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Digital Approach in Pedagogy and Psychology of the Future: Trends, Globalization Challenges

Tatiana Chernova*

PhD in Pedagogy, Associate Professor of the Department of Technological Education, Dragomanov Ukrainian State University, <http://orcid.org/0000-0002-7303-1831>

Viacheslav Nemesh

Postgraduate Student of the Department of Psychology, University of Modern Knowledge, Kyiv, Ukraine, <http://orcid.org/0000-0002-0472-1193>

Olga Togachynska

PhD in Agricultural Sciences, Associate Professor, Senior Researcher, Department of Environmental Safety and Labor Protection, Faculty of Biotechnology and Environmental control, National University of Food Technologies, Kyiv, Ukraine, <http://orcid.org/0000-0002-6672-6539>

***Corresponding author:** t.yu.chernova@npu.edu.ua.

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Abstract: People have been interested in the phenomenon of learning for a very long time. An impressive number of hypotheses and theories of learning have emerged along with the development of human thought and the scientific method of cognition of nature. The use of computers in education has been the subject of much research and debate. Technology has often been seen as a tool to help both teachers and students. Research in related literature has shown that we learn differently and engage in different types of knowledge creation when we use technology. The use of technology in teaching and learning has fueled the development of digital pedagogy. The SCOPUS and Web of Science databases were used to assess the problematic nature of the topic. 144 articles were analyzed, of which 20 articles related to the topic were taken for analysis. This paper analyzes trends in the digital approach to pedagogy and psychology of the future in the context of globalization.

During the 2022-2023 academic year, a survey was conducted in three stages. The empirical study involved 216 teachers of pedagogical faculties from different higher education institutions of Ukraine who filled out a questionnaire through Google forms.

The results of the survey have identified the main ideas of the digital approach to education, made it possible to identify the most popular digital learning tools, outline key areas in the education of the future, and determine the main trend in pedagogy in the face of globalization challenges, namely, a change in the educational paradigm that would allow digital technologies to coexist with traditional educational norms.

Keywords: globalized digital pedagogy, digital approach, teaching, digital tool.

Introduction

Digital pedagogy is digital education, which is the study of digital technologies for learning and the approach to these tools from a critical pedagogical perspective. It is about the thoughtful use of digital tools and about filling in the educational process when digital tools are not used, about paying special attention to the impact of digital tools on learning and students' psychological states. In other words, digital pedagogy is the use of digital tools to improve or modify the educational experience (Bećirović, 2023b). Digital tools can range from PowerPoint presentations to full MOOCs and flipped classrooms (Crawford et al., 2020). They can include blog assignments, use of social media in the classroom, creation of curricula, and students using digital tools to check assignments (Lynch, 2023). Digital pedagogy is an attempt to change teaching and learning in different ways through the judicious use of technology. Mainly, it is the critical pedagogical approach that thoughtfully uses pedagogical digital tools in teaching and deeply explores their impact on applied pedagogy. In addition, digital pedagogy encourages teachers to give students space to work independently and creatively (Rodés et al., 2021). An important point is the ability to find the right information related to "learning itself" as well as additional information that complements the knowledge gained. This emphasis on critical and independent thinking connects digital pedagogy to the ideas of constructivism: students learn best when they are active participants in the learning process, not when they receive passive knowledge (Potapchuk, 2023).

Learning is a social process. The goal of teaching and learning is to provide students with a range of knowledge and experiences that facilitate future professional activities. It is the process of considering why and how to implement technology that makes research on digital pedagogy relevant.

Research Problem

The development of digital technologies and the challenges of globalization pose new challenges to the education system. In the short term, radical digitalization means a shift in priorities in education, specifically in pedagogy and psychology. In the context of global geopolitical challenges, educators are facing a particularly critical issue of opportunities and practices for adequate learning through educational systems that would meet the requirements of today. In this sense, digital pedagogy and the digital approach in pedagogy and psychology can outline the trends in the education of the future.

Research Focus

The world sees from the war in Ukraine that the problem of education is becoming particularly acute. This state of affairs is not the result of a lack of education or lack of access to information. Russia's armed aggression has led to catastrophic consequences that are beyond the scope of the civilized world's perception. Today's education is ready for the rapid development of technology, and one should not question the educational process in general. However, in the face of the challenges of the technological process and globalization, it is necessary to change the very concept of education (Bećirović, 2023a). In our opinion, the main trend of pedagogical and psychological education of the future is to change the ways of providing and receiving education with a focus on the digital format.

Research Aim and Research Questions

A review of the related literature shows how rapidly the use of new technologies in education is developing. Digitalization seems to be becoming an educational panacea (Chatterjee et al., 2023). Educators and psychologists emphasize the educational value of digital pedagogy, which is gaining increasing interest among educators. Thus, the purpose of this paper is to analyze the digital approach in pedagogy and psychology within the framework of digital pedagogy, to outline the trends and challenges of globalization for the education of the future. Objectives: to outline the basic concepts of digital pedagogy, to name digital pedagogical tools that facilitate teaching, to analyze the phenomenon of transformational learning as a trend for future education.

Research Methodology

General Background

This study used a deductive approach, which involves the use of theoretical methods, such as literature review and analysis of research findings related to pedagogical and psychological education in Ukrainian higher education institutions. These methods helped to identify teaching strategies that have already been tested in the educational process and to develop new hypotheses to be tested. In addition, additional research methods were used in the study: analysis, synthesis, and systematization of scientific literature on pedagogy, psychology, encyclopedic and reference books, educational and methodological publications, and Internet information resources to clarify, compare and contrast approaches to the problem.

Sample / Participants / Group

The paper addresses the issue of digital pedagogy, taking into account how it is perceived by teachers of pedagogical faculties of Ukraine and how it is interpreted by modern scientific thought. The empirical research methods included a thorough survey to collect quantitative data on the topic of the paper. The survey method was used to analyze the results. Numerical data helped to assess the validity

of the hypothesis and proved that innovative teaching strategies make the educational process more effective.

Instrument and Procedures

The survey was conducted during the 2022-2023 academic year and included three stages: preparatory (May-August 2022), when a literature review was conducted and a hypothesis was developed based on the data obtained; experimental (September-December 2022) when the survey was conducted; and final (January-February 2023) when the main ideas were highlighted in the context of this topic. The empirical study involved 216 teachers of pedagogical faculties from different higher education institutions of Ukraine who filled out a questionnaire through Google forms. The focus group was informed about the objectives of the study, and all teachers participated voluntarily. To obtain the necessary data to test the hypothesis, teachers were interviewed online using Google Forms. The questions concerned strategies of digital pedagogy and digital approach in the educational process. Teachers were asked to voice their own vision of digital pedagogy, name digital pedagogical tools that facilitate their work, and say how they perceive transformational learning.

Data Analysis

The answers received during the survey were analyzed. The combination of similar opinions allowed us to identify the main concepts and tools of digital pedagogy and characterize the phenomenon of transformational learning, which is becoming a trend in Ukrainian higher education institutions. The conclusions are presented in the following sections below.

Research Results

According to the survey results, digital pedagogy revolves around three main ideas: intentionality, collaborative learning and freedom of choice, and transformative teaching.

Table 1

Three Concepts of Digital Pedagogy

	Features of digital pedagogy	Trends
Intentionality		Integration of educational tools. Tactics of teachers
Collaborative learning		Consideration of content, including concepts and skills, as well as methods that educators and students can use to achieve objectives
Transformational learning		Readiness for interdisciplinary work in the context of digitalization

Source: authors' own development.

Teachers make intentional pedagogical decisions to integrate educational tools to facilitate learning. They think carefully about their tactics when creating learning experiences. Educators consider the content, including concepts and skills, and the methods they and students can use to

achieve the program content objectives. Educators decide which technology can both deliver content and support pedagogy by asking three important questions:

What will students learn or what knowledge could they acquire? What method will help students achieve their goals?

What tools and resources do students need to succeed?

Consideration of the use of technology in the context of a digital approach to pedagogy has shown that the teacher requires both dynamic knowledge and a reconsideration of his or her own role.

Digital pedagogy focuses on the conditions for students to perform “expert learning”. That is, students “learn” how to learn, set goals, and share what they know. It also helps teachers develop in their role as facilitators of collaborative learning. They stand alongside their students instead of “dominating”. The digital approach allows teachers to empower students to choose how they learn and share their knowledge.

It means that when practicing digital pedagogy, teachers should provide students with learning experiences that include multiple means of engagement, representation, action, and expression, regardless of whether these means use digital tools. The development of digital pedagogy provides an opportunity for teachers to (re)consider how they manage and organize their work, including how and when students begin the learning process, building on their own prior understanding and applying or sharing what is happening in the classroom with other students. The intentional integration of tools and technology gives teachers the opportunity to enhance student dialogue, discourse, and reflection. Classes are not limited in time and can follow any model. Hundreds of digital pedagogical tools have been created to give students autonomy. They improve the administration of academic processes and encourage collaboration. They also facilitate communication between teachers and students. Here are the most popular pedagogical tools of the digital approach (Table 2):

Table 2

Digital Pedagogical Tools to Facilitate Learning

Positive characteristics	Name
An educational platform that offers games with questions. With this pedagogical tool, teachers can create quizzes, discussions, or polls that complement the classroom. The material is designed by the teacher and students answer questions while playing and learning. Kahoot promotes learning through play, which increases student engagement and creates a dynamic, social, and fun learning environment.	Kahoot
A digital educational tool to improve student behavior. Teachers provide students with instant feedback and good lesson planning is rewarded with points. In addition, students develop a more receptive attitude to the learning process. This program provides students with real-time notifications, such as “Bravo David” and “+1”, for collaboration.	ClassDojo
A pedagogical tool that connects teachers and students and is learned in a social network. In it, teachers can create online collaboration groups, administer and provide learning materials, measure student performance, and communicate with parents, among other things.	Edmodo
A digital tool that allows you to create multimedia presentations. It allows you to create multimedia presentations. In addition, it has dynamic slides in which you can integrate interactive maps, links, online quizzes, timelines, and Twitter videos, among other options. During class, teachers can share academic presentations with students that are visually adapted to different devices.	Prezi

A digital whiteboard where participants (students and teachers) contribute by pinning various information. Digital classroom tools such as Padlet motivate students to work together and think as a team. You can customize the background (standard whiteboard, interactive whiteboard, wood, sand, etc.), the layout (grid, flow, or freeform), and control who has access to the table. Padlet

Source: authors' own development.

The trends of globalization, addressed to pedagogy and psychology, will require a total change of teachers for the sake of a changing world. Based on the main trends of globalization and in the context of accelerated updates of needs, values, and knowledge, the preparation of teachers of the future should be carried out in accordance with the following five axes:

1) It is necessary to prepare educated teachers who are aware of interdisciplinarity or have specific knowledge that they can creatively pass on to their students, as they are responsible for their intellectual development. In addition to teaching, there is also the need to be a cultural and ideological teacher;

2) In the context of globalization, teachers are needed who are experienced in the ability to teach new things, with highly variable and increasingly less common features and fragmented knowledge of students;

3) Teachers need to know how to act autonomously, be able to research, innovate, solve problems, or even anticipate them. To this end, it is expected that research-based training, in the context of its practice, will revolutionize basic and in-service teacher education programs in the near future;

4) Teachers who drive social progress will take on new roles that will transform them from consumers of knowledge products to researchers and producers of knowledge that they will reinvest directly for the benefit of their students;

5) Traditional learning environments where teaching careers are prepared will have to adapt their concepts and curricula to the new reality.

The educator of the future is someone who knows how to prove themselves as an employee, a serious partner who works for the success of education, and who does not hesitate to critically examine the meaning of their actions. Education systems are set for profound changes, and teachers will act in accordance with these factors, which will have a direct impact on their responsibilities.

The new type of teacher is a realized person who knows how to communicate, express their desire to help, and who is engaged in the continuous construction of their identity. This is also where the whole issue of teacher well-being comes in because the construction of a positive identity that reflects their responsibility and commitment to the profession is directly dependent on their living conditions. This applies to their remuneration, working conditions, and individual health, as well as the health of their students, social recognition of their profession, etc. However, the well-being of teachers, to varying degrees in different countries, is not always ensured.

An analysis of the perceptions, expectations, and desires of modern educators in the light of digitalization and the challenges of globalization shows that their way of thinking goes far beyond simply teaching a curriculum and transferring knowledge. The possible future of digital pedagogy is rooted in idealized notions of what they would like to see realized. Moreover, these ways and the desire to practice "in trend" are congruent with personal values.

New teaching methods are already being implemented by a large number of teachers in Ukraine. They are rarely advertised because they go against the productivist paradigm that still largely dominates “mass” education. The digital approach allows teachers to exercise their pedagogical freedom without departing from the programs.

Discussion

Digital pedagogy may seem like a complete break with old educational systems. For some, digital or virtual education is a new system that can be a complete replacement for traditional means of knowledge exchange (Díaz-Noguera et al., 2022). At the heart of the digital learning problem, the main challenge is the unsafe options for digital tools.

The new art of learning should be developed on a well-understood synthesis between classical pedagogy and digital pedagogy, in a hybrid mode that combines face-to-face and distance learning. According to Mashrabovich (2022), digitalization cannot be a substitute for traditional education. While the democratic distribution of digital resources, free access to information, and high teaching standards guarantee the quality of education in the current digital space. In the context of globalization, the technical work of to provide innovative tools is rapidly intensifying: useful information adapted to student needs in free access, current digital tools (personal computers, tablets, Wi-Fi, etc.), and cooperation with adapted teachers who are proficient in ICT.

The object of new knowledge becomes interactive. It uses the integration of direct or indirect contact systems and the use of reality modeling tools adapted to learning at the initial level and in continuous learning to virtually solve problems: from the simplest to the most complex (Ricklefs et al., 2023).

The digital approach in pedagogy and psychology brings an important dimension to performance monitoring with attractive tools adapted to the new generation of students. In this aspect, Smith (2021) emphasizes the need for supervision in digital learning. Such supervision and performance monitoring by teachers should take place both face-to-face and remotely. Ukrainian scholars are increasingly talking about a trendy humanized “cyber-education” based on modern Socratic exchange. Despite the mass nature of teaching, this is made possible by individual teacher-student interactivity through ICT (Zhorova et al., 2022).

The transfer of knowledge through digital tools should promote student motivation and autonomy, which carries the meaning of responsible individual and collective emancipation (Rulyansah et al., 2023). However, in this sense, we believe that freedom is not the ability to do what you want. Rather, it consists of learning responsibility and understanding boundaries and norms.

The merit of digital learning is that it has emphasized the need for live human relationships, which are taught by the teacher. The main trend of globalization in education, oddly enough, is the preservation of the position of the teacher, the family institution, and traditions.

Anderson (2020) identifies a culture of innovation as one of the main trends in the education of the future. It is reflected in the fact that learning is open to new ideas, as well as in the promotion of experimentation and acceptance of failure among students. This new pedagogical trend implies a change in the positioning of the learner and the teacher. Atamanyuk et al. (2021) talk about deep learning. This method of teaching involves students in critical thinking, problem-solving, collaboration, and self-study, in conducting projects, and engaging students in research. Learning assessment is expected to change in the coming years. This evolution is due, in particular, to the explosion of digitalization of learning and

distance learning. These tools are expected to improve learning analysis and increase the accuracy of assessment, including by focusing on competencies and facilitating student feedback. In this context, we believe it is advisable to create new learning spaces that are more active and interactive (Cowling et al., 2022). Spaces are becoming increasingly modular, flexible, and connected to support distance learning and collaboration. Many scholars see the future of education in blended learning. Many higher education institutions are now combining face-to-face and distance learning, providing students with online resources prior to face-to-face practical training (Greenhow et al., 2021). Finally, the last trend that emerges from this study is collaborative learning. It is based on 4 key principles: placing the student at the center of the learning process, facilitating interaction, working in groups, and co-developing solutions.

Today, learning means transferring knowledge and verifying that this transfer is effective, but also creating contextualized knowledge (Harahap et al., 2022). According to Köseoğlu et al. (2023), the Internet makes it possible to free the teacher from the task of communicating knowledge objects that can be shared and exchanged between teachers around the world. Scholars emphasize that the teacher is a “master navigator”. He or she organizes the space-time pair: he or she is skilled in synchronous and asynchronous, face-to-face and distance, and relationships. The main advantage of the trends in education is that today's students are shaping the future. In other words, they have open minds and unlimited possibilities (Ryhtä et al., 2020). The challenge of today is to create new rhetoric, in the full sense of the term. It is not about sharply opposite models of learning, which actually coexist as practice shows, but about the conscious acceptance of the degree of displacement and the study of its social and pedagogical issues.

Perhaps it is this shift that creates a major cultural problem for the education system. Learning with digital technologies means leaving scholasticism behind to enter the interactive. It is about being able to transform this dual relationship into a multiple relationship, where the teacher becomes the referent of the relational network formed by the learning chain. It is important to motivate educators to integrate digital technologies into their educational art and to motivate students to approach their learning paths in an active, responsible, and adult way. This is the main challenge of the education of the future.

Conclusions and Implications

Perhaps it is no coincidence that, under the pressure of globalization, the debate on education today is more focused on moral issues. Digital technologies are an important contribution to pedagogy and teaching, but their impact is mechanical and insufficient. There is a need for a global approach to the overall reconfiguration of the education system. This paper analyzes the digital approach in pedagogy and psychology of the future. The survey helped to identify the main ideas of the digital approach to learning: intentionality, collaborative learning and freedom of choice, and transformational teaching; comment on the most popular digital learning tools: Kahoot, ClassDojo, Edmodo, Projeqt, Padlet. The analysis of related literature allowed us to outline the main trends in the education of the future: a culture of innovation, in-depth learning, blended (hybrid) learning, and collaborative learning. The main trend in education in the face of globalization challenges is a paradigm shift that would allow digital technologies to coexist with traditional educational norms. It is not entirely correct to think in terms of replacing one model with another. Rather, there is a need to find the richest and most effective recombination, in a kind of didactic mixture.

Suggestions for Future Research

In terms of the research topic it is necessary to briefly indicate the main prospects for future researches. In structural terms, it is promising analysing the concept of architecture and design of the digital education system of the future. Such a study will reveal the problems of companies functioning in the segment of digitisation of educational content. In the future perspective it will have an extremely high profitability than organisations in the segment of predecessors, i.e. those who introduce digital technologies. Thus, the main focus should be on the first link of the system, i.e. digitisation. Their services and applications need to be tested in pilot projects before being used in the classroom in order to determine their exact impact on student learning. There is a need for evidence-based digital educational interventions. Without this, the education system is entering unknown and untested territory, which will obviously bring waves of uncertainty, scepticism and resistance from all actors in the education system. No less interesting is the analysis of the management and control of the complexity of digital information and a deeper understanding of each element of various digital systems from a dynamic, cross-criteria point of view, an analysis of how they fit together, the possibility of introducing new components at any time and, last but not least, the knowledge about the maintenance of the entire set of processes in a state of efficiency and productivity optimisation.

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