PEDAGOGICAL MEDIATION IN AN E-LEARNING ENVIRONMENT AS A FACTOR IN BROADENING STUDENTS' SCIENTIFIC WORLDVIEW

Abrorbek Ravshanbekovich Qayumov
2nd-year Master's Student, Turon University, Andijan Branch
E-mail: qayumovabrorbek@gmail.com
https://doi.org/10.5281/zenodo.22726278

Annotation. The thesis analyses the teacher's function of pedagogical mediation in the e-learning environment with a view to broadening students' scientific worldview. Social networks are considered an informal yet influential layer of the e-learning environment, while the recommendation algorithm is viewed as a "second mediator" competing with the teacher. Three forms of mediation are proposed.

Keywords: e-pedagogy, pedagogical mediation, social networks, scientific worldview, digital learning environment, university student.

The digitalization of education in Uzbekistan has been elevated to the level of state policy: the "Digital Uzbekistan – 2030" Strategy defines the educational system as one of the pivotal trajectories of digital transformation [1]. While infrastructural challenges are being addressed incrementally, the core pedagogical question remains open: how should instruction be delivered within a digital landscape?

In higher education practice, electronic pedagogy is often equated merely with distance-learning platforms, digital textbooks, and online testing. In reality, however, students acquire the vast majority of information not from these systems, but from social media networks. This discrepancy between the formal electronic environment and the students' actual information ecosystem constitutes the core of the problem. The objective of this thesis is to provide a theoretical foundation for the instructor's pedagogical mediation function in broadening students' scientific worldview within the context of social media networks.

In Uzbek pedagogy, the approach to digital tools has primarily evolved through the tradition of educational technology. N. A. Muslimov and co-authors interpret innovative educational technologies as a goal-oriented, pre-designed process [2]. While this interpretation functions effectively within closed platforms, boundaries blur within network environments: students encounter content daily that was not planned by the instructor. In this regard, F. U. Anarbayeva's emphasis on the distinct significance of electronic teaching methodology [3] is noteworthy—the issue lies not in the technology itself, but in the instructional methodology. We argue that the time has come to shift methodology into open network environments.

According to L. S. Vygotsky's theory, higher psychological functions are formed through cultural tools in collaboration with a more knowledgeable partner [4]. Thus, a digital tool does not foster development on its own; what transforms it into a developmental instrument is mediation. Today, however, a "second mediator" has emerged between the student and information: the recommendation algorithm. It also curates content, but its objective is capturing attention rather than serving pedagogical aims. The "Community of Inquiry" framework by D. R. Garrison and co-authors highlights what is decisive in this competition: meaningful learning in an online environment requires cognitive and social presence alongside teaching presence [5]. In the absence of teaching presence, academic inquiry deteriorates into casual conversation, and learning devolves into passive consumption.

The issue also encompasses a socio-psychological dimension. V. M. Karimova characterizes a reference group as one whose norms and values an individual adopts as a personal standard [6]. For contemporary students, such a reference group is often an online community. If rigorous evidence is valued within that community, the student pursues evidence; if sensationalized headlines are prized, the student gravitates toward sensationalism. In Uzbek scholarly literature, the digital environment has largely been examined through the lenses of literacy and protection: B. S. Abdullayeva and co-authors

© 2026 International Conference on Artificial Intelligence and Applications . All Rights Reserved.

systematized media literacy at the textbook level [7], while A. Tulepov emphasized defense against internet threats [8]. In both approaches, the student is positioned as a protected subject or a consumer. The true role of mediation, however, is to elevate the student to the position of an evaluator.

The fact that this evaluative stance is a trainable skill is corroborated by the research of S. Wineburg and S. McGrew: professional fact-checkers evaluated unfamiliar websites not by reading them through to the end, but by verifying what external sources stated about them, whereas students placed greater trust in a page's superficial aesthetic appearance [9]. The distinction lies not in the volume of knowledge, but in the evaluation procedure. Based on this, three forms of mediation are proposed:

- **Curation:** The instructor provides analytical commentary regarding sources and limitations for each piece of material shared on the course channel.
- **Verification assignments:** Independent study modules incorporate tasks structured around "identifying the evidential basis of a claim."
- **Role reversal:** The student crafts a popular-science publication, which peers then critically evaluate based on verified sources.

The array of technologies utilized to implement electronic pedagogy in practice is categorized into several primary groups:

1. Technologies for organizing and managing the educational process (LMS, MOOCs, microlearning);
2. Technologies for content creation and presentation (multimedia, interactive resources, simulations);
3. Communication and collaboration technologies (videoconferencing, discussion forums, collaborative tools);
4. Assessment and monitoring technologies (automated testing, learning analytics, plagiarism detection);
5. Artificial intelligence and adaptive technologies (AI tutoring, chatbots, personalized platforms).

These technologies operate as an integrated, mutually reinforcing system in the practical execution of e-pedagogy.

Among the most widely adopted technologies for implementing electronic pedagogy are Learning Management Systems (LMS). South African researcher C. Mpungose, in a 2020 study titled "Postgraduate Students' Experiences on the Use of Moodle and Canvas Learning Management System" published in Technology, Knowledge and Learning, articulated the following key empirical insight:

"The effectiveness of Moodle and Canvas LMS platforms is determined not by their technical capabilities, but by the didactic strategies through which instructors deploy them. Research findings indicate that students predominantly utilize the LMS for downloading course materials and participating in discussion forums, thereby failing to leverage the system's comprehensive pedagogical potential" [50, p. 8].

Mpungose's conclusion underscores the paramount importance of didactic design when utilizing LMS platforms in e-pedagogy, providing empirical evidence that a technical instrument does not automatically generate instructional efficiency. This finding fully aligns with A. W. Bates's thesis—analyzed in Chapter I—positing pedagogical design as the decisive factor.

Table 1. Comparative Analysis of Major LMS Platforms

(Compiled based on diverse international studies)

Criterion	Moodle	Canvas	Google Classroom
Licensing	Open-source (Free)	Commercial	Free (Google

© 2026 International Conference on Artificial Intelligence and Applications . All Rights Reserved.

Criterion	Moodle	Canvas	Google Classroom
		(Paid)	Workspace tier)
Flexibility / Customization	High (Extensive plugin ecosystem)	Moderate (Platform constraints)	Low
Pedagogical Tools	Advanced (Analytics, gamification)	Advanced (Modern UI/UX)	Limited
Learning Curve	High	Moderate	Low
Localization	Straightforward (Open-source translation)	Limited	Limited
Adoption in Uzbekistan	Extensive (Higher education institutions)	Limited	Secondary schools

LMS platforms serve as the central technological backbone of electronic pedagogy. They enable instructors to automate tasks such as hosting course resources, distributing assignments, evaluating and monitoring academic progress, and maintaining student interaction. Within the educational system of Uzbekistan, national platforms such as HEMIS, Kundalik.com, and eduportal.uz perform these functional roles.

A prominent operational model in electronic pedagogy is the flipped classroom approach. Regarding the empirical efficacy of this model, B. J. Bredow, P. J. Roehling, A. J. Knorp, and A. M. Sweet, in their 2021 meta-analysis published in the Review of Educational Research titled "To Flip or Not To Flip? A Meta-Analysis of the Efficacy of Flipped Learning in Higher Education," presented this vital empirical conclusion:

"Results of our meta-analysis indicate that the flipped classroom approach exerts a positive effect on student academic performance compared to traditional lecture-discussion formats (overall effect size $g = 0.50$). This efficacy holds consistent across various academic disciplines and instructional levels, though the most pronounced gains are observed in higher education" [51, p. 13].

The authors' meta-analysis provides empirical corroboration for the pedagogical value of the flipped classroom model in e-pedagogy. This approach links directly with D. R. Garrison and H. Kanuka's blended learning framework examined in Chapter I, demonstrating its viability as an actionable didactic mechanism.

At the current stage of civilizational development, the educational sector stands out as one of the domains most profoundly transformed by digitalization. Information and communication technologies continue to evolve rapidly, fundamentally restructuring the organizational structures, curricula, methods, and instruments of the learning process. Under these conditions, an in-depth scientific examination of the pedagogical affordances of e-pedagogy remains essential for elevating instructional quality and attaining competency-based educational outcomes.

The effectiveness of an e-learning environment is governed not by its level of technological sophistication, but by the quality of pedagogical mediation. Social media platforms do not automatically broaden students' scientific worldviews; they achieve this solely through purposeful instructional design. The instructor must transition from a mere transmitter of pre-packaged facts into a guiding mentor who equips learners with verifiable criteria for evaluating knowledge. Empirically

© 2026 International Conference on Artificial Intelligence and Applications . All Rights Reserved.

validating these proposed mediation modalities through pilot experimental coursework constitutes the next phase of this research.

REFERENCES

1. Decree of the President of the Republic of Uzbekistan No. UP-6079 of October 5, 2020, "On approval of the 'Digital Uzbekistan – 2030' Strategy and measures for its effective implementation." URL: https://lex.uz/docs/-5030957 (accessed: September 10, 2026).
2. Muslimov, N. A., Usmonboyeva, M. H., Sayfurov, D. M., & To‘rayev, A. B. (2015). Innovatsion ta’lim texnologiyalari [Innovative educational technologies]. Tashkent: Sharq.
3. Anarbayeva, F. U. (2021). Elektron ta’lim metodikasining ahamiyati [The importance of e-learning methodology]. Oriental Renaissance: Innovative, Educational, Natural and Social Sciences, 1022–1027.
4. Vygotsky, L. S. (2004). Psikhologiya razvitiya rebyonka [Child developmental psychology]. Moscow: Eksmo-Press.
5. Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. The Internet and Higher Education, 2(2–3), 87–105.
6. Karimova, V. M. (2012). Ijtimoiy psixologiya: darslik [Social psychology: Textbook]. Tashkent: Fan va texnologiya.
7. Abdullayeva, B. S., Ro‘ziyev, Y. Z., & Ismoilova, K. V. (2024). Mediasavodxonlik va axborot madaniyati: darslik [Media literacy and information culture: Textbook]. Tashkent: O‘zbekiston.
8. Tulepov, A. (2015). Internetdagi tahdidlardan himoya [Protection from internet threats]. Tashkent: Movarounnahr.
9. Wineburg, S., & McGrew, S. (2019). Lateral reading and the nature of expertise: Reading less and learning more when evaluating digital information. Teachers College Record, 121(11), 1–40.

© 2026 International Conference on Artificial Intelligence and Applications . All Rights Reserved.