



## Digitally based education in UNWE educational innovations protected as IP rights

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### Abstract

*The purpose of this paper is to present the achieved as an analytical and synergic process result "SYSTEM FOR ANALYSIS, EVALUATION AND MANAGEMENT OF THE DIGITALIZATION OF THE LEARNING PROCESS IN HIGHER SCHOOLS" under the realization of KP-06-H 45/7 entitled "DIGITALIZATION OF THE LEARNING PROCESS IN HIGHER EDUCATION - IDENTIFICATION AND MANAGEMENT MODEL" funded by the The Bulgarian National Science Fund (BNSF).*

*This educational innovation consists of 4 modules:*

*Module 1: Knowledge, skills and assurance of teachers based on a hardware device with accompanying software product and Internet connection - presence of a PC, laptop, other device for working in a digital environment (camera, microphone), ensured information, software and digital connectivity.*

*Module 2: Knowledge, skills and assurance of students with elements: based on hardware device with accompanying software product and Internet connection - presence of a PC, laptop, other device for working in a digital environment, provided information, software and digital connectivity and knowledge and skills for working with educational platforms: MOODLE, TEAMS, BBB, ZOOM, others.*

*Module 3. Knowledge, skills and provision of higher educational institutions in information and administrative service of the educational process*

*Module 4. Database for characteristics and indicators of online education in higher education institutions included a survey on characteristics of online learning compared to traditional face-to-face learning.*

**Keywords:** *teaching, training, digitally based higher education, intellectual property rights*

### 1. Introduction

In the conditions of digital business environment, high competition in the educational services and the need to offer a user-friendly learning format, the challenges of the pandemic and the convenience of working in a digital environment for students and teachers, All these determines the focus on and the process of continuous improvement of the digitization of higher education.

The problem area of the project "digitalization of the educational process in VU" is structured in response to public needs as following:

- the need for digitization of the educational process in the higher education institution has been proven]
- there are innovations in the educational process in VU, based on digital technologies and applied in the educational process;
- there are innovations of VU, based on digital technologies and applied in the administrative process.



## 2. Main methodological discussion points

Based on this argumentation, the main purpose of this scientific project that I am going to present to you is to investigate and prove the importance of the digitization of the educational process and its administration in the modern educational environment for the successful implementation of the learning process and good student results, for the competitiveness of the HE.

The objective statement of the project is structured as follows:

1. To define and clarify in a meaningful and structured aspect the concept of "digitalization of the educational process in higher education". To analyse the achieved level/level of digitization of the educational process in UNWE and to identify the possibilities of ICT for increasing the level of digitization.
2. To carry out studies on the level of digitization of leading universities in Bulgaria
3. To present a conceptual model - economically and scientifically based, to achieve a higher degree of digitization of the educational process in VU as a factor for competitiveness in the market of educational services
4. To draw general conclusions and recommendations to Bulgarian universities for the purposes of competitiveness in the international/European educational space and to disseminate the results of the project in academic circles in Europa.

The approach is interdisciplinary, systematic and complex.

I am going to reveal the content and results following the moduls of the conceptual model of analysing and manage the digitalization of the educational processes in HE.

**Regarding Module 1:** Knowledge, skills and assurance of teachers based on a hardware device with accompanying software product and Internet connection - presence of a PC, laptop, other device for working in a digital environment (camera, microphone), ensured information, software and digital connectivity;

the scientific team is observed the following- indicators:

- Hardware security with accompanying software product and internet connection - availability of PC, laptop, other device for work in digital environment, provided information, software and digital connectivity
- Knowledge and skills for working with educational platforms: MOODLE, TEAMS, BBB, ZOOM, others
- Availability of a set of prepared / presented lectures / PPP in a format suitable for digital environment;
- Skills for working in a digital environment - internet connectivity and information competence for working in a digital environment in the course of lectures / seminars conducted online
- Knowledge and skills for inclusion in lectures / seminars / exams with students on accessible and embedded in the curriculum official websites of institutions, organizations, companies and their subsides with databases, reports - annual, analytical, statistics.

**Regarding Module 2:** Knowledge, skills and assurance of students with elements: based on hardware device with accompanying software product and Internet connection - presence of a PC, laptop, other device for working in a digital environment, provided information, software and digital connectivity and knowledge and skills for working with educational platforms: MOODLE, TEAMS, BBB, ZOOM, others.

The scientific team has observed the following indicators:

- Hardware security with accompanying software product and internet connection - availability of PC, laptop, other device for work in digital environment, provided information, software and digital connectivity
- Knowledge and skills for working with educational platforms: MOODLE, TEAMS, BBB, ZOOM, others
- Knowledge and skills for inclusion in lectures / seminars / exams with students on accessible and embedded in the curriculum official websites of institutions, organizations, companies and their subsides with databases, reports - annual, analytical, statistics.
- Skills for working in a digital environment - internet connectivity and information competence for working in a digital environment, incl. skills for providing information on selected topics, projects, tasks
- Skills for conducting analyses of accessible and included in the curricula on official websites of institutions, organizations, companies and others.



**Regarding Module 3:** Knowledge, skills and provision of higher educational institutions in information and administrative service of the educational process and administrative staff"

- Internet connectivity of universities - considers the connectivity and provision of wired and wireless access to the Internet and Intranet in classrooms, laboratories, offices, centres, and Wi-Fi connection within the university campus. The level of connectivity also includes the provision of broadband Internet access, mobile broadband access, as well as the speed of broadband access.
  - Used platforms, models for access and storage of Internet-based content provided by the university and its teachers for the learning process - stable, characteristics in universities, created and maintained, updated platforms, information centre / unit for servicing the process of access and use of educational platforms of students and teachers
  - Competence of the administrative and service staff in the learning process;
  - in the educational process - digitalization of training in full-time and distance learning; degree of digitalization during current control; degree of digitalization of the exams - "Educational Activity" Directorate;
  - in accompanying activities - digitization of the study schedule; digitalization of student assessment, digitalization of library activities - Information Technology Directorate and University Library, Security Organization Directorate
  - in the administration - digitalization of application processes and admission of students to the university - this includes digital submission of documents, approval, admission to the exam and conducting an entrance exam; ranking of admitted students and processing of exam results;
- Ethical norms, rules and regulations for the use of content provided in a digital environment, incl. lecture materials, PPP, information and reference materials. / availability of documents in the university, ensuring the absence of plagiarism, originality and authenticity of works of students and teachers /

As an IP experts the focus of my subsequent exposition is Intellectual property rights /IP rights/ of universities over technologies, products and Internet content and their availability of patents for inventions, certificates for registered utility models, design, others – IP possession of universities.

**Regarding Module 4:** Database for characteristics and indicators of online education in higher education institutions included a survey on characteristics of online learning compared to traditional face-to-face learning.

As a result of the organized research work under the conducted methodologically we receive a complex and multifaceted assessment of the state of digitalization of the educational process in higher education as the obtained, strengths and weaknesses are identified, unresolved or partially resolved issues relevant to the topic are identified.

The presented educational innovation is already implemented in the educational process in UNWE successfully with a very good feedback by teachers, students and administrative staff.

On this basis, the management of universities can make informed decisions for optimal process management in the short and medium term for the digitalization of the educational process in universities.

### 3. Conclusions

1. As a result of the implementation of this project, a system for periodical. analysis and assessment of the level of the educational process in a digital environment was created, conclusions were drawn about the need to combine the methods of training and consulting students in a hybrid format: partially present face-to-face learning, partly in an online environment using Internet platforms and information sources available to students.
2. "SYSTEM FOR ANALYSIS, EVALUATION AND MANAGEMENT OF THE DIGITALIZATION OF THE LEARNING PROCESS IN HIGHER SCHOOLS" is already protected as IP rights, practically as a patent for this educational innovation as a method and result.
3. This patent is included in a HUB Intellectual property of UNWE and may become the object of licensing or transfer upon interest by other interested universities.



**References:**

- [1] Markova, M., „The Company Digital Competitiveness Focused on Intellectual Property Rights– Concept, Assessment and Strategy“ Economic studies, BAS, 2022, N 3
- [2] Stoyanova, Tsv., Maria Markova., Researching digitalization of the education - a case study of Bulgarian universities, Entrepreneurship and Sustainability Issues, 2022, Vol10, No1, WoS, in co-authorship