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# Integration of Alternative Education Models in University E-Learning

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## Abstract

A major part of the professional training of the students - future teachers of information technologies takes the wide-profile training in the field of informatics and its applications in an innovative educational environment. Modern digital reality and student interests promote the combination of elements of electronic and traditional learning as a preferred approach in university education. Electronic forms based on advanced content management information systems and Internet services change the roles of participants in the learning process and facilitate the realization of an interactive environment in which basic didactic relation is not a student - a teacher but a student - an environment. Establishment of a national university information-educational environment in Bulgaria is faced with various problems and a matter of the future. Currently, each higher education institution uses a selected educational environment, most often the Moodle platform, to create and develop electronic learning courses in search of qualitative and motivating student training. Simultaneously and in parallel with universities, various alternative educational organizations offer well-advertised, practically oriented, time-limited, and flexible as an organization and proven successful courses in the field of informatics and information technology. There is a connection and mutual influence between the university forms of e-learning and those of the alternative educational institutions. The study of good practices and the enrichment of university education with new forms of organization and communication with students, advertising, provision of training materials, etc. will contribute to the achievement of a higher quality of education. The article describes the results of a one-year study of innovative training models in the field of informatics and information technologies of alternative educational organizations. The research was carried out within the framework of a university project entitled "Study of innovative models for the work of alternative educational organizations", with the active participation of first-year students of "Pedagogy of Information Technology Education" from the Faculty of Pedagogy at the Thracian University.

Key words: innovative models, e-learning, digital technologies.

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### **Introduction**

In the field of IT education state universities in Bulgaria have a large number of concurrent organizations that offers in very successful way training courses. Although their courses are paid, they are preferred for many reasons by people who want to acquire a short-term qualification that ensures their realization on the labor market. This type of organizations we define as alternative educational organizations. They carry out training and education without being classic type educational institutions.

The alternative educational organizations do not work according the Higher Education Law but they have official permission from the Ministry of Education and Science of the Republic of Bulgaria to train and issue certificates for the trainings. Their results are remarkable and many young people attend their training courses in addition to their university education. There are frequent cases when students interrupt their studies at university, complete training courses and start work mainly in IT companies. Such cases are not desirable for a university that educates future IT teachers like Thracian University in Stara Zagora. This is a good motivation to start an investigation of the work models of the alternative educational organizations.

From another side, there is a connection and mutual influence between the university forms of e-learning and those of the alternative educational institutions. The study of good practices and the enrichment of university education with new forms of organization and communication with students, advertising, provision of training materials, etc. will contribute to the achievement of a higher quality of education.

Training future teachers should reflect and implement the new philosophy of education in 21<sup>st</sup> century, so called Education 3.0. Its main characteristic is having the freedom to go out of the schools and the universities borders and to use the world as a huge classroom. (Gyurova, 2018) The diversity of available electronic educational resources creates the opportunity for self-learning and enquiring knowledge. This is also valid for the area of pedagogical education and the young teacher should be ready for implementing a new digital education. The best approach is to start to teach them since first grade of university study.

Another point of view is connected with implementation of research approach in training which leads to better quality of education by transforming learning into research. (Neminska, 2018)

Having a subject of investigation some modern methods of training, understanding of needs to train students to self-learning and importance of research methods for their developing as teachers of 21<sup>st</sup> century – these are the three base elements of the work presented here. They could play role as a logical and natural task and goals of a work on a science project with students' participation.

The aim of the article is to describe the results of a one-year developing of students' who took part in the study of innovative training models in the field of informatics and information technologies of alternative educational organizations. It was considered that the above research could be attractive and near to young people and having step ways task to solve they could acquire many new and necessary

competencies. A special project entitled "Study of innovative models for the work of alternative educational organizations" was designed and carried out in 2016/2017. The students' specialty is "Pedagogy of Information Technology Education" from the Faculty of Pedagogy at the Thracian University.

### **Relevance of the problem**

Information technology is one of the main components of the environment in which the various activities in each organization are realized. In universities, their presence is inextricably linked with the application of new educational technologies that change the way of teaching and learning.

Alternative educational institutions in Bulgaria are different in their type and status and what unites them is that they offer their training mainly through the means and services of the Internet. They organize their work according to their own initiative, ideas and visions about the required by the labor market qualified workers with certain knowledge and skills.

Both universities and alternative educational organizations are trying to offer an education that motivates students to acquire a variety of digital competencies, which provides:

- Professional and career development;
- Constructing new knowledge on accumulated old knowledge and experience;
- Ability to learn, regardless of time and location;
- Modular organization of learning content and learning activities tailored to the individual achievements and progress of the student.

The analysis is made in the following directions:

- Formulation and identification of advantages and disadvantages of alternative educational organizations in Bulgaria, tracking their results, comparison with the classical and electronic forms of university education;
- Classification of alternative educational organizations on selected criteria and functionalities with characteristics of innovation;
- Assessment of the offered digital learning resources, ways of accessing them and the means of storing them;
- Comparison of the educational activities included in the alternative forms of training with the capabilities of the modules used by the Thracian Electronic University;
- Establish the attitude of the students - future teachers of information technologies to the offered forms of teaching resources and activities of the Faculty of Pedagogy of the Thracian University and the alternative educational organizations.

The results of the comparative analysis are the basis for integrating the good practices of the business organizations offering educational services into the training of both future IT teachers and the postgraduate training of pedagogical specialists.

### **Purpose, objectives and the model of the study**

The project "Study of Innovative Models for the Work of Alternative Educational Organizations" is aimed at building a methodology and realizing a comparative analysis of alternative models with the electronic forms of education of students from the pedagogical specialties at Thracian University. The design and structure of the project are presented as follows:

The title: *"Study of innovative models for the work of alternative educational organizations"*

The team:

1. Lecturers on ICT Faculty of pedagogy at Tracian University
2. Students from specialty "Pedagogy on education of IT"

Project objective: Study of innovative training models in the field of IT, offered by alternative educational organizations and realization of comparative analysis with the university electronic forms of study at the Thracian University.

**Activities:**

1. Conducting studies on innovative models and forms of training offered by alternative educational organizations according to the individual programs of the students;
2. Analysis of the offered forms of education, identification of their advantages and disadvantages, tracking their results, comparison with the classical forms of education.
3. Establishment of the attitude of the students of PEET specialty to the offered forms of teaching resources and educational activities from the Faculty of Pedagogy and the alternative educational organizations;
4. Creating e-courses with certain student-preferred resources and activities from the curriculum of the specialty.

**Educational artefacts:**

1. Methodology of the study, including methods, resources, criteria for classification and evaluation of innovative training models Theoretical overview of innovative models and forms of training of alternative educational organizations;
2. Classification and evaluation of digital learning resources, how to access them and the means of storing them;
3. Comparison of the training activities included in the alternative forms of training and with the e-learning activities of the Pedagogical Faculty;
4. Electronic resources for the training in the specialty disciplines;
5. New electronic courses at the Faculty of Pedagogy.

**Literature review**

This section shortly covers main components – new pedagogical competencies, TPACK framework, research method and social psychology in pedagogical practice which play roles as leading theories in our work and determine its characteristics.

University pedagogical education faces new challenges in terms of needs to offer to future teachers new literacy and competencies connected with processing and usage of information, social media skills and self-learning. And this must be organized in a very dynamic environment and via changing and updating tools and technologies. Gyurova (2018) recommends training all new competencies to be supported, provided and developed as a main part of the study programs and plans of all pedagogical specialties. She finds that university pedagogical education has a new meaning and pedagogical specialists should not be restricted and their competencies limited by curtain subject or disciplines.

Instructional and technological point of view a decade ago defines “technological pedagogical content knowledge” (TPCK later renamed TPACK) framework implemented by Doering at al. (2016) in developed an online platform for assessing teachers’ TRACK. The main word here is knowledge which is combined separately with pedagogical, technological and content. Shortly what does it mean: content knowledge covers the facts, information, concepts and theories on given discipline or subject; pedagogical

knowledge consists methods, processes, practices, approaches and ways for teaching; technological knowledge concerns standard technologies like usage white board, interactive board, video, Internet and etc. The most interesting is when one starts to imagine the combinations by 3 words of these four: pedagogical content knowledge – how to teach knowledge; technological content knowledge- how the presentation of content knowledge could be changed by any technology; technological pedagogical knowledge- how the technological tools could support and maintain the teaching. The end of this game with 4 words is the term TRACK- technological pedagogical content knowledge which is base of good teaching with technologies, which includes all pedagogical technics for teaching content via technologies, facilitating acquiring knowledge and solving learning problems. It sounds familiar to every teacher when someone explains that for achieving new knowledge on the base of old one the role of the technologies is priceless.

Teaching young people one have to think about integration of some basic social psychology principles in pedagogical practice. (Donev, 2017) The students participating into the discussed project above form a group of 14 persons. It is so called small social group that requires special approaches to reach successful results and go through the theoretical five stages: establishment, fight, norm, catharsis and execution. From the beginning of the project only 6 students started to work but later the whole group was involved because of their desire which is a very good result.

The main reason for designing the project is to establish conditions where the students could become more active and motivated for acquiring a very important and difficult profession what is teachers' one. The ICT lecturers paid attention to the first students group of a new specialty in Pedagogical faculty as their future colleagues. The entrance level of the students is not good – even most of them do not show enough basic knowledge on IT mandatory for secondary school. So special methods should be applied like the Research method. It is recommended by Nemenska (2018) to get better quality of education by transforming learning into research. “The research approach in teaching directs each student to follow their own path to build and organize their knowledge; justifies the idea that it is more important for a student to know how to learn than to memorize information”. (Nemenska, 2018).

### **Methodology**

The applied methodology intents to facilitate the students' participating and this way to ensure their success. The main problem students have to solve is to make a profile about a given alternative educational organization and present the results during any university event devoted to the 15 years' anniversary of Faculty of education or Balkan pedagogical conference.

Finding the information our days seems to be an easy task but processing and presenting it is some kind of obstacle and challenge for a person without enough experience. This way next approaches are applied:

1. The tasks are structured step ways as a system or set of information nodes. Five main nodes are defined to be followed by students in their research. What is very important is the work for evaluation if the observed organizations follow the main pedagogical principles as there are described by Andreev (1998) and Radev (2003), who are the most famous theoretical specialists on pedagogy in Bulgaria. In Bulgarian pedagogical universities students are trained to understand and apply classical and innovative didactical methods but not in the first grade like our students are.

The set of information nodes applied in the project is presented in details by Yordanova (2019). All famous alternative educational organizations are evaluated by students according to their characteristics

as educational organization, the training organization, the quality of the training process in regards of main pedagogical principles, and learning outcomes.

2. A set of criteria is defined for having good presentation and students are trained to prepare interesting, emotional and interactive performance.

3. The students are tested if they have any previous experience for research work and then according to the results the group was divided to 7 teams with group tasks. Individual tasks are not preferred as students have to be trained into team work. They made the choice with whom to share the task.

4. The students have to make an analysis of all gathered facts for the observed organizations and conclude if the work model is innovative. To do this they have to be educated or self-learn what is disruptive innovation in education. (Christensen at al. 2011) The purpose difficult understandable for the participating students is to discover if any innovative methods and forms of education are implemented.

For the purpose of the research in innovative models, we evaluate the objective and the expected results, the flexibility of the forms of training, the type of access to the courses, the provision of training materials, the forms of certification at the end of the training; communication with the learners before, during and after the end of the course, advertising and promotion of the offered educational services. All these activities should be done on innovative way.

5. Some of the students take part in courses trained by observed seven organizations in order to have internal and true impressions how the education process is organized. It would not be good practice to make conclusions on the base of statistics published in the organizations' sites.

### **Results and discussions**

The most important results from the current project could be separated to two groups: 1) the changes in the students' competencies and attitude to the education as organization process and 2) the evaluation of innovative models implemented by alternative educational organizations in terms of their applicability in our university.

Students achievements in numbers are as following:

- Seven (7) presentations and articles accepted by the participants at University students' conference with great attentions and many remarks and questions. The present lecturer show satisfaction about the progress of our students.
- One (1) article included in Balkan pedagogical conference and presented in front of foreign pedagogical specialists.
- One (1) article accepted in Students conference in Istanbul, Turkey.
- Two (2) article printed in annual students' almanac.

The progress of the students - members of our project team is remarkable and promising future achievements. They are informed about alternative educational organizations and are aware of their trainings. The students have their own idea of well-organized training with electronic forms and realize the impact of the way they are being trained on their future professional performance.

Thanks to project team, students and lecturer, work could be assessed like excellent and successful. Seven profiles of alternative organization are described and presented on the planed events with remarkable performance. Further work leads to a classification of organizations' types to two groups: university type organizations and online training centers.

Most of described and noted methods used by observed organizations discover the next characteristics of used methods:

The learners or participants in training courses are motivated by:

- The interesting and innovative ways the knowledge is presented and illustrated;
- The 24/7 model of access to learning materials;
- The diversity of the electronic types of learning resources,
- The used all possible communication channels,
- The application of social media as an environment for work,
- The contemporary topics of the courses,
- The usage of different kinds of advertising of training courses.
- The strong connections with business and opportunities to start work after having good

results in the final exam.

The management includes promoting the results on project's site. One of the students' individual program includes the task of building such a site. The student writes on the first page: "The most important feature of the project is the participation of the first degree in the Pedagogy of IT education."

As a rule, the materials offered by all organizations respect the basic pedagogical requirements for visibility, consistency and systemicity. In order to organize a learning process, they also apply social informatics, which is a term related to the usage of social media as a learning environment. All communication opportunities in a social media are useful for exchanging information, feedback, organizing discussions and offering materials.

If one focuses on a random training process that is organized with social media the next results could be noted: the reached closed contact between trainees as well as between trainees and trainers. Usually the similar age is advantage. Most of trainers in alternative organizations are young people, as a rule they are not university lecturers. Participants in the training show a particularly strong motivation to learn the course material and are very active at any time of the day in the discussions. They ask questions and offer solutions, discuss and share additional materials.

## **Conclusion**

An attempt is made to compare the work models of alternative educational organizations with the electronic forms of training of the students of the pedagogical specialties at the Thracian University. The research was carried out within the framework of a university project with the active participation of first-year students on Pedagogy of IT education.

We have developed a successful model for a project work that contribute to the progress of students' development as future teachers since the first grade of study. Having individual tasks and performing them as a small team the students learn how to work to reach good results and satisfaction. They learn to relay to the group and lecturers during the acquiring new competencies and using a new for them research methods. The group management leads to improvement of students' skills to work with information, search for information, and presentation. This way the students are directed to the main skill – self-learning. Working in the frame of similar project they get guidance and an idea of their future work. Involving students in university projects is strongly recommended.

Nevertheless, the lecturers - members of the project team work on both sides as trainers and as researchers on the project topics, the results bring satisfaction. They are also useful to improve university

e-learning after comparing with concurrent organizations.

As alternative educational institutions in Bulgaria, we designate organizations that without higher education institutions under Higher Education Law. They offer their educational services primarily through the means and services of the Internet. They organize their own initiative activities either according to their own ideas or as a result of national or European projects. We also include non-governmental communities that develop, translate or promote the results of especially devoted to the creation of training resources, Bulgarian or foreign projects. But we still have what to learn from them - they are flexible, contemporary, modern and brave in usage new IT tools and environment.

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