanded their activities and focused their efforts on building networks of knowledge and working closely with other educational, scientific and cultural institutions in order to stimulate specific scientific events and research in various fields of science. [6] Thus, a natural diffusion of knowledge, methods and knowledge between scientists and specialists on the one hand and young scientists, doctoral students and university students on the other.

As a result of all these events, it became necessary to use alternative educational models [2] in practice, which formed a different but innovative in nature educational paradigm - ***"from accredited qualification to certified skills."*** [3] The new educational paradigm started to be successfully applied

on the basis of the principle "*Learning by Doing*", which includes interdisciplinary approaches in the research and pursuit of new knowledge and their hands-on testing. In this way, a synergy was achieved between the theoretical and practical training of young people and their motivation to participate in the processes of public importance was stimulated.

2.1. The knowledge triangle

The University of Library Studies and Information Technologies (ULSIT) is one of the most modern educational institutions in Bulgaria, which successfully combines traditional teaching methods with innovative approaches to stimulate the scientific interests of lecturers, students, young scientists and doctoral students in various fields of science. This was made possible by the fact that ULSIT took actions to build the so-called "knowledge triangle" [9] by introducing the necessary reforms in its policy and reorganizing its educational, scientific and administrative area. By applying interdisciplinary approaches in conducting field observations and research in various fields of science, young people gain knowledge, create useful connections and contacts between them and representatives of scientific, educational and cultural institutions, acquire useful communication skills, navigate through the mechanisms for work and control in state and business structures, etc.

By combining theory and practice, ULSIT has achieved a higher quality of education.

2.2. The relationship between education and research

The stable relationship between education and research favours the process of obtaining and understanding knowledge in different fields of science. Based on this, an effective methodology for staff training has been created, which supports the diffusion of knowledge and skills in the university information environment [1], [4]. Stimulating the relationship between education and research contributes to the preservation and enrichment of the information fund of human cultural memory. The experience and practice of ULSIT regarding this clearly show that the use and application of the principle "Learning by Doing" in the process of educating young people once again proves the benefits of creating and implementing the new educational paradigm - "from accredited qualification to certified skills".

2.3. Interdisciplinary approaches in education

In contemporary educational context, a key moment is the introduction of new technologies in cultural heritage training. This complex and multidirectional process requires interdisciplinary approaches to achieve in-depth familiarity of the existing knowledge and create the necessary capacity to discover, explore, preserve and promote new findings and values.

The development of information and communication technologies favours the process of conducting specific research in the fields of science in particular, which, for a long time have followed the strictly established methodology and tools for conducting field research.

Modern information technologies are an example of the introduction of innovative approaches into the process of dissemination of knowledge about cultural and historical heritage in an information environment. They provide the variety of methods and means by which individual and societal differences can easily, quickly and cheaply be overcome. The promotion of rich cultural and historical heritage through the potential of information technologies is a proven, working formula for the proper use of technologies in the process of perception, study and preservation of cultural heritage.

For example, the introduction of Geographic Information Systems (GIS) and their application in practice has helped to carry out faster and better research in the field of cultural heritage, more specifically in the field of archeology. Due to the fact that computer programmes and mobile devices became more accurate, the speed of recording field data has increased and the number of errors during operation was minimized. The tools available in GIS allow for fast and accurate localization of immovable cultural values. Accurate positioning of territorial boundaries helps to protect them effectively.

The search for immovable cultural values (archeological sites) is an important element of field archeological research. Properly considered and consciously conducted (by cultural and educational institutions) field searches can provide important scientific information and guidance for future research on immovable cultural property.

In particular, one of the good examples in this direction is the project "Application of mixed reality in the training and promotion of cultural heritage for the purposes of the university information environment" funded by the National Science Fund of the Ministry of Education and Science of the Republic of Bulgaria with Contract № KP - 06 - OPR 05/14 from 17.12.2018, led by Prof. DSc Irena

Peteva; this project successfully combines and applies methods from practice in the education of students in cultural heritage. [5]

As a result of the good cooperation between ULSIT and the Regional Historical Museum Yambol, at the end of 2019 a new approach was successfully tested in the training of students and doctoral students at ULSIT in the search and documentation of cultural heritage. In the autumn of 2019 on the territory of Tundzha municipality the regular archeological excavations were carried out - searches of archeological sites on the territory of Yambol district, in which lecturers, students and doctoral students from ULSIT took part. [11] They were trained in a real environment on the application of various GIS applications in the process of research and documenting of immovable cultural values.

During the field archeological excavations a total of 12 discovered settlements were located: 3 from the Late Iron Age; 1 from the late Iron, Roman and Late Antiquity; 1 from the late Iron and Ancient Ages; 4 from the ancient era; 1 from late antiquity; 2 from the Ottoman period. The territory of all archeological sites was traversed by GPS and the maximum number of points was taken along the borders where there was an accumulation of ceramic fragments. Thus, the area of the immovable monuments was established with relative accuracy. 18 grave mounds were registered, all of which were marked with a GPS point. Their current condition was described, photo- and graphically documented. Field surveys require accuracy, so all preliminary information and all subsequent information obtained during field work must be processed with an appropriate GIS-based program. The development of computer technology and mobile devices allows for the collection and processing of a larger database, thus turning GIS programs into useful assistants to archaeologists. These programs allow the storage of different levels of all visual information: from topographic maps, satellite and ortho-photo images to the polygons formed during field searches. [11]

During the field research, the principle of minimalist collection of archaeological materials was followed. Only diagnostic fragments of ceramic vessels were collected: mouths, handles, bottoms and walls of decorated vessels. In the absence of such, more characteristic fragments of the mass ceramic material were collected, and the students received on the spot detailed information about the specific finds and about the subsequent process of their description and documentation.

3. Conclusion

In summary, the project brings together proven scientists and specialists from different fields of science, as well as students and PhD students from various specialties to build a team in order to acquire and accumulate new, rich scientific material. The development of such projects and their implementation is an innovative and modern way of learning in a real environment, where as a result of combining theory and practice young people receive and make sense of existing knowledge and can directly compare it with new knowledge acquired during research.

Thanks to the policy pursued by ULSIT, young people are given various opportunities to organize their scientific and educational activities in accordance with the curriculum, as well as with their personal interests.

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