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COLLABORATIVE TRENDS IN HIGHER EDUCATION IN CONTEXT OF GLOBAL CHALLENGES

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Abstract

The relevance of the study stems from the impact of digital collaboration on the educational process of higher education institutions, combining the use of robotics, artificial intelligence, 3D printing and other smart systems in the learning activities of students. Currently, the methodology, content and technologies of the digital collaboration of the university educational process have acquired the status of global trends in training students - future specialists for the spheres of the transforming world. In this context, the development of collaborative approaches to designing students' digital competences in line with the foreseeable trends in educational innovation is justified in this article as an independent research area. The article reveals the pedagogical discourse of students' digital competences, taking into account collaborative trends in the educational process of higher education institutions. Priorities for collaborative trends in the HEI's educational process are established. In the course of the study, the authors of the article substantiated a collaborative model of the student's digital competences. The effectiveness of the model has been proven by the results of its implementation in the educational process of the HEI. This article is recommended for teachers, university students, methodologists, curators and tutors.

Keywords: modern student, educational process, collaborative trends, collaborative approach, digital collaboration, pedagogical discourse of digital competences.

INTRODUCTION

In the modern world, digital technologies are rapidly spreading across all borders, and the labor market and society as a whole are also changing with unprecedented speed under their influence (Andryukhina, Vavaeva & Komlichenko, 2021; Brolpito, 2019; Russian manufacturer of training and education aids, 2020; Maksimenkova & Neznanov, 2019; Marey, 2020; Shaidullina et al., 2018; Trushnikova, 2015). A clear example is the area of the economy in which digital technology is a major factor in increasing the productivity of employees in enterprises, in which even competition becomes a prerequisite for

enhancing the innovative potential of technological processes. In the labor market, digital technology, on the one hand, threatens the use of classification models of traditional professions, especially those oriented towards non-complex tasks. However, at the same time, it opens up great opportunities for the development of new professions, driven by the needs of the digital economy. The trend determining the employment opportunities of university graduates in the modern labor market depending on their level of digital competences is becoming steady (Brolpito, 2019; Surov, 2021). Due to the emerging needs of the labor market, modern university students - tomorrow's applicants for professional vacancies - have identified the tasks of mastering digital competencies as the first priority during their higher education (Clifford, 2017; Loshkareva et al., 2021; Marey, 2020).

The analytical and expert assessments of the new formats of higher education students' study conducted in the course of this study highlighted the special priorities of collaborative trends in the educational process of higher education, combining the capabilities of robotics, artificial intelligence, trainable machines and other smart systems necessary for qualitative transformation of learning activities (Andryukhina, Vavaeva & Komlichenko, 2021; Dremina, 2015; Tastan et al., 2018; Maksimenkova & Neznanov, 2019; Surov, 2021; Trushnikova, 2015; Qarkaxhja et al., 2021). In this context, the development of collaborative approaches to designing students' digital competences in line with the foreseeable trends in educational innovation is justified in this article as an independent research area. In pedagogical modelling as the leading research method, designing students' digital competences, in line with the collaborative trends of the HEI educational process is seen as a key idea of student training. The article reveals the pedagogical discourse of students' digital competences synchronized with the collaborative trends of the HEI educational process (Brolpito, 2019; Loshkareva et al., 2021). The priorities of collaborative trends that are key to the educational process of a modern university are identified. Based on the results of the study, the authors justify the collaborative model of digital competences, the effectiveness of which is confirmed by the results of its implementation in the educational process of the university.

Theoretical Analysis of the Research Problem

The problem of digital competences of university students in scientific discourse is presented in works devoted to the creation of an information and educational environment, which should be innovative, open and accessible for the student. The authors of the article divide the totality of analyzed works on the problem of digital competences into conventionally structured groups. One of them includes the works of scientific and practical interest for rethinking the conceptual and categorical apparatus of digital competences, distinguishing the concepts of competence / skill / literacy; for updating the map of traditional professions; for establishing the relationship between collaborative trends in educational process of higher education and trends in transformation of key competences of students and solving problems of rethinking the competence approach in digitalization of educational process (Andryukhina, Vavaeva & Komlichenko, 2021; Brolpito, 2019; Russian manufacturer of training and education aids, 2020; Dremina, 2015; Maksimenkova & Neznanov, 2019; Marey, 2020; Surov, 2021; Trushnikova, 2015). Another group consists of works that reveal the peculiarities of approaches to the problem of digital competences of students in developed countries. The research findings of these authors, focusing on the problems of digitalization of higher education, consist in the large-scale identification of digital competencies with digital skills of the individual (Loshkareva et al., 2021; Marey, 2020; Surov, 2021; Battulga, et al., 2019; Brolpito, 2019; Clifford, 2017; Loshkareva et al., 2021; Michael & Heather, 2017; Post & Eisen, 2000; Prensky, 2001). The dominant educational trend of these authors is the transformation of the traditional higher education system into a central knowledge hub focused on developing students' digital competencies in a collaborative learning environment. The authors distinguish three spheres of collaborative learning:

1) Global (online) education platforms transforming into major providers of knowledge and content through a variety of online courses and forums, mobile applications and devices, augmented reality applications, mass games and other formats;

2) Non-formal associations that provide a variety of services to participants in continuing education, connecting older people, school, college and university students in educational activities;

3) Communities of practice centered on groups of masters. These communities of practice are based on the ideas of human interaction, co-creation, and continuity of traditions, experiences, competences and technologies.

A theoretical analysis of the research problem reveals that despite the active interest of the teaching community, teachers, and students in digital competences and the high demand of universities for their implementation, a coherent model of digital competences, synchronized with collaborative trends in the educational process, is not yet evident. In this connection, a correct justification of theoretical and methodical approach to the use of collaborative trends in the educational process of higher education institution in designing a model of students' digital competences makes both theoretical and practical sense.

Results

3.1. Pedagogical Discourse of Students' Digital Competences Synchronized With Collaborative Trends in HEI Educational Process

The transformation of qualitative and quantitative descriptors of collaborative trends in higher education has been concretely reflected in the process of filling them with the content of the new discourse of digital competences.

Digital competences is a key concept in the collaborative educational process of HEIs. In the works of English-speaking authors, the concept of competence (skills) means the ability to perform a task with a predetermined result. It is permanently identified with the concepts of digital literacy/skills (Andryukhina, Vavaeva & Komlichenko, 2021; Brolpito, 2019). The established practice of using students' digital competences in a collaborative educational process at a higher education institution presents three basic levels:

- Digital competences, identical to digital literacy: the ability to apply digital skills confidently, meaningfully and responsibly in a given context;

- Special digital competences for specific professions in gadget maintenance, robotics;

- Digital competencies for ICT professionals. Highly specialised digital competencies for ICT professionals. For example, for programmers and cybersecurity professionals based on their ability to design and implement new designs and solutions (Brolpito, 2019; Loshkareva et al., 2021; Post & Eisen, 2000; Prensky, 2001).

Skill is an algorithm of activity brought to automatism in the process of confident and competent use of social networks and the Internet (Trushnikova, 2015; Andryukhina, Vavaeva & Komlichenko, 2021; Brolpito, 2019; Loshkareva et al., 2021).

As the results of this study show, the most correct definition of digital competence applicable to a student's personality in the collaborative educational process of higher education institutions is provided by the European Centre for Continuing Education: "the ability to use knowledge, abilities, skills, personal, social and/or methodological abilities in work or study situations, as well as in professional and personal development" (Cedefop, 2018).

3.2. Collaborative Model of Student Digital Competencies as a Key Trend of HEI Educational Process

In the process of designing a collaborative model of digital competences, the authors of this article experimentally tested the parameters of "hard skills" and "soft skills" in the conditions of the implementation of educational process trends. It has been established that the key trends in the educational process determine the need for an accelerated transition from the model of hard and soft competences to digital competences focused on the goals of developing deep, intrapersonal attitudes of a student (Andryukhina, Vavaeva & Komlichenko, 2021; Trushnikova, 2015; Surov, 2021). The draft collaborative model of students' digital competences, determined by priority trends in the HEI educational process, is represented by descriptors of competences structured according to levels: contextual (narrowly specific), among which priorities belong to professionally relevant competences; cross-contextual -

applied in broader areas of social or personal activities; meta-competences - effective in different modes of managing virtual objects or objects materialized in real physical space; existential - universal for use in different life contexts of the individual. The study found that the methodological basis of the collaborative model is existential competences and meta-competences. Existential competences develop a person's character, while meta-competences form the ability to manage the world around them and transform their underlying processes. Next are the cross-context competences, on which traditional and innovative activities are based. Contextual ones are subject to frequent changes due to external factors and quickly become obsolete due to frequent changes in educational trends and context. In view of the results obtained, the authors of this article substantiate an algorithm for implementing four levels of the collaborative model of digital competencies as a key trend in the educational process of HEIs:

- External level - contextual competences;
- Second level - cross-contextual competences;
- Third level – meta-competences;
- Fourth level (core of the model) - existential competences.

Discussion

Summarizing the results of the study, the authors of the article establish the vectors of qualitative expansion of university students' digital competences for the short-term, medium-term, long-term and close-term perspectives. Collaborative models of education are prioritized in these processes, as evidenced by the findings of this study. Among the identified types of digital competences, existential, meta-competences, cross-contextual and contextual competences dominate. Digital trends determine the operational development of students' competences in digital literacy, mathematical literacy, emotional intelligence, critical thinking, ability to work in online space, ability to work in a remote team, orientation in unforeseen situations, and disclosure of personal potential. An analysis of real jobs on the labor market shows that digitization of occupational tasks intensifies the transformation of competences and professions, both when jobs are retained and when they disappear. As the digital transformation of professions brings more and more new technologies into traditional and innovative aspects of the work process, real activities are becoming more and more virtual. The workplace simulation in the university learning process therefore focuses on an objective reflection of traditional and digital production environments. The gap between the digital competences possessed by today's university graduates and the competences demanded in the workplace is already evident in various sectors of the economy, in high-tech industries. It is not uncommon for expensive new equipment to "stand idle" due to the inability of specialists to learn it quickly and operate it efficiently. In addition, other problems hinder the digitalization of higher education. For example, outdated electronic resources. The constant renewal of these resources, in line with the meta-trend of acceleration, is costly, making it very difficult for university teams to cope. What is important to emphasize is that digitalization of the educational process is defined by interactivity and openness to all participants in the learning process. This forms both the social environment (information exchange, actualization), which self-regulates information flows, and the student's mental attitude towards choosing and freely modelling of personally meaningful information. The disciplinary approach in the educational process is being transformed by the opportunities offered by digital technology. The most relevant trend in the digital ranking of the educational process is the transformation of the status of the university teacher. The traditional lecturer-subject teacher function is gradually becoming obsolete. Teachers with the full range of digital competences, interacting not only with colleagues in their own institution, but also with colleagues in a particular field of knowledge and practice at a global level, are being replaced.

Conclusion

The study confirms the theoretical and practical significance of pedagogical justification of approaches to the design and implementation of students' digital competencies in the dynamically developing conditions of

collaborative trends in the educational process of higher education. The research proves that collaborative trends are not only and not so much accentuated fashion trends providing development of interactive multimedia educational content, as innovative educational environment of a higher education institution which forms digital competencies of students adequate to the needs of the modern labor market and foreseeable development of the education system. In this context, the development of collaborative approaches to students' digital competencies in line with priority trends in educational innovation is justified as a key research idea in this article. The article, taking into account the collaborative trends of the educational process of higher education institutions, defines and identifies: 1) pedagogical discourse of students' digital competences synchronized with the collaborative trends of the HEI educational process; 2) Prioritizing collaborative trends in the HEI's educational process; 3) The authors justify the collaborative model of student digital competences as a key trend in the educational process of HEIs. The effectiveness of the model has been proven by the results of its implementation in the educational process. This study only touches on a small aspect of the digitalization of higher education. Justifying the resilience factors of digital competences in the context of the disappearance of many professions from the labor market, indicating not only the loss of a stable source of income, but also above all the loss of life orientation is beyond the scope of this study. This aspect of the problem requires special and in-depth study.

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