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TRAINING OF PEDAGOGICAL STAFF IN THE CONTEXT OF DIGITAL DIDACTICS

FORMACIÓN DEL PERSONAL PEDAGÓGICO EN EL MARCO DE LA DIDÁCTICA DIGITAL

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ABSTRACT

The study's purpose is to substantiate the key factors, technologies, and digital tools that are instrumental in the training of teaching staff, underpinning the continuous evolution of teacher education in the digital era. The research employs a multidimensional approach, drawing on systemic and activity-based methodology to analyze recent educational research. Additionally, the study explores the globalization of education, recognizing the impact of modern technology on pedagogical practices. The investigation reveals a pivotal shift in teacher training towards continuous education. Notably, educational programs encompass a broad spectrum of specialties within education and pedagogical sciences. Furthermore, the study identifies the fundamental objectives of modern professional teacher training, including enhancing the quality of student education, ensuring continuity in personnel training, adapting curricula to new professional educational standards, providing practical teaching experience, and fostering lifelong learning. A central revelation is the emergence of digital didactics as a distinct discipline within pedagogy, specifically focused on organizing the learning process in today's digital society.

Keywords:

Digital didactics, continuous pedagogical education, flipped learning, blended learning.

RESUMEN

El propósito del estudio es fundamentar los factores, tecnologías y herramientas digitales clave que son fundamentales en la formación del personal docente, sustentando la evolución continua de la formación docente en la era digital. La investigación emplea un enfoque multidimensional, basándose en una metodología sistémica y basada en actividades para analizar la investigación educativa reciente. Además, el estudio explora la globalización de la educación, reconociendo el impacto de la tecnología moderna en las prácticas pedagógicas. La investigación revela un cambio fundamental en la formación docente hacia la educación continua. En particular, los programas educativos abarcan un amplio espectro de especialidades dentro de la educación y las ciencias pedagógicas. Además, el estudio identifica los objetivos fundamentales de la formación docente profesional moderna, incluida la mejora de la calidad de la educación de los estudiantes, la garantía de la continuidad en la formación del personal, la adaptación de los planes de estudio a los nuevos estándares educativos profesionales, la prestación de experiencia docente práctica y el fomento del aprendizaje permanente. Una revelación central es el surgimiento de la didáctica digital como una disciplina distinta dentro de la pedagogía, específicamente enfocada en organizar el proceso de aprendizaje en la sociedad digital actual.

Palabras clave:

Didáctica digital, educación pedagógica continua, flipped learning, blended learning.

INTRODUCTION

Modern requirements for the graduates of pedagogical universities stipulate the obvious need for a new level of interaction between pedagogical universities and educational organizations (Shaposhnikova et al., 2021; Kryucheva y Tolstoukhova, 2023). A special role in the processes of transformation of the educational process belongs to the development of the digital space, contemporary educational technologies, and the needs of society in the training of professionals that fit in the ongoing progress (Blinov et al., 2019). The school is able to choose the best-trained graduates and, if necessary, tap into the research and methodological potential of partner universities in the context of continuous education (Eflova et al., 2023).

In the fast-paced realm of contemporary education, the integration of digital technologies has ushered in a transformative era. Traditional paradigms of teaching and teacher training are undergoing a profound metamorphosis, necessitating a reevaluation of pedagogical strategies and the training of teaching staff (Tolmachev et al., 2022).

Today's pedagogues engage with educational programs that span diverse specialties and encompass a spectrum of training areas under the umbrella of education and pedagogical sciences. As such, the objectives of modern teacher training extend far beyond conventional pedagogy (Stavruk et al., 2023). This evolution aims to bolster the quality of student education across various educational institutions, from higher education to secondary vocational settings, while fostering seamless transitions between pre-professional, vocational, and postgraduate education.

The content of educational programs for teacher training is rigorously redefined to align with new professional educational standards. These standards call for an immersive approach that not only imparts theoretical knowledge but also prioritizes practical experience, equipping teaching staff with the competencies needed to excel in the digital age (Hernández García de Velazco, 2022). An essential component of this transformation is the cultivation of a lifelong learning ethos among educators, rooted in the interconnectedness of all facets of pedagogical knowledge.

As society's digitalization continues redefining the parameters of modern education, a novel discipline, digital didactics, emerges. Positioned at the intersection of pedagogy and technology, digital didactics is the linchpin that enables the seamless organization of the learning process within the contours of our digitally driven society.

Thus, the article aims to provide a comprehensive exploration of the training of teaching staff in the context of digital didactics.

MATERIALS AND METHODS

The primary research methods employed in the study include the systemic and activity approach, theoretical analysis of research over the past few years, and the study of globalization processes in education.

Taking advantage of these methods, the research aims to define the complex interaction between digital didactics and contemporary teacher training. The work focuses on discovering the patterns, problems, and opportunities under the newly developing educational paradigm. Through theoretical analysis and a global outlook, the study seeks to contribute to the ongoing discourse on efficient pedagogical practices in the age of digital technology.

RESULTS AND DISCUSSION

Today's teacher training presupposes continuous learning. This refers to educational programs for the enlarged group of specialties and areas of training in education and pedagogical sciences.

Our investigation established that the objectives of contemporary pedagogical training consist in:

- Improving the quality of student training in higher and secondary vocational education organizations;

- Providing a system of continuous personnel training relying on pre-professional, vocational, and post-graduate education;

- Modifying the content of educational programs in pedagogy and teaching technologies that will enable the fulfillment of new professional educational standards;

- In-depth practical training of teaching staff;

- Ensuring continuity in the training of specialists in secondary and higher pedagogical education.

Digital didactics is seen as a branch of pedagogy and a scientific discipline that deals with the organization of the educational process in the digital society.

The concept of training of pedagogical staff for the education system for the period until 2030 remains the chief foundation for the work of educational organizations and the prospect of their improvement in the russian federation (government of the russian federation, 2022). The federal state statistics service reports that in 2020, pedagogical training programs were realized by 229 higher education institutions, of which 36 were private.

A total of 637,100 people were trained under teacher training programs, including 446,400 under higher education

programs and 190,700 under secondary vocational education programs.

Additional professional education programs in pedagogy were attended by 1,387,900 people.

The average unified state exam score of applicants to higher education organizations implementing educational programs of teacher training in 2020 was 68.8 points (to compare, the average 2017 score was 66.7 points).

This rate of pedagogical staff training allows for age rotation, the estimated value of which, according to 2020 data, is 62,800 teachers annually.

The cornerstone factors influencing the construction of a modern digital educational process include:

- New information and communications technology (ict) and digital environments, which in the theoretical, pedagogical sense constitutes a learning tool;

- Progressive development of science, technology, and economy, which requires appropriately professionally trained personnel;

- The digital generation – a new generation of learners with distinctive socio-psychological characteristics and digital competencies;

- Training of pedagogical staff to provide a state-of-the-art educational process in compliance with relevant educational standards.

It is important to distinguish the technologies utilized in vocational education and training. First, there is universal ict, such as social networks, office applications, graphic editors, internet browsers, telecommunications tools, augmented reality, etc. The second category is pedagogical technologies that assume the use of ict or rely on it (role and business games). The third group refers to production technologies (including digital technologies) that provide for the development of necessary professional competencies, knowledge, skills, and abilities in students.

Characteristically, digital technologies possess certain didactic properties (interactivity, multimedia, hypertextuality, personalization, subculturalism, etc.) That enable their application in building an educational process focused on accounting for the specific features of digital society.

According to Esser (2019), president of the german federal institute for vocational education and training, the digitalization of the educational process constitutes:

- Change and reinterpretation of the present educational process;

- Optimal alternation of virtual tools and real production processes in vocational education;

- A transition from induction to deduction in the logic of learning;

- Development of flexibility with respect to academic schedule and organizational structure through the use of new teaching methods and the organization of learning activities;

- motivating students' learning activity and autonomy through rich virtual reality to support their readiness for more complex tasks (in a digital environment, work ceases to be cyclical and becomes a continuous process; there is a need for an integrated understanding of the entire process);

- Digital technologies as a means of boosting the attractiveness of professions and vacancies in the labor market.

The challenges facing pedagogy professionals are centered around modern digital tools that allow instructors to make classes engaging and interesting for students (Pivneva et al., 2023). However, pedagogy as a science has yet to answer the topical question about the proper volume and cases in which these technologies are to be used. Successful implementation of innovations is only possible if favorable conditions are provided for the development of teachers' creative thinking and systematic professional development, as well as with appropriate logistical and technical support.

Digital technologies of distance learning include dialogue simulators, massive open online courses (moocs), animated infographics, game-based learning and gamification, visualization and augmented reality, and more (Azitov et al., 2021; Ivashkina et al., 2022).

Furthermore, digital didactics are associated with blended learning as an educational model that combines traditional approaches with online learning.

The basic principles of blended learning are:

1. Personalization: the learner decides for themselves (to some degree) where and what to study;

2. Complete assimilation: before moving on to new material, students need to fully master the knowledge from previous sections necessary for it;

3. High achievement environment: each learner has a high goal to which they aspire, and their learning activity represents a conscious movement towards this goal along a defined route;

4. Personal responsibility: students realize that they are responsible for their own learning choices and outcomes.

As an example of digital didactics, we can examine the widely popular model of flipped (inverted) learning as

one of the methodological models of blended learning (Babintseva et al., 2023).

The standard inverted classroom technology is seen as an opportunity for students to study new material in advance and do homework by watching video lectures and reading educational materials on the topic of the next lesson. In class, they practice what they have learned, and the teacher has more time for practice and consolidation of the topic. There are many possible forms of work: discussion-oriented, demonstration-oriented, group-oriented, or virtual flipped classroom. Next, the faux flipped classroom technology is ideal for learners to whom any homework may not be acceptable. Under this model, students can watch lecture videos in class, at their own pace, while the teacher goes from student to student offering individual assistance.

The digitalization of education changes the vector of development of modern education altogether. The new type of educational reality as learning within real projects or organizations entails a new sphere for the implementation of solutions, which assumes the involvement of facilitators (moderators) that lead work on projects, as well as project supervisors (in business, non-profit organizations, and the public sector).

The new model of digitalization of education can only succeed with a system of interrelated technological solutions providing for a more productive and rational performance of the functions of the industrial education system. Each student in the new educational sphere will be surrounded by infrastructure on the supply side, ensuring the work of educational institutions and independent providers. The core of this infrastructure, as we see it, consists of four elements:

1. Educational trajectory management interface: a system in which the student-teacher (and their live or automated mentors) can set goals and form or modify a planned set of educational programs, as well as track their progress in these programs.

2. Digital library environments or (semantic) search engines for independent providers, where individual courses (like moocs) or entire course programs, as well as educational simulators, can be selected.

3. Assessment and certification systems implemented in a social network to provide an externally validated assessment of knowledge and skills.

4. Achievement fixation tools (e-portfolio, a system for recording the current competence profile with indexing of competence manifestation precedents, etc.).

It has become evident that modern teacher training extends far beyond the confines of traditional pedagogical models. It embraces a dynamic process of continuous education, wherein educators are equipped with the competencies to navigate the complexities of a digital society. This shift underscores the imperative for pedagogical institutions to adapt and evolve, serving as hubs of innovation and professional development.

Digital didactics emerged as a linchpin in this transformation, bridging the gap between conventional teaching methods and the digital competencies demanded by the 21st-century learner. By encapsulating pedagogy within a digital framework, educators can personalize learning experiences, enhance student engagement, and foster a culture of independent and self-directed learning. The advent of blended learning models, such as the flipped classroom, exemplifies the symbiotic relationship between traditional and digital pedagogies, ushering in a new era of educational effectiveness.

The study further reveals the pivotal role of digital technologies in shaping pedagogical landscapes. It highlights the need for educators to harness the didactic properties of digital tools, including interactivity, multimedia, and hypertextuality, to create immersive and tailored learning environments. As a result, the education process becomes more responsive to the needs and characteristics of the digital generation, cultivating a generation of learners equipped with digital competencies that transcend the confines of the classroom.

CONCLUSIONS

This research highlights the symbiotic relationship between digital didactics and contemporary teacher training. It underscores that the fusion of digital technologies and pedagogical principles has the potential to revolutionize education, fostering a generation of digitally literate and self-driven learners. Moreover, it reinforces the vital role of pedagogical institutions as catalysts for innovation and lifelong learning.

BIBLIOGRAPHIC REFERENCES

Azitov, r. S., Kulik, A. D., Bazhin, G. M., Golubeva, T. I., Golovyashkina, M. A., & Yushchenko, N. S. (2021). O impacto dos agregadores de mooc no desenvolvimento da educação em línguas. *Revista entrelinguas, 7*(esp.4). https://periodicos.fclar.unesp.br/entre-linguas/article/view/15613

Babintseva, E., Kartseva, E., Spynu, L., & Tavberidze, D. (2023). Flipped classroom as an innovative technology for blended learning of professional english in higher education institutions. Revista on line de política e gestão educacional, 27. DOI:10.22633/rpge.v27i00.18526

Blinov, V.I., Sergeev, I.S., & Esenina, E. I. (2019). *On basic ideas of the didactic concept of digital professional education and training*. Pero publishing house.

Eflova, M., Shamsutdinova, I., & Maximova, O. (2023). Transforming the status and role of the teacher at the institute of higher education in the digital educational environment. *Conhecimento & diversidade, 15*(37), 162–170.

Esser, F.H. (2019). *Digitalization and ai are conductive to increasing the attractiveness of vocational education and training*. Vet trends.

Hernández García De Velazco, J. J. (2022). Sociedades del conocimiento y ciencia abierta en la nueva normalidad. *Jurídicas cuc, 18*(1), 1–4.

Ivashkina, T. A., Sidorenko, V. N., & Sukhova, E. I. (2022). Impact of mooc on increasing student interest in the learning process in the context of blended learning. Revista tempos e espaços em educação, 15(34), e17321. https://www.redalyc.org/journal/5702/570272314019/html/#:~:text=Analysis%20of%20the%20results%20of,intend%20to%20use%20MOOCs%20to

Kryucheva, Y., & Tolstoukhova, I. (2023). *Modern ways of learning as a means of enhancing the cognitive activity of students*. Nuances: Estudos Sobre Educação, 34.

Government Of The Russian Federation. (2022). On approval of the concept of training of pedagogical staff for the education system for the period until 2030. Order 1688-r. Https://www.consultant.ru/document/cons_doc_law_420869/

Pivneva, S., Chernova, O., Abalyan, Z., Shangaraeva, L., Rubannikova, I., & Litvinov, A. (2023). Raising the level of motivation of economics students for studying english using the myenglishlab blended learning platform. *Revista Conrado, 19*(90), 270-276.

Shaposhnikova, t. D., naydenova, n. N., sukhin, i. G., vorontsova, e. A., & myasnikov, v. A. (2021). Modern pedagogical education in the conditions of blended learning: foreign experience. *Revista on line de política e gestão educacional, 25*(esp. 5), 3322–3334.

Stavruk, m., beloglazova, l., polozhentseva, i., shapauov, a., safonova, e., orekhova, o., rets, n., malukina, g., abramova, o., and godzinevskaya, s. (2023). Using smart devices in forming the foreign language competency of economics students. *Journal of language teaching and research, 14*(5), 1181–1188.

Tolmachev, m., korotaeva, i., zharov, a., & beloglazova, l. (2022). Development of students' digital competence when using the "oracle" electronic portal. European journal of contemporary education, 11(4), 1261–1270.