

Original Research Article

New approaches to assessing the quality of educational activities at universities in the context of digitalization of the economy and increasing labor market requirements

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Abstract: The article presents a look at the new system for evaluating educational programs at universities, using the example of universities in Ukraine. The possibility of transitioning universities to the digital economy and forming a “digital university 4.0” is considered. The requirements for modern students in higher education institutions are considered. We have proposed a form of education that we consider effective, namely, mixed, which combines both online and traditional academic education.

Keywords: digitalization of the economy; education; educational program; digital form of education; traditional form of education; digital university

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1. Introduction

High-quality training of graduates of Ukrainian universities in the context of the digitalization of the economy and a radical increase in the requirements of the national labor market involves the implementation of highly professional educational programs (EP), taking into account the interdisciplinary nature and multilateral involvement of representatives of the professional community in the educational process at all levels of training.

In view of the rather radical increase in labor market requirements for the graduate competency model, a revision of the approach to the process of its formation and an assessment of the quality of the structure and conditions for the implementation of educational activities at universities in Ukraine are required. The key challenges that determine the need to apply new approaches to assessing the quality of educational activities and the formation of a new competency model of a graduate include: a high need for highly qualified specialists oriented in related areas of professional activity (for example, a specialist in the field of electronic marketing, online banking, information and digital technologies, and so on); the need to generate and innovate and use emotional intelligence in professional activities (for example, the use of emotional intelligence in managing business processes; large-scale individualization of economic processes, both in traditional and online formats (for example, the need to personalize services, especially intellectual services, as well as methods of production and sales of goods; the need for university graduates to solve complex multi-level professional problems using creative thinking (for example, the use of non-standard approaches to solving complex professional problems, using the tools of behavioral economics, information and communication technologies (ICT), digital marketing

management, in conditions of limited resources and tough competition in markets, under the influence of globalization and digitalization processes).

2. System for assessing the quality of educational programs

The new quality assessment system should be expressed in a set of criteria that allow assessing the structure of the educational program in accordance with the requirements and quality of implementation of educational activities in conjunction with the requirement of labor measures both at the national and international levels, as determined by professional standards^[1]. Accordingly, an assessment of the quality of the educational program should include:

- external quality assessment, which is an assessment of the structure of the EP and determination of the quality of the conditions provided by the university for mastering the profession of further employment of university graduates (state accreditation and professional public accreditation);
- internal assessment of the quality of an educational organization, which allows qualitative assessment of the effectiveness of the stage-by-stage development of professional competencies by students through the involvement of representatives of the labor market and representatives of the educational organization (independent assessment of self-assessment of the quality of educational activities).

The key differences in the applied criteria for assessing the quality of educational programs for compliance with standard requirements and labor market requirements include the following:

- when carrying out state accreditation, the entire EP is subject to examination for compliance with the quality of the EP; when assessing the compliance of the EP with the requirements of the labor market, only the part of the EP formed by the participants in educational relations, including representatives of the labor market, is subject to examination;
- when externally assessing the quality of an EP, it is necessary to both take into account the content of the funds for assessment tools and check the availability of documentary evidence of the relevance and practice of targeting the corresponding assessment tools provided by representatives of specialized enterprises;
- evaluation criteria used to determine the compliance of the conditions for the implementation of the educational program (material and technical support for educational activities, the participation of the employer in the process of implementing the educational program, accounting methodological and software must confirm: the presence of the necessary conditions provided by the educational organization (university) for improving professional skills (abilities) and consolidation of students' professional knowledge; the effectiveness of educational activities as part of the development by university graduates of professional competencies and professional skills (abilities) that are necessary and sufficient to obtain a profession in accordance with the profile of the educational program and the requirements of the labor market;
- as part of assessing the quality of EP implementation, an assessment of mechanisms for enriching the profile component of the EP is required: for example, the implementation of project activities (virtual engineering and reengineering projects, including in the context of startups), the development of networking within the framework of relationship marketing, and expanded interaction with leading employers in a certain industry;
- new approaches to assessing the quality of educational activities should ensure the unity of requirements for the structure and quality of implementation of educational activities, with a focus on assessing the professional results of graduates through the prism of the conditions that ensure the profile of the educational program.

Contributions to the formation of a new model for assessing the quality of educational activities should be made by the following direct participants:

- the university as a subject that shapes educational ideology at the strategic and tactical levels;
- the state as a regulator of the order and conditions for the implementation of educational activities;
- the labor market and professional associations as participants, checking the compliance of established criteria and strategic decisions with professional requirements.

The new model for assessing the quality of education is determined by the establishment of a system of criteria reflecting the professional needs of the labor market while maintaining the fundamental foundations of higher education^[2].

Passing professional public accreditation for an EP determines:

- the place of the EP in the corresponding ranking of the educational organizations (universities), formed based on the level of practice orientation and demand for the EP among students and graduates;
- opportunities for the development of network interaction between educational organizations together with representatives of specialized enterprises as part of enriching the EP with professional content, as well as the transfer of educational products in the region of the country;
- the demand for EP, as well as a guarantee of the quality of implemented EP for representatives of the labor market in terms of compliance of their content with the requirements of professional standards;
- the possibility of recognizing the results of passing the theoretical part of the state final certification as the results of an independent assessment of the qualifications of graduates of educational organizations in accredited qualification assessment centers.

The presence of professional and public accreditation of the EP university is a guarantee of the quality of professional training of university graduates and is used to attract an increasing number of new partners-stakeholders, who are leading employers in the economic sector of a particular region of Ukraine, to participate in educational projects of the university and in the process of implementing EP.

3. Comparison of traditional and innovative forms of education

It should be noted that the EP should ensure the formation of systems thinking among students, the development of social and creative capital within the framework of behavioral economics, and, accordingly, contribute to the development of professional competencies that are relevant and necessary for representatives of the labor market^[3]. In this regard, it is necessary to update the EP, taking into account the skills (abilities) and knowledge contained in the functional core of the professional standard, as well as the predicted requirements of the labor market both at the national and regional levels^[4].

In modern realities, in the context of the digital transformation of the economy, the planetary COVID-19 pandemic, and the radical transformation of the international and national labor markets, it is necessary to build a new and multi-criteria system for assessing the quality of the competency model of a university graduate based on a systematic approach.

It is also important to understand that digital education is a form of learning in which students actively use modern ICT and digital technologies to master the educational materials of specific educational programs^[5]. The ability (educational skills) to search, select, and use information, primarily in an applied and practical manner, is the most important requirement for modern university students^[6].

At the same time, the authors believe that online education should not completely replace classical education. This is because feedback is needed. The most effective form of the educational process will be a mixed one, which combines both electronic and traditional academic education.

In Ukraine and its regions, the use of digital technologies in the educational process is expanding in the field of higher education. Basically, all universities have access to the Internet and have a normative, technological, and content-based course in computer science and ICT in general education programs. However, the number of personnel trained and the compliance of educational programs with the needs of the digital economy are insufficient. There is a serious shortage of personnel in the university educational process at the educational level. In step-by-step certification procedures, digital tools for educational activities are not sufficiently used; the process is not integrated holistically into the digital information environment.

It is important to understand, especially on the part of university management, that in connection with the local implementation of digital learning tools, quite a lot of social problems arise. The transition of a university in Ukraine to the digital economy and preparation for the formation of “digital university 4.0”^[7] require enormous costs, primarily financial, for logistics and development of the university, as well as socio-ethical and economic ones. The system of communication with students is changing quite radically, and the load on the teacher is only increasing. But, for example, there is no legal regime for communication via the Internet. A student can upload materials (online) at any time of the day, and this is a clear violation of the teacher’s work schedule. At the same time, during the transition to online learning, the teacher has an additional burden (not taken into account by the teaching load) on the development of online courses or the preparation of electronic workshops, teaching aids, and methodological materials. **Figure 1** and **Figure 2** show the advantages and disadvantages of traditional (classical) and innovative forms of education.

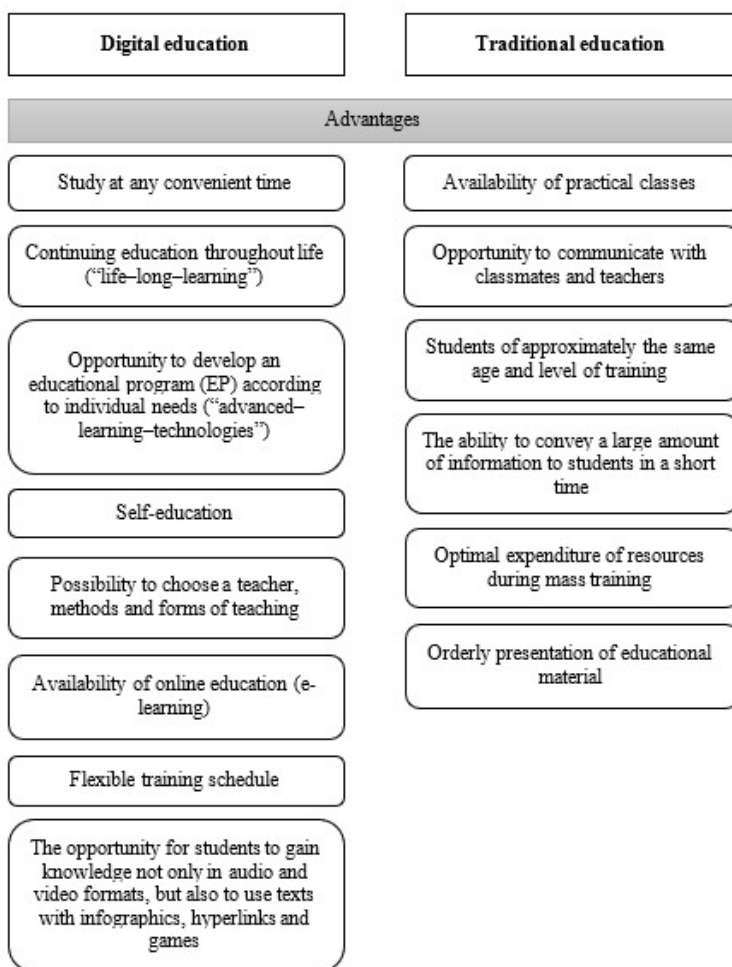


Figure 1. Comparison of the advantages of digital and traditional forms of education.

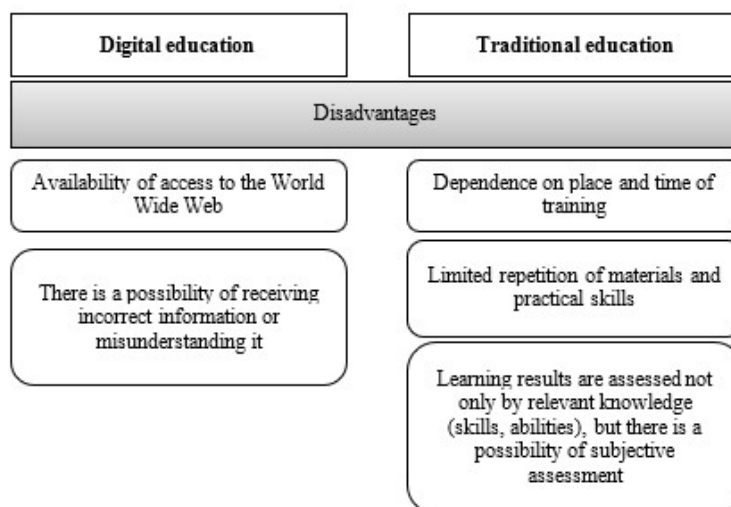


Figure 2. Comparison of the disadvantages of digital and traditional forms of education.

It is important to understand, especially on the part of university management, that in connection with the local implementation of digital learning tools, quite a lot of social problems arise. The transition of a university in Ukraine to the digital economy and preparation for the formation of “digital university 4.0”^[7] require enormous costs, primarily financial, for logistics and development of the university, as well as socio-ethical, and economic ones. The system of communication with students is changing quite radically, and the load on the teacher is only increasing. But, for example, there is no legal regime for communication via the Internet. A student (student) can upload materials (online) at any time of the day, and this is a clear violation of the teacher’s work schedule. At the same time, during the transition to online learning, the teacher has an additional burden (not taken into account by the teaching load) on the development of online courses or the preparation of electronic workshops, teaching aids, and methodological materials.

Also important for the introduction of the digital economy is the training of teaching staff. The level of proficiency in digital technologies of a teacher, in the context of the formation of “digital university 4.0”, is a prerequisite for the digitalization of higher education. And that is why, on a systematic basis, it is necessary to periodically improve the qualifications (digital competence) of the teachers themselves. The implementation of these goals, the main one being the formation of a “digital” university, involves the creation at the level of the region and the country as a whole, of an adequate educational space and the formation of professional competencies in the field of digitalization^[8].

The digital transformation of the educational space, taking into account new approaches to assessing the quality of educational activities, means the formation of knowledge and experience necessary for the implementation of competencies in the use of cloud and fog computing tools, advanced analytics as new forms of working with big data, and artificial intelligence in accelerating the standardization of basic educational processes. At the same time, the role of webinars and video content tools in online education is increasing. Artificial intelligence is becoming one of the important elements of the educational environment of “digital university 4.0”^[9]. In a number of Ukrainian universities, his cognitive self-learning system has already been tried as a smoothly running online student consultant.

Digital platforms have become a special element of the current educational space. In a broad sense, platforms represent a model of communication interaction between all interested participants in the educational process. New forms of socialization of participants in the educational process within the university have

emerged, under which it is possible to accept, generate, analyze, and exchange innovations that meet the needs of the time.

They provide convenient network access for users to a shared amount of computing resources with minimal transaction and operational costs.

In the context of the prospects for creating a “digital university 4.0”, information visualization, cloud computing, and additional virtual reality technologies have radically changed the way computing resources are used and put forward new system requirements for university education and the development of new approaches to assessing the quality of educational activities. For example, the introduction of AR/VR technologies has become widespread in the study of complex phenomena and processes. Entire educational laboratories can be visualized. Using this technology, experiments are carried out with the objects and phenomena being studied. The visualization of learning makes it possible to simulate various research situations and work through them remotely. According to expert estimates^[10], the VR technology market will reach \$100 billion by 2025, and the digital education sector will continue to remain a large sector for the use of these technologies.

4. Conclusion

The prospects for the development of the “platformization” phenomenon in the Ukrainian educational space are associated with the emergence of new educational products and the network effects of interaction between universities. We believe that in order to develop this communication platform, it is advisable to create our own software and digital platforms for open education.

Taken together, digital technologies make it possible to implement the principle of unity in the way of organizing scientific experience, which acts in the form of a tendency towards the perception of general, cumulative knowledge. It should also be noted that synchronous learning is becoming widespread in world educational practice when the student independently chooses the routine, intensity, and schedule of classes. This approach has not yet found wide application in Ukrainian universities. Also, of interest is learning through computer simulation of real processes and their game adaptation to practical problems. Gamification is developing quite actively in leading universities in Ukraine as a form of involving students in the educational process with the help of application software and websites.

Initiatives and transformations aimed at the digital transformation of the higher education sector in Ukraine put on the agenda the issue of the role of the teacher, expert analyst, motivator, and tutor in the modern educational space. Practice shows that the best teachers themselves become brands, preserving national and regional traditions of education and upbringing. In general, we can conclude that Ukrainian higher education is more inclined towards blended learning, combining traditional classical, classroom, and digital online learning and implementing the principle of harmony. Its essence lies in the development of not only internal processes that complement each other but also organic interactions with the changing external environment.

Conflict of interest

The author declares no conflict of interest.

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