



## Faculty Readiness and Pedagogical Transformation in AI-Enabled Personalized Learning: A Phenomenological Study

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*The use of artificial intelligence (AI) in the education sector has become widespread, and AI-facilitated individualized learning has become recognized in higher education, transforming instructional and pedagogical decision-making from an alternative perspective. Whereas literature provides potential insights into the role of AI in education, the lived experiences of readiness and pedagogical change by faculty members are yet to be investigated. The current study focuses on the experiences of faculty members of higher education regarding AI-enabled personalized learning in their professional teaching work. The qualitative phenomenological research design was used to conduct deep semi-structured interviews with ten participants selected through purposive sampling techniques from three public sector universities of Punjab, Pakistan. Thematic analysis was used for data analysis. The results indicate five interactive themes: Becoming Ready, Redefined Teaching, Ethical Negotiation, Hidden Workload, and Institutional Leverage. The faculty preparedness was developed because of the challenge of experience that was not only built through the training but also through the long, gradual experience. Participants described a redefinition of teaching along the lines of facilitation and mentoring and learning design, as well as increased ethical responsibility in the areas of academic integrity, data privacy, and algorithmic transparency. There was ongoing concern over increased cognitive demands and intensification of workload, especially in the early stages of adoption, and institutional support made the difference between facilitating and inhibiting pedagogical change. The study further explores the sense-making of the faculty and professional identity formation in AI-mediated pedagogy, as well as providing policy-relevant information in relation to how AI can be integrated ethically and sustainably in higher education.*

## 1. Introduction

Artificial intelligence (AI) is quickly transforming the system of higher education by providing personal learning experiences, automating processes, and providing new opportunities to receive formative feedback and assessment (George & Wooden, 2023). Personalized learning systems enabled by AI adjust the content, learning pace, and feedback to specific learners and have the potential to enhance engagement and perceive better learning results (Vorobyeva et al., 2025; Wang et al., 2024). The rising use of generative AI tools and institutional implementations (e.g., system-wide implementations of AI-powered education-specific systems) has increased discussions amongst teachers around how teaching should change to maintain academic integrity and exploit the pedagogical opportunities presented by AI (Jin et al., 2025; Reuters, 2025).

The key place of this transformation is the faculty. The willingness of institutions to convert the promises of AI into better student learning is determined by their preparedness, which has been determined as knowledge, attitudes, technical skills and pedagogical dispositions to AI (George, 2023; Yazdi et al., 2025). Recent empirical research has shown a vast range in the preparedness of faculty: some faculty members claim to be highly prepared, and are already integrating AI into the course development, whereas others have voiced their fears regarding the validity of assessment, intellectual property, and the perceived additional cognitive burden of redesigning pedagogy (Hamamra et al., 2025; Khoza & Van Der Walt, 2025). Furthermore, the literature highlights that another specific aspect of preparedness that determines pedagogical adoption is AI literacy as the capacity to critically assess, adapt, and use AI tools ethically (George, 2023; Vorobyeva et al., 2025).

The Pakistani higher education environment allows faculty readiness and pedagogical transformation in terms of AI-based personalized education to be further conditioned by the unequal distribution of the digital infrastructure, low access to professional development, and the lack of institutional instructions on the use of AI (Nizami et al., 2025). In the same way, Tahir et al. (2025) describe that specifically, the public sector universities are faced with resource-restricted environments where faculty are frequently expected to balance technological innovation, besides demanding teaching burdens and changing policy demands. Although more people are interested in the integration of AI, limited empirical studies to describe how faculty in the Pakistani context experience, interpret and adapt to AI-enabled personalized learning are available, which highlights the necessity of experience-based and context-sensitive inquiry.

Although quantitative research and systematic reviews have increased concerning AI in education, phenomenological research on a detailed study of how faculty encounter pedagogical change in adopting AI-enabled personalized learning is limited. Already available research findings of the technologies, affordances, and patterns of early adoption (Fortuna et al., 2025) and some qualitative studies have explored the pre-service teacher attitudes or small samples of instructors (Hamilton, 2025). Nevertheless, no dedicated phenomenological exploration of faculty lived experiences, including the sense of the faculty's meaning, tensions, and identity transformations in the process of negotiating AI tools, course design options, and student demands, is present. The importance of such an inquiry is that pedagogical

transformation does not solely rely on access to technology but equally on the interpretative frames, professional identities and context-specific limitations of instructors.

This study fills that gap by providing a phenomenological exploration of readiness and pedagogic change among the faculty in AI-enabled personalized learning. The study will reveal the structures of meaning underlying readiness, the pedagogical adaptations available to faculty and the challenges and ethical dilemmas encountered by higher education faculty by drawing on the lived experiences of higher education faculty who have started using AI in their teaching practice. The results will be used to inform institutional approaches to professional development, policy formulation and the design of AI literacy programs that can be used to facilitate meaningful, ethically relevant pedagogical change.

## 2. Literature Review

AI-based methods of higher education integration have been on the rise in the past few years, especially in AI-based personalized systems of learning where instructional content, feedback and pacing are adjusted to everyone. The emergence of new trends in technology demonstrates that these systems may improve student engagement and effective learning, but also provides evidence of the pedagogical and ethical complications of these systems to instructors (Vorobyeva et al., 2025; Wang et al., 2024). With the growing involvement of artificial technology tools in instructional decision-making, faculty members no longer have to convey content, but instead design learning, facilitate learning, and subjectively monitor algorithmic outputs as technological integration in teaching plays an effective role (Jamil et al., 2024).

Faculty preparedness has become one of the key preconditions of successful AI implementation in instruction (Kohnke et al., 2023). According to the observations of many researchers, the concept of readiness is multidimensional, and it includes technical competence, pedagogical beliefs, ethical awareness, and institutional support (Jamil et al., 2025; Rahim et al., 2024; Tariq et al., 2024; Waqar et al., 2024; Yazdi et al., 2025). Although a portion of faculty is open to AI tools and tries them out, others are worried about issues of academic integrity, validity of assessment, increased workloads, and loss of pedagogical autonomy (Hamamra et al., 2025; Khoza & Van Der Walt, 2025). The study of AI literacy also asserts that faculty need not just operational skills, but critical abilities to assess AI-generated products, to handle bias, and to advise students in responsible AI usage (Marienko & Markova, 2024;).

The context and professional growth of educational institutions also influence the way the faculty will interact with AI-enabled personalized learning. Recent research studies show that long-term training, collaborative maintenance, and policy instruction are necessary to initiate a pedagogical shift instead of superficial usage of technology (Sperling et al., 2024; Tan et al., 2025). Lots of the available literature, however, is based on surveys and conceptual debates, which provide an insufficient amount of information on how faculty are experiencing pedagogical change in practice. Despite the few qualitative and phenomenological studies that have embarked on investigating the perception held by educators about AI integration, there are limited detailed descriptions of faculty members' lived experiences in higher education (Chen, 2024; Shao & Sun, 2025).

Collectively, the literature demonstrates the need to bridge the gap between the quick spread of AI-based individualized learning and a profound insight into the faculty preparedness and pedagogy change as a lived experience. This gap of unaddressed knowledge implies that a phenomenological inquiry to understand the ways in which faculty interpret, negotiate, and engage in meaning-making of AI integration in their teaching practice is necessary.

### 3. Research Methodology

This study is based on a qualitative phenomenological research design to explore faculty preparedness and pedagogical change in AI-enabled personalized learning. Phenomenology suits the study since the research aims to learn about the lived experiences and meanings that the faculty members assign to the integration of AI in teaching (Oluka, 2025; Van Manen, 2016). Participants were chosen through purposive sampling that targeted higher education faculty who had direct exposure to or experience of AI-enabled personalized learning tools. In phenomenological research, purposive sampling is appropriate because it allows selecting the respondents who can give detailed knowledge about the phenomenon being studied based on their experiences (Patton, 2015). The sample size was ten faculty members selected in three institutions of the Pakistani public sector, namely the Bahauddin Zakariya University (BZU), Multan; Muhammad Nawaz Sharif University of Agriculture (MNSUA), Multan; and the Islamia University of Bahawalpur (IUB), Bahawalpur. These institutions were chosen so that the selection of institutions is inclusive of various disciplines and institutional backgrounds. Each of the participants had personal experience or was exposed to AI-enabled personalized learning at the higher education level, which means they can be information-rich subjects of phenomenological inquiry. Semi-structured, in-depth interviews were used to collect data, and this type of interviewing enables the respondents to present their experiences using their own words, ensuring that they do not contradict the purpose of the research (Kallio et al., 2016). Online interviews were conducted and audio-taped with informed consent and transcribed verbatim. The duration of each interview was about 40-60 minutes. Data were analyzed through thematic analysis.

### 4. Results of the Study

The thematic analysis of the phenomenon identified some of the themes indicating the lived experience of readiness and pedagogical transformation of faculty members in AI-enabled personalized learning. The presentation of each theme is as follows:

#### 4.1 Becoming Ready

The theme also indicates the concept of faculty members who understand readiness as an ongoing and dynamic process that appears through direct interaction with AI-mediated personalized learning, instead of a condition that is acquired through prior training. According to all participants, preparedness was perceived as a progressive and continuous process that was influenced by trial and error, emotional adaptation, interpersonal engagement, and self-reflection. Faculty never viewed readiness as something in a fixed state, but rather it was something constantly negotiated by lived teaching experiences through AI-enabled personalized learning. Different participants provide their views from their perspectives.

In the view of participant B, he learned by trial and error, pointing to not having a time of being prepared. As he said, *"I did not have any training to make me feel prepared. It was only after committing mistakes and reviewing the teaching strategy that I became more comfortable with it, depending on what worked and what did not"*. This experience brings into focus readiness as a process that is based on reflective practice and iterative learning. According to participant A, it was referred to as something that arose after the long-term testing with the AI tools. This description shows that the preparation was not only a result of preparation but also practice and experience. The following is the perspective from the participant.

*I was unprepared and uncertain when I was introduced to AI-enabled personalized learning. As time passed, however, through repeated use of the tools and an observance of how the students were responding, I gradually gained confidence in my capability to use the tools meaningfully.*

According to participant D, readiness was being imbalanced and situational, with differing levels of preparation depending on teaching work. *"I was also comfortable with applying AI to specific tasks, such as feedback, but not to assessment. My preparedness was also different in terms of the amount of responsibility the system played in the process of learning"*. This description indicates the situational aspect of readiness and its reliance on perceived pedagogical risk. In the view of participant E, the readiness was linked to the professional identity, whereby redefinition of roles over time was stressed.

*I knew I was not simply acquiring a tool; I was acquiring the way to reinvent the meaning of me as a teacher. It was one of the realizations that made me feel more prepared in the course of time.*

#### 4.2 Redefined Teaching

This theme indicates a shift in the pedagogical roles and professional identities of faculty members after the introduction of AI-based personalized learning. Faculty experienced pedagogical change as a re-organization of professional role and identity with more facilitation, mentoring, reflective decision-making, and negotiated authority working in partnership with AI systems.

Participant A explained how they had shifted their focus to not focusing on the traditional lecture and mentioned that their professional role was fundamentally changing as a result of incorporating the use of artificial intelligence in the teaching process in the following words:

*I do not consider adopting content delivery as my primary role anymore. Part of that is treated by AI, and I pay more attention to leading students, analyzing their advancements, and helping them in their learning choices in the process*

This shows a shift towards facilitative teaching, which places the teacher in a position that is less of an information disseminator and more of a guide in learning. The perspective

offered by the participant shows the ability of AI to place educators in the context of individualized support, reflective guidance, and informed decision-making, and to transform classroom dynamics and improve student-centred learning. In the view of participant C, *"The application of AI left me questioning my teacher identity. I knew that I was quite a designer and mentor rather than a conventional teacher"*. In this case, one can observe identity reconstruction as the participant transformed the concept of teaching into instructional design, mentoring, and facilitation based on the learners.

Participant F emphasized the alteration in the student interaction patterns, noting that there was an apparent change in the classroom interaction after AI-assisted tools had been utilized. *"I now take more time to discuss the process of learning among students instead of spending time on constant explanation"*. This signifies changes in relations within teaching procedures, wherein dialogue, feedback, and engagement of learners were utilized in place of the repetitive explanation of the content as the fundamental instructional emphasis.

#### 4.3 Ethical Negotiation

This theme includes faculty perceptions of ethical issues and increased professional responsibility that come as a result of the application of AI-enabled personalized learning, especially regarding academic integrity, data use, accountability, and value-based decision-making.

Participant A narrated that he was concerned about academic integrity, as he was not sure how much AI affects the actual learning of a student. *"I am always concerned about how students are learning, or whether they are simply using AI. It transforms my thinking in regard to assessment"*. Ethical vigilance was also practised as the participant constantly checked the practices of assessment to make sure that practices are authentic, fair and achieve meaningful learning results in AI-held environments. Participant B raised issues of data privacy, transparency with the system, and expressed his concerns regarding the collection, storage, and use of student data. *"I feel uncomfortable with the system of storing and utilizing student data. It is one of the uncertainties that makes me distrust the system"*. The trust was conditional, which means that ethical acceptance of AI was directly linked to trust in data management, data security, and institutional protection.

In the view of participant C, it is possible, and it is something to be afraid of, because AI-driven recommendations could unintentionally disadvantage some learners. *"I am concerned that AI suggestions can take advantage of certain students, and I am obligated to keep the results in check"*. Ethical supervision was considered, whereby the participant played the role of active monitoring to reduce bias and provide equal learning chances. Participant D described the meaning of professional responsibility as a human-based concept by stressing the idea that technology cannot be entrusted with the responsibility of being ethical. *"Despite the development of AI, I do not think that the teacher should be replaced in the end"*. Professional responsibility was placed at the center, which supports the perception that teachers still have final responsibility regarding pedagogical and ethical choices.



Faculty found AI integration to be ethically tricky, and to be able to balance technology potential and educational integrity, ongoing monitoring, value-based judgment, and increased professional responsibility was necessary.

#### 4.4 Hidden Workload

This theme reflects the experience of faculty who are exposed to a greater workload and an increase in mental effort concerning the implementation of AI-powered personalized learning, especially in planning, monitoring, and decision-making.

Participant A explained that the work did not decrease, but rather changed in character because of AI, with the accents made regarding the changes to the character of teaching-related activities. *"It did not make my workload less: it transformed it. I put more time into planning and tracking learning pathways"*. There was a redistribution of work, with the instructional work being directed towards continuous planning, supervision and monitoring of the learner rather than direct delivery of content. Participant B highlighted the demands of more time, especially at the beginning of implementation. *"Establishing personal learning consumes significant time when compared to normal teaching"*. The first steps were high, which means that AI-based personalization involved a high amount of initial investment in time and preparation.

Participant D referred to the load of continuous learning related to the rapidly changing AI systems. *"The process of following updates and features is tiresome for me"*. Another source of continued cognitive demand and professional exhaustion was technological change, which caused pressure.

Participant E associated workload with emotional stress and doubted the viability of the extra work needed. *"Certain times I doubt that the additional work is worth the price"*. The tension of benefit-cost arose, which can be explained by the interest in long-term solvability and professional health. According to participant F, the process of adaptation was gradual, and the pressure to work was lessened with time. *"The workload became easier over time, but the initial period was challenging for me"*. The strain was alleviated through adjustment, which implies that the initial demands were alleviated by experience and familiarity.

Participant H described the extra workload as an investment worth making and presented continued work effort as a quality worth the price, which in this case is pedagogical. *"I consider it an investment in superior teaching in spite of the workload"*. Concerns about intensification were moderated by perceived long-term benefits, which meant that perceived long-term benefits justified effort.

Faculty found AI-stimulated personalized learning to be a cognitively and temporally challenging process, especially at the initial adoption, and workload augmentations influenced sustainability and professional persistence perceptions.

#### 4.4 Institutional Leverage

This theme indicates how the institutional context influenced the faculty experiences with AI-enabled personalized learning, impacting the levels of confidence, propensity to innovate, and sustainability perceptions.

Participant A did not neglect the role of institutional training, stating that organized support brought more confidence when working with AI tools. "*I was more confident to experiment with AI tools when there was some training given*". Engagement was facilitated by support because access to training minimized uncertainty levels, and active exploration of AI-enabled practices was promoted. Participant B emphasized the importance of leadership, as the institutional leaders encouraged pedagogical innovation and openness. "*Leadership that was supportive influenced my readiness to be innovative*". Leadership was important given that the perceived professional risk was mitigated through visible approval of leadership.

Participant C mentioned the importance of the policy being clear and that clear institutional directions reduced the anxiety regarding the use of AI. "*Detailed organizational procedures minimized my fear of AI use*". Transparency also created trust, and the faculty was more confident and ethically safe to use AI tools.

Participant G associated the idea of institutional support with long-term sustainability, saying that he was worried about the likelihood of AI initiatives sustaining without further support. "*In its absence, the integration of AI will be tentative*". The issue of sustainability appeared, and it was not clear whether practices based on AI implementation might be sustainable in the long term. Participant H reported the sense of empowerment when the institutions provided independence and stressed trust as a driver of innovation. "*Innovation was successful when institutions placed their trust in faculty to experiment*". Independence promoted change and allowed faculty to implement AI tools in innovative ways related to their pedagogical setting.

The presence of institutional support was a critical factor influencing the experiences of the faculty, either allowing the faculty to confidently experiment and change their pedagogies or impeding the process with uncertainty, resource scarcity, and lack of long-term commitment.

#### 4.5 Discussion

This paper explored faculty preparedness and pedagogical change in AI-mediated settings of personalized learning through the lens of phenomenological research. These signs identify that the process of teaching faculty members about AI integration is complex, recursive, and tightly connected to the concept of professional identity, educational institutional context, and moral responsibility. Although the participants defined readiness as a prerequisite to adoption, participants described it as a dynamic process that evolves with experience, analytic reflection, and negotiated contact with artificial technologies, which also corresponds with the current literature that views readiness as a dynamic process and not a set of fixed skills (Wang et al., 2024; Yazdi et al., 2025).

The gradual and experiential nature of the concept of readiness supports the constructivist ideas of professional learning, which place more emphasis on learning through praxis and reflection rather than on formal instruction alone (Jonassen & Rohrer-Murphy, 1999; Morsy, 2025; Webster-Wright, 2009). The readiness of the faculty in this question was primarily formed with the help of experience, experimentation, and interaction, reflecting recent qualitative studies that propose AI competence to grow as a result of situated

pedagogical practice instead of standardized professional growth (Hamamra et al., 2025). This observation refutes institutional assumptions that faculty training can be adequately done through brief training workshops in order to equip them to teach with AI.

Results related to pedagogical role change also show a great change in the sense that faculty teach in AI-enhanced situations. The participants gradually started identifying themselves as facilitators, mentors, and designers of learning and stopped being content transmitters. This role redefinition is in line with more general academic debates about AI-mediated pedagogy, which holds that AI increases the requirements of higher-order pedagogical judgment, relational interaction, and ethical supervision on the part of teachers (Vorobyeva et al., 2025). On the professional identity level, these changes force educators to renegotiate power and accountability, thus reaffirming the practicality of teacher identity theory in the elucidation of pedagogical change (Beijaard et al., 2004).

The high level of ethical issues and professionalism highlights the fact that the use of AI is not a value-neutral process. The concerns of the participants were academic integrity, data privacy, algorithmic bias, and transparency, which are common concerns widely reported in recent AI-in-education literature (Khoza & Van Der Walt, 2025; Tan et al., 2025). Importantly, such ethical considerations were not peripheral to the decision-making of the faculty, which implies that ethical judgment is one of the parts of AI preparedness. This result confirms appeals to incorporate ethics and critical AI literacy into faculty development as opposed to viewing them as policy issues (Azevedo et al., 2024; Swoboda & Lauwaert, 2025).

The feeling of increased workload and cognitive load complicates the existing discourses that present AI as a tool of lightening instructional load. In line with the recent empirical research, the participants claimed that the integration of AI caused an increase in workload at first because of course redesign, system monitoring, and sustained cognitive activity to reconcile algorithmic suggestions with pedagogical judgment (Dennard, 2024; Wang et al., 2024). The point made in this observation is that there is an inherent conflict between efficiency talk and living faculty experience, which implies that institutional expectations of productivity should be explicitly synchronized with the boundaries of realistic implementation schedules.

Lastly, the factor of institutional support proved decisive in the process of forming faculty experiences. Experimentation and confidence were supported with a positive leadership style, clear policies, access to resources and collegial learning communities and hampered with ambiguity and absence of direction.

## 5. Conclusion

The results indicate that the teaching faculty's readiness is a dynamic, experience-based process that can be realized before the implementation of technology, yet is continuously developed through the continuous work with AI tools, reflective practice and contextual support. Faculty education undertook pedagogical change by reconfiguring their teaching roles and professional selves towards facilitative, design-oriented and ethically based teaching practices. The research also finds that the use of AI in the context of personalized learning puts forth important ethical, cognitive, and workload-related issues. The members of the faculty discussed the tension



between innovation and professional responsibility, especially academic integrity, data privacy, and transparency of the algorithm. Such tensions restate the fact that the process of pedagogical transformation is not only a technical one but rather a highly human one, including such processes as meaning making, negotiating identity, and making decisions based on values. The institutional context becomes one of the critical elements, facilitating or impeding faculty involvement with AI, based on training opportunities, policy articulation, leadership facilitation, and learning opportunities.

### 5.1 Recommendations

1. Institutions should offer ongoing and practice-oriented aspects of professional development so that faculty can learn through experimentation, reflection, collaboration with others, and through a gradual exposure to AI-enabled personalized learning tools.
2. Universities should officially appreciate and endorse the present roles of faculty as facilitators, mentors, and learning designers by revising teaching structures, workload guidelines, and performance appraisal guidelines to achieve parallels with AI-mediated pedagogical activities.
3. Specific institutional policy and professional development strategies are required to handle the aspects of academic integrity, data privacy, algorithmic bias, and transparency and allow the faculty to make wise decisions and be ethically sound when using AI in teaching and assessment.
4. Institutions should not underestimate the cognitive, emotional, and time-related costs of the AI implementation that emerge subtly during the beginning phase of its use, and that may require workload modifications, technical support, and feasible implementation schedules to enable systematic faculty involvement in it.
5. Leadership, articulate AI-related policies, infrastructure availability, and long-term institutional dedication are necessary to enable faculty to curb confusion and provide a stable and assured introduction of AI-enabled personalized learning in higher education.

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