SECTION: PEDAGOGY, PHILOLOGY AND LINGUISTICS

TEACHER AVATAR AS A KEY ELEMENT OF PERSONALIZED LEARNING IN A DIGITAL UNIVERSITY

Bobro Natalia
Ph.D, Doctor of Philosophy,
Director of the digital department of the European University,
director of the "NooLab & AI" scientific
laboratory of the European University,
European University, Ukraine, Switzerland

Education plays a key role in the formation of a personality and the development of the intellectual potential of society. The quality and level of the educational system determine not only the competitiveness of an individual in the labor market, but also the position of the state in the global world. The educational system, as a subsystem of society, performs the function of cultural transmission and self-reproduction of social experience, adapting it to new conditions. In this context, the issue of compliance of educational models with modern challenges, the need to move from universalized to personalized approaches to education, is of particular relevance.

The idea of differentiating learning, adapting content and methods to the cognitive characteristics and interests of students, is the basis of the concept of a personalized digital environment [1; 2]. This approach ensures not only effective learning, but also contributes to the formation of an autonomous, critical thinking, and responsible citizen. It is through the prism of personalization that the potential of using intelligent digital avatars of teachers as knowledge conductors, moderators of educational processes, and communicative mediators between complex information systems and humans is revealed.

In the context of technological transformations and the growing role of artificial intelligence, education is approaching the stage of conditional "singularity" - a qualitative break that marks the emergence of new forms of interaction between the subjects of the educational process. The singularity in education is understood as the point after which the traditional pedagogical system loses its monopoly on the transfer of knowledge [3, p.6]. Intelligent systems are capable of storing and processing large amounts of information, generating educational content, conducting assessments, and adapting materials to the student's learning level and style.

The role of the teacher is gradually changing: from a traditional source of knowledge to a mentor, project-based learning coordinator, and facilitator of students' cognitive activity. They act not only as a participant in the educational process but also as avatar - a digital representative endowed with functionality, communication style, and pedagogical logic. Virtual avatars of teachers integrated into the digital university

space can participate in supporting learning, supporting student reflection, and providing continuous access to knowledge within an individual trajectory.

It is especially important that the current generation of students function organically in the digital environment. They are able to find information on their own, analyze sources, and formulate requests for educational content. This changes the logic of interaction with the teacher, who no longer only transmits knowledge but acts as a partner in cognitive development [4;5]. The introduction of teacher avatars into the virtual educational environment allows for a continuous, adaptive, and more inclusive learning process.

Technology is an integral part of the modern work environment, a tool for achieving goals, optimizing processes, and ensuring effective interaction [6, p.47]. Similarly, the higher education system should actively integrate educational technologies as a tool for digital transformation, which allows adapting the educational process to the needs of a new generation of students [7, p.44]. We live in the age of high technology, which is constantly rethinking itself, forming new educational paradigms.

The concept of EdTech covers a set of digital solutions aimed at improving the quality, convenience, and efficiency of the educational process [8, p.7]. These include online courses, educational platforms, learning management systems, adaptive simulators, and technologies for content personalization. EdTech not only simplifies routine processes but also opens up the possibility of deep personalization of learning. This sector is actively developing: according to forecasts, the global EdTech market could reach more than $250 billion by the end of 2025 and more than $700 billion by 2030, which demonstrates its strategic role in the global transformation of education [9].

National strategies for the digitalization of education (including policies supporting STEM disciplines - science, technology, engineering, and mathematics - in leading countries) demonstrate the importance of a comprehensive transformation of the content and forms of education. Integration of the STEM approach into educational practice allows for the formation of interdisciplinary thinking, developing analytical and research skills focused on the challenges of the future.

The newest vector of EdTech development is educational technologies based on metaverses and neurocollaboration, combining virtual reality, artificial intelligence, and cognitive analytics. It is about creating avatars of teachers and students who function in the virtual learning space as full participants in the educational process. A teacher's avatar is a digital agent capable of communicating, interpreting content, evaluating results, and moderating the learning environment based on individual student characteristics [8, p.9].

The use of such avatars in the university's metaverse allows moving from patterned learning to a dynamic, interactive, and flexible educational environment. Neuroeducational technologies allow students not only to acquire knowledge but also to model their own educational trajectories, create individual training courses, and engage in simulation practices and research laboratories.

Digital avatars and neurocollaboration open up new horizons for personalized learning: students can choose the pace, style, and content of educational interaction,

receiving recommendations based on their cognitive profile. Virtual environments provide immersion in complex situations and simulations that are not available in traditional classroom education. In this context, the teacher is no longer the only source of knowledge. Their role is transformed into a mentoring, facilitating, and project-based one. The teacher's avatar acts as a conductor between intelligent systems and students, helping them navigate complex information flows and make learning decisions.

Within the concept of personalized digital learning, a special role is played by the system of interaction between students, teachers, and their digital representatives (avatars) in the metaverse environment of the digital university (Figure 1).

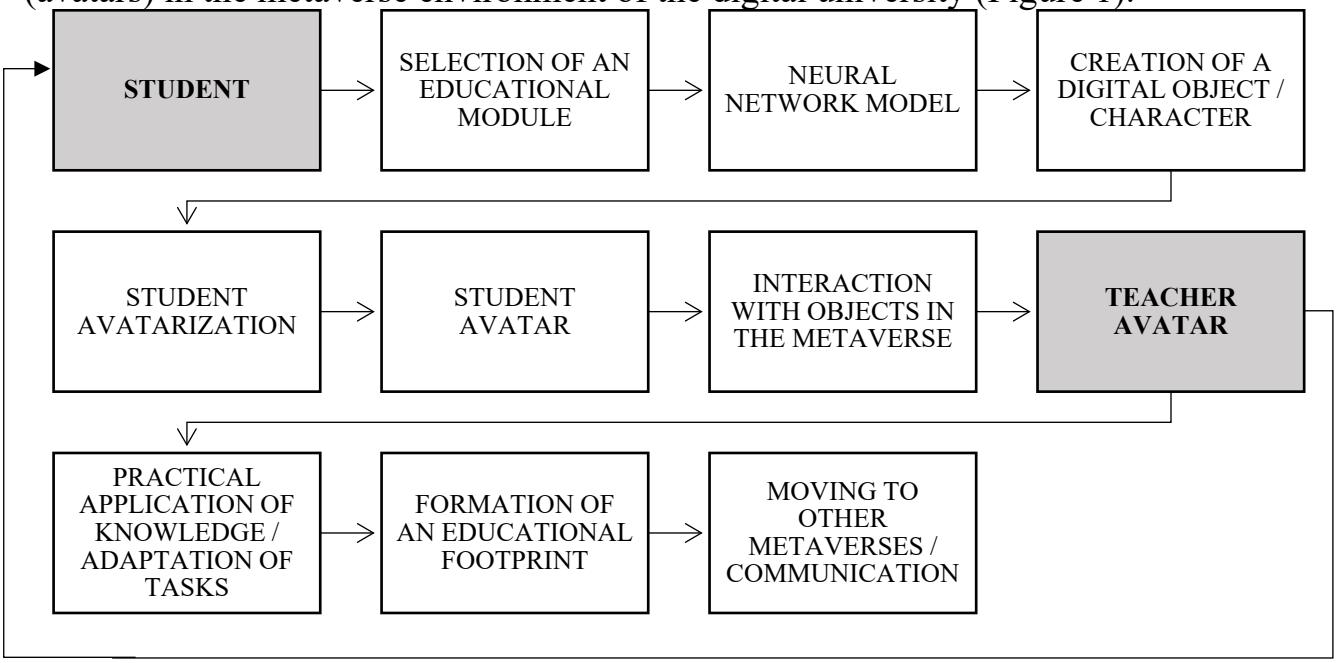


Figure 1. Scheme of interaction between students, teachers, and their avatars in the metaverse of a digital university

Such a model involves the use of neural network models that create individualized learning objects, and also provides mechanisms for protection, ethical interaction, and confidentiality. The main advantages and risks of implementing avatarization in a digital university are shown in Table 1.

Table 1. The main advantages and risks of implementing avatarization in a digital university

Advantages	Risks
1	2
Individualization of educational trajectories	Possibility of violation of student data confidentiality
Round-the-clock access to knowledge through a digital avatar	Technical failures that may complicate the educational process
Reducing cognitive load through adaptive content presentation	Dependence on IT infrastructure and instability of the Internet connection
Expanding forms of communication and interaction	Psychological discomfort due to interaction with virtual agents
Possibility of using AI analytics to predict educational outcomes	Insufficient regulatory framework to regulate ethical aspects of interaction with avatars

Actualization of the concept of the teacher's avatar in the context of digital transformation of higher education requires a deep theoretical and methodological rethinking of the role of the subjects of the educational process in terms of interaction with intelligent information and communication systems. The teacher's avatar appears not as a copy of an individual, but as a functionally autonomous digital agent capable of providing context-sensitive, adaptive, cognitively relevant support for educational activities. Its activities are based on the principles of personally oriented learning, pedagogical dialog, interactivity, and continuous formative assessment. This approach allows preserving pedagogical integrity in situations where traditional channels of knowledge transfer give way to technologically modulated educational environments.

It is worth noting that the university as a social institution is already facing the need to institutionalize new forms of educational interaction, where digital avatars of teachers play the role of not only interfaces for access to knowledge, but also mechanisms for supporting individualized educational trajectories. This form of pedagogical presence allows implementing the principles of flexibility, personalization, autonomy, and lifelong learning within the virtual form of education. At the same time, teacher avatarization involves not only technological modeling of the educational process but also a value-based rethinking of pedagogical interaction, which necessitates the development of new regulatory and ethical standards, pedagogical strategies, and management structures in a digital university.

References

1. Kortemeyer, G., Dittmann-Domenichini, N. Merki, C., Attending lectures in person, hybrid or online at a technical university: how do students choose after the pandemic, and what about the outcome?. Discover Education, 2025, 4(1), p.94. DOI: https://doi.org/10.1007/s44217-025-00500-y
2. Kubiv S.I., Bobro N.S., Lopushnyak G.S., Lenher Y.I., Kozhyna A. Innovative potential in European countries: analytical and legal aspects. International Journal of Economics and Business Administration, 8(2), pp. 250–264. DOI: https://doi.org/10.35808/ijeba/457.
3. Lopuschnyak, H. N. Chala, O. Poplavska. Socio-economic determinants of the ecosystem of sustainable development of Ukraine. IOP Conf. Series: Earth and Environmental Science, 2021. 1. C.1-9. DOI: https://doi.org/10.1088/1755-1315/915/1/012019.
4. Kortemeyer, G., Nöhl, J. . Assessing confidence in AI-assisted grading of physics exams through psychometrics: An exploratory study. Physical Review Physics Education Research, 2025. 21(1), p.010136. DOI: https://doi.org/10.1103/PhysRevPhysEducRes.21.010136
5. Krap, A., Bataiev, S., Bobro, N., Kozub, V., Hlevatska, N. Examination of digital advancements: Their influence on contemporary corporate management methods and approaches. Multidisciplinary Reviews, 2024. 7(26). DOI: https://doi.org/10.31893/multirev.2024spe026
6. Bobro N., Hyshchuk R., Strunhar A., Bukovskyi O., Alekseiko V. Exploring the role of AI in shaping future marketing strategies: evaluations and outlooks. Amazonia

Investiga. 2024. Vol. 13(80). P. 43–53. DOI: https://doi.org/10.34069/AI/2024.80.08.4.
7. Lysenko S., Bobro N., Korsunova K., Vasylchyshyn O., Tatarchenko Y. The Role of Artificial Intelligence in Cybersecurity: Automation of Protection and Detection of Threats. Economic Affairs. 2024. Vol. 69(Special Issue). P. 43–51. DOI: https://doi.org/10.46852/0424-2513.1.2024.6.
8. Bobro N. Use of digital avatars in the learning process as a factor of economic efficiency. International Scientific Conference "Economic Transformation in the Context of Global Challenges: Current Issues": Conference Proceedings (February 7–8, 2025, Klaipeda, Lithuania). P. 7–10. DOI: https://doi.org/10.30525/978-9934-26-529-7-3.
9. Grand View Research. Education Technology Market Size, Share & Trends Analysis Report By Sector, By End-user, By Type, By Region, And Segment Forecasts, 2024 – 2030. Grandviewresearch.com. 2024. URL: https://www.grandviewresearch.com/industry-analysis/education-technology-market (дата звернення: 14.07.2025).

ВИХОВАННЯ ГУМАНІЗМУ У ДІТЕЙ ДОШКІЛЬНОГО ВІКУ

Холтобіна Олександра Устинівна
кандидат педагогічних наук,
доцент, доцент кафедри теорії, технологій
і методик дошкільної освіти
Харківський національний педагогічний
університет імені Г.С. Сковороди, Україна

Процес виховання у дітей дошкільного віку гуманізму є центральним питанням педагогіки та психології. Сьогодні з упровадженням нових Державних стандартів у дошкільній, початковій, середній, професійній та вищій освіті відбуваються зміни, які тісно пов'язані з використанням нових інформаційних технологій. Зараз кожна дитина має вільний доступ до всесвітньо відомої мережі Інтернет, де багато представлено матеріалів за різноманітними напрямами. Батьки та дорослі мають уважно ставитися та аналізувати інформацію, яка цікавить дітей у мережі Інтернет. Треба пам'ятати про те, що в інформаційному просторі є сайти, які не відповідають вихованню гуманістичних почуттів, негативно впливають на моральний, духовний стан дитини.

Розглянемо такі поняття, як «гуманізм», «гуманне ставлення», «гуманізація», «гуманність». Поняття сутності «гуманізму» доводиться в науковій літературі. В українському тлумачному словнику гуманізм трактується як ставлення до людини, яке засноване на турботі, поваги до гідності, людяності [2].

Л. Морозова трактує поняття «гуманізм» як новий світогляд, у центрі якого визначається людина понад іншими матеріальними цінностями [3].