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# Exploring Student Teachers' Perceptions of Artificial Intelligence Adoption: Fears and Hopes

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A B S T R A C T

The integration of Artificial Intelligence (AI) into the teaching–learning process has brought about significant transformations. Student teachers' perceptions toward AI-based educational technologies can profoundly influence their future implementation of these tools and the learning outcomes of their students. Therefore, examining their views on AI adoption is essential. This qualitative, exploratory study aimed to analyze the perceptions of student teachers regarding AI adoption. The target population consisted of student teachers at Farhangian University in Zanjan Province. Through purposive sampling, 21 participants were interviewed until data saturation was achieved. The interviews were analyzed using thematic analysis, resulting in the identification of 11 main themes. Data trustworthiness was ensured via participant and peer review. A total of 120 initial codes were identified-61 related to fears and 59 to hopes concerning AI adoption. The extracted fears were categorized into six themes: teaching–learning domain, ethical issues, individual skills and characteristics, higher authorities, financial–infrastructural issues, and digital divide. The hopes were categorized into five themes: teaching–learning domains, management, planning, organization, and supervision. Consequently, AI possesses transformative potential for the educational system and can fulfill multiple roles that simultaneously evoke hope and apprehension among student teachers. Therefore, the findings can assist policymakers, educational planners, and Farhangian University in preparing future teachers for intelligent, critical, and human-centered interaction with emerging technologies by designing targeted training courses, establishing ethical frameworks, and providing practical learning environments.

***Keywords:*** *Artificial Intelligence, Student Teachers, Emerging Technologies, Hopes, Fears, Thematic Analysis.*

## Introduction

In the contemporary world, emerging technologies—particularly Artificial Intelligence (AI)—have become key drivers of transformation in teaching and learning processes. Universities, especially Farhangian University, which plays a central role in training future teachers, have been increasingly influenced by these technological shifts. Student Teachers, as the next generation of educators, play a decisive role in either embracing or resisting emerging technologies. They recognize the potential of AI to enhance teaching quality, personalize learning, and reduce workload, while simultaneously expressing concerns about job displacement, diminished human interaction, and insufficient preparedness to work with such technologies (Goyibova et al., 2025). This duality in perception highlights the urgent need to revise teacher education programs by incorporating essential topics such as digital ethics, critical analysis of technology, and AI-integrated instructional design. Accordingly, the present study adopts the Technology Acceptance Model (TAM) (Davis, 1989) as its theoretical framework to examine these dual perspectives. The model, which is built upon two key constructs—perceived usefulness and perceived ease of use—is employed here not only as an indicator of technology acceptance but also as a conceptual lens through which the hopes (e.g., enhanced efficiency and facilitation of learning) and fears (e.g., human replacement and skill inadequacy) of student teachers are interpreted. Hence, TAM functions as an analytical framework for exploring the psychological duality of hope and fear in response to transformative technologies, offering a deeper understanding of the cognitive and ethical dimensions of technology acceptance in teacher education.

In this regard, the study aims to explore Student Teachers' perceptions of AI acceptance. Specifically, it seeks to answer the following research questions:

1. What are the hopes of Student Teachers regarding the acceptance of AI, based on their perceptions of usefulness and ease of use?

How do Student Teachers perceive and explain their fears and concerns about AI acceptance?

## Methodology

This study is applied in purpose, qualitative in approach, and conducted through an exploratory design. The target population comprised all Student Teachers at Farhangian University, Zanjan Province, during the 2023–2024 academic year. Using purposeful criterion sampling, 21 Student Teachers were selected based on the following criteria: being enrolled in a teacher education program, having at least one year of relevant academic or teaching experience, possessing basic familiarity with emerging educational technologies, and willingness to participate and share authentic experiences. Data were collected through semi-structured, in-depth interviews. The interview guide was designed based on a review of the literature, identification of research gaps, and expert consultation in educational technology and teacher education. The interviews were conducted both in person and via telephone, each lasting between 30 and 60 minutes. Data analysis followed the six-step thematic analysis process (Braun & Clarke, 2006). To ensure the trustworthiness of findings, member checking (participant validation) and peer debriefing were employed.

## Findings

After analyzing the interviews, a total of 120 codes were identified: 61 codes represented Student Teachers' fears about AI acceptance, while 59 codes reflected their hopes.

The fears were categorized into six overarching themes, including: Concerns related to the teaching–learning process, Ethical issues, Individual skills and competencies, Institutional and policy-related challenges, Financial and infrastructural limitations, and Digital and social inequality.

The hopes, on the other hand, were classified into five overarching themes, covering: Teaching–learning enhancement, Management and administration, Planning and curriculum development, Organization and coordination, and Supervision and evaluation.

## Conclusion

Based on the findings, several practical and policy-oriented recommendations are proposed: In response to Student Teachers' concerns about AI integration in teaching and learning, the establishment of "Smart Learning Laboratories" within Farhangian University is recommended. These labs would provide hands-on environments for practicing AI-supported lesson planning, classroom management, and assessment.

Introducing a new academic course titled "Artificial Intelligence and Professional Teacher Education" is suggested to enhance Student Teachers' pedagogical, technical, and ethical competencies. To strengthen individual and professional capacities, the creation of a "Future Teachers' Support Center for Emerging Technologies" is advised. This center would offer training, consultation, and innovation support for Student Teachers' AI-related educational projects. Organizing "Creative Empowerment Workshops", focusing on problem-solving, scenario design, and smart content production, is also recommended. Addressing ethical concerns requires the development of an "Ethical Framework for AI in Education", co-created by education scholars, technology experts, and Student Teachers, to ensure responsible data use, privacy protection, and digital equity. A proposed "Teacher's Smart Assistant" platform could provide AI-based recommendations for lesson design, formative assessment, and personalized feedback, while maintaining the teacher's central supervisory role. To overcome institutional challenges, the establishment of a "National Center for AI Governance in Education" within the Ministry of Education is recommended, alongside the formulation of a "National AI Roadmap for Teacher Education", delineating responsibilities of key stakeholders (Ministry of Education, Ministry of Science, Farhangian University, and private sector). Finally, in response to financial and infrastructural challenges, the creation of an "Educational Innovation Fund" to support AI-based teaching initiatives and Student Teachers' projects is proposed, as well as the development of a "National AI Support Network" to provide regional technical assistance and professional training for teachers.

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