



Psychological Readiness for Artificial Intelligence Adoption in Education: A Multi-Dimensional Conceptual Framework

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ABSTRACT

Artificial Intelligence (AI) is revolutionizing education with AI-driven processes, intelligent feedback, adaptive learning, and generative AI. Apart from the availability of technology and readiness to use it, the psychological readiness and preparedness of the teachers and learners to be using the technology critically, confidently, ethically and responsibly are crucial to successful implementation of AI in education. This current conceptual research is designed to create a multi-dimensional model of the construct of Psychological Readiness for AI Adoption in education. For this purpose, a conceptual approach was used in order to synthesize recent empirical studies, existing psychological concepts and theories about the acceptance of technology, as well as international research on human-centred AI in education. The literature suggests that several key factors relate to AI engagement and adoption, including AI literacy, self-efficacy, trust, anxiety, motivation, ethical awareness, social support, and behavioural intention. According to the literature, the factors that

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relate to AI engagement and adoption are considered to be related: AI literacy, self-efficacy, trust, anxiety, motivation, ethical awareness, social support, and behavioural intention. This synthesis forms the basis for the study to present the Multidimensional Psychological Readiness Framework for AI Adoption in Education (MPRFAIE) which conceptualizes psychological readiness as six interconnected dimensions: cognitive readiness, emotional readiness, motivational readiness, ethical readiness, social readiness, behavioural readiness. The framework also establishes robust adoption of the artificial intelligences as a roadmap for creating more effective teaching, engaging learning, educational innovation and sustainable integration of the AI. Overall, the study indicates that the term 'AI readiness' should be interpreted as a psychological construct with multiple dimensions, not as a technological acceptance. The proposed framework will serve as a stepping stone to various empirical studies in the future, to facilitate the assessment of AI readiness, the development of teacher training programmes, institution planning and responsible deployment of AI in the education sector.

1.0 Introduction

Artificial intelligence (AI) has changed the way we do things in a way. It is really changing how we teach and learn. Artificial intelligence is also changing the places where we learn and the things we need to be good, at to do our jobs. Now that we have intelligence systems that can make things like big language models, we are using artificial intelligence more and more in the classroom when we learn, when we get tested, when we plan what we learn and when we run schools. Artificial intelligence (AI) is quickly changing how education works through various uses like personalized learning, automatic feedback, smart tutoring, analyzing how students learn, and AI that can create content. The introduction of tools like ChatGPT, Gemini, Claude AI, has made AI's role go beyond just helping with teaching to include tasks such as creating material, solving problems, giving feedback, and interacting with students. These developments have shifted educational discourse from whether AI should be adopted to how it can be integrated responsibly while preserving human agency, critical thinking, and ethical decision-making (UNESCO, 2023; OECD, 2023). Studies show that generative AI can help in education, but there are also worries about



how accurate it is, whether it affects honest academic work, privacy issues, and how it should be used in teaching (Albadarin et al., 2024; Bettayeb et al., 2024).

This implies that the effective use of AI in education cannot be fully understood just by looking at the availability or usefulness of the technology itself. Both teachers and students need to have the right mental qualities to understand, assess, trust, and use AI in a proper way. Recent research shows that these psychological factors are very important when it comes to using AI. For instance, Viberg et al. (2025), conducted cross sectional study involving 508 K–12 teachers from different countries and found that teachers who felt more confident in using AI and understood it better were more likely to see benefits, had fewer worries, and trusted AI-based tools more. Similarly, Wu and Wee (2026) discovered that university teachers who had higher confidence in using AI experienced less anxiety about it, suggesting that confidence is key to overcoming psychological barriers when adopting AI. As a result, the role of psychological factors in AI adoption is becoming more and more significant. Factors like AI literacy, self-efficacy, trust, anxiety, motivation, ethical awareness, and the ability to adapt may all play a part in determining whether someone has access to AI or is actually ready and willing to use it in a meaningful way. UNESCO (2023) consequently highlights the need for a human-centered approach to generative AI that protects human control, privacy, fairness, and meaningful learning experiences.

In light of this, the present conceptual paper proposes a Multidimensional Psychological Readiness Framework for AI Adoption in Education (MPRFAIE). This framework views psychological readiness as a combined concept that includes cognitive, emotional, motivational, ethical, social, and behavioural aspects. The aim is to explain how these different elements can help ensure the responsible and sustainable use of AI in education.

2.0 Need and Rationale of the Study

The surge of AI in education highlights the need to go beyond the usual discussion about whether people will accept technology and instead focus on whether they are mentally prepared to use AI in a responsible way. Existing research shows that teachers' willingness to accept AI is shaped by various psychological factors. For instance, Viberg et al. (2025), found that teachers' confidence in using AI and their understanding of it are linked to how they view the benefits, concerns, and trust related to AI. Similarly, Wu and Wee (2026) noted that confidence in using AI is a key factor that helps reduce anxiety among university teachers regarding AI.



At the same time, incorporating AI into education brings up challenges that go beyond just having the technical skills. A review of studies on ChatGPT and AI in education points out several concerns, including reliability, academic honesty, privacy, ethical use, the changing role of teachers, and the need for proper institutional support (Albadarin et al., 2024; Bond et al., 2024). These findings suggest that simply having technical skills is not enough. People also need confidence, the ability to think critically, awareness of ethics, motivation, social support, and the ability to adjust to new AI environments.

This need for a more comprehensive view is especially crucial because responses to AI involve many different psychological aspects. Recent studies have identified AI anxiety as a major psychological issue for educators, and research on teacher AI adoption includes factors like self-efficacy and anxiety alongside traditional measures of acceptance (Falebita, 2024; Guo et al., 2024). As a result, looking at these factors in isolation can only give a partial picture of AI adoption.

Moreover, UNESCO (2023) emphasizes that AI in education should be safe, fair, ethical, meaningful, and centered on people, not just driven by technology for its own sake. This shows a clear need for a framework that links psychological readiness with responsible AI use, rather than treating AI adoption as just a matter of accepting new technology. For these reasons, this study introduces the Multidimensional Psychological Readiness Framework for AI Adoption in Education (MPRFAIE) framework. It brings together six key areas: cognitive, emotional, motivational, ethical, social, and behavioural readiness. The framework is designed to offer a solid theoretical basis for future research and to help teacher educators, schools, and policymakers create programs that address both human psychology and the changes brought by AI technology.

3.0 Review of Literature:

The rapid expansion of Artificial Intelligence (AI) in education has led researchers to focus more on how people accept and use AI, rather than just its technical abilities. A review of AI in higher education highlighted several key areas of concern, including readiness, ethics, trust, governance, training, and the quality of research evidence (Bond et al., 2024). Similarly, studies on ChatGPT in education show that while there are many opportunities for teaching and learning, there are also important concerns about how to use AI in a responsible and appropriate way (Albadarin et al., 2024).

Research increasingly shows that understanding AI and being mentally prepared are both important for its adoption. Du et al. (2024) conducted a study on 318 teachers in China found that AI literacy affects how confident teachers feel about using AI, their views on AI's benefits for society, and their awareness of



ethical issues. This confidence and positive perception directly influence their interest in learning more about AI. Another study by Cabero-Almenara et al. (2024), on 425 teachers showed a high level of acceptance of educational AI, with factors like demographic background, teaching style, and beliefs about teaching methods playing a role in how AI is used. These findings suggest that adopting AI is not just about knowing it, but also about believing in how it can help improve education.

Trust in AI and the ability to use technology effectively are also important. Al-Abdullatif (2024), studied 237 university teachers found that knowing about AI and thinking it is easy to use are key factors in accepting Generative AI. However, feeling confident in AI and having knowledge about how to use it effectively (intelligent TPACK) also help in this process. A cross-sectional study by Viberg et al. (2025) across six countries with 508 teachers found that those with higher confidence and understanding of AI saw more benefits, had fewer worries, and felt more trusting of AI tools in education.

Emotional readiness is another important aspect. A survey by Falebita (2024) on 1,067 future teachers found that many felt some level of anxiety about AI, with concerns including fear of technology, worries about losing jobs, and ethical issues. This shows that being mentally ready for AI is not just about knowledge or acceptance, but also about managing feelings and perceived risks. Recent studies have also highlighted the importance of self-efficacy as a way to build confidence in using AI. Also, Xia et al. (2026) conducted a study on 787 teachers and researchers developed a scale that measures different aspects of confidence in using AI, including understanding, teaching, research, and ethical use.

The literature also emphasizes the importance of ethical and social aspects of AI readiness. Studies show that being aware of AI ethics is connected to understanding AI better, and there is a call for more focus on ethics, collaboration, and quality in AI education research (Du et al. 2024; Bond et al. 2024). International study by Viberg et al., (2025). also suggest that perceptions of AI are influenced by cultural and environmental factors, showing that individual readiness develops within a broader social and institutional context.

Taken Together, these studies show that AI adoption in education involves several factors such as AI literacy, self-efficacy, trust, anxiety, ethical awareness, teaching beliefs, social influences, and the intention to use AI. However, most existing research looks at these factors separately or within traditional models of technology acceptance. These findings support the idea that AI adoption should be understood as a broader process of psychological readiness, rather than just a question of technological acceptance.

4.0 Research Gaps



The existing literature highlights several significant gaps in understanding how AI is being adopted in educational settings. First, traditional models that assess technology acceptance focus mainly on factors like usefulness, ease of use, and the intention to use technology. But recent studies show that other important factors such as AI literacy, self-efficacy, trust, anxiety, and ethical awareness also play a crucial role in AI adoption (Du et al., 2024; Al-Abdullatif, 2024; Viberg et al., 2025). Second, there is an integration gap because these psychological factors are usually studied on their own rather than being combined in a single, comprehensive framework. Few studies have explored how cognitive, emotional, motivational, ethical, social, and behavioural readiness interact within an educational psychological context (Du et al., 2024; Falebita, 2024; Viberg et al., 2025). Third, there is a conceptual gap because most existing measures focus on specific areas like AI acceptance or competency with generative AI, rather than viewing psychological readiness as a broader, multi-dimensional concept (Cabero-Almenara et al., 2024; Xia et al., 2026). Finally, while research highlights the importance of ethical, collaborative, and human-centered AI integration, there is not enough practical guidance on how to translate these principles into measurable psychological dimensions that can be developed and tested in real-world educational settings (Bond et al., 2024). As a result, this study introduces the Multidimensional Psychological Readiness Framework for AI Adoption in Education (MPRFAIE), which brings together cognitive, emotional, motivational, ethical, social, and behavioural readiness as interconnected aspects that support responsible AI adoption.

5.0 Objective of the study

1. To determine the key psychological aspects connected to the use of AI in educational environments.
2. To propose a multidimensional conceptual framework that outlines the psychological readiness required for the responsible use of AI in education.
3. To discuss the implications of the proposed framework for educational practice, teacher preparation, and future research on AI in educational settings.

6.0 Theoretical Foundations

The proposed framework is based on supporting theories of technology acceptance, self-efficacy, motivation and responsible AI engagement. The technology adoption is mostly interpreted by the Technology Acceptance Model (TAM) with the two key variables: perceived usefulness and perceived ease of use (Davis, 1989). The Unified Theory of Acceptance and Use of Technology (UTAUT) reflects this view with the usage dimensions of performance expectancy, effort expectancy, social influence, and facilitating



conditions (Venkatesh et al., 2003). While these models can be used to understand adoption behaviour, they do not fully account for the psychological complexities of using artificial intelligence.

A key element in Social Cognitive Theory (SCT) is self-efficacy and it is a psychological construct that is crucial to an understanding of how belief influences behaviour, motivation, and persistence (Bandura, 1986). This view is particularly relevant in the case of AI applications because empirical studies have shown that AI self-efficacy is one of the critical factors contributing to teachers' perceptions and trust in AI (Viberg et al., 2025). The framework is also informed by Self-Determination Theory that suggests the conditions of autonomy, competence and relatedness foster intrinsic motivation and continued participation (Ryan & Deci, 2020). In the context of education supported by AI, these principles apply to comprehending how the users experience AI and does it make them feel more competent and autonomous, or is it simply taking the place of human agency? Lastly, the human-centred and ethical approach to AI that UNESCO has recommended (2021, 2023) has been included, which is characterized by human agency, fairness, transparency, privacy, accountability and responsible use. These principles go beyond mere acceptance by adding more ethical and responsible elements to AI readiness in relation to psychological theories. These understandings provide a theoretical basis for seeing Psychological Readiness for AI Adoption as a multidimensional construct and a precursor to using technology.

7.0 Proposed Multidimensional Conceptual Framework

The present study introduces the Multidimensional Psychological Readiness Framework for AI Adoption in Education (MPRFAIE). The framework describes psychological readiness in terms of a complex meta construct having six interrelated subconstructs, which are cognitive readiness, emotional readiness, motivational readiness, ethical readiness, social readiness, and behavioural readiness.

Cognitive readiness is the AI literacy, critical evaluation, metacognition, and decision making that are needed to assess and understand AI outputs. Studies suggest that an understanding of AI literacy and awareness correlates with more positive views of educational AI, as well as a greater sense of trust (Du et al., 2024; Viberg et al., 2025). Emotional readiness is confidence, the ability to trust, anxiety management and resilience. New research shows a significant correlation between teachers' self-efficacy in using AI and their anxiety about AI in educational contexts (Wu & Wee, 2026). Self-efficacy, learning orientation, growth mindset, and motivation to gain AI competence are aspects of the cognitive dimension known as motivational readiness. The cognitive dimension of motivational readiness includes self-efficacy, learning orientation, growth mindset, and motivation to develop competence in the field of AI. Ethical readiness incorporates privacy, fairness, transparency, accountability, academic integrity, and responsible use. They

are significant for the current research in the AI-in-education field, which is calling for greater ethical and contextual considerations (Bond et al., 2024). Social readiness demonstrates peer support, institutional endorsement, leadership, however relationships with peer, collaboration and professional learning opportunities. Behavioural readiness is through people's intentions and skills to effectively and responsibly use AI in educational practice. These dimensions converge to good use of AI, where the various factors should lead to better teaching practices, student engagement, attempts at innovation, and sustainable implementation of AI.

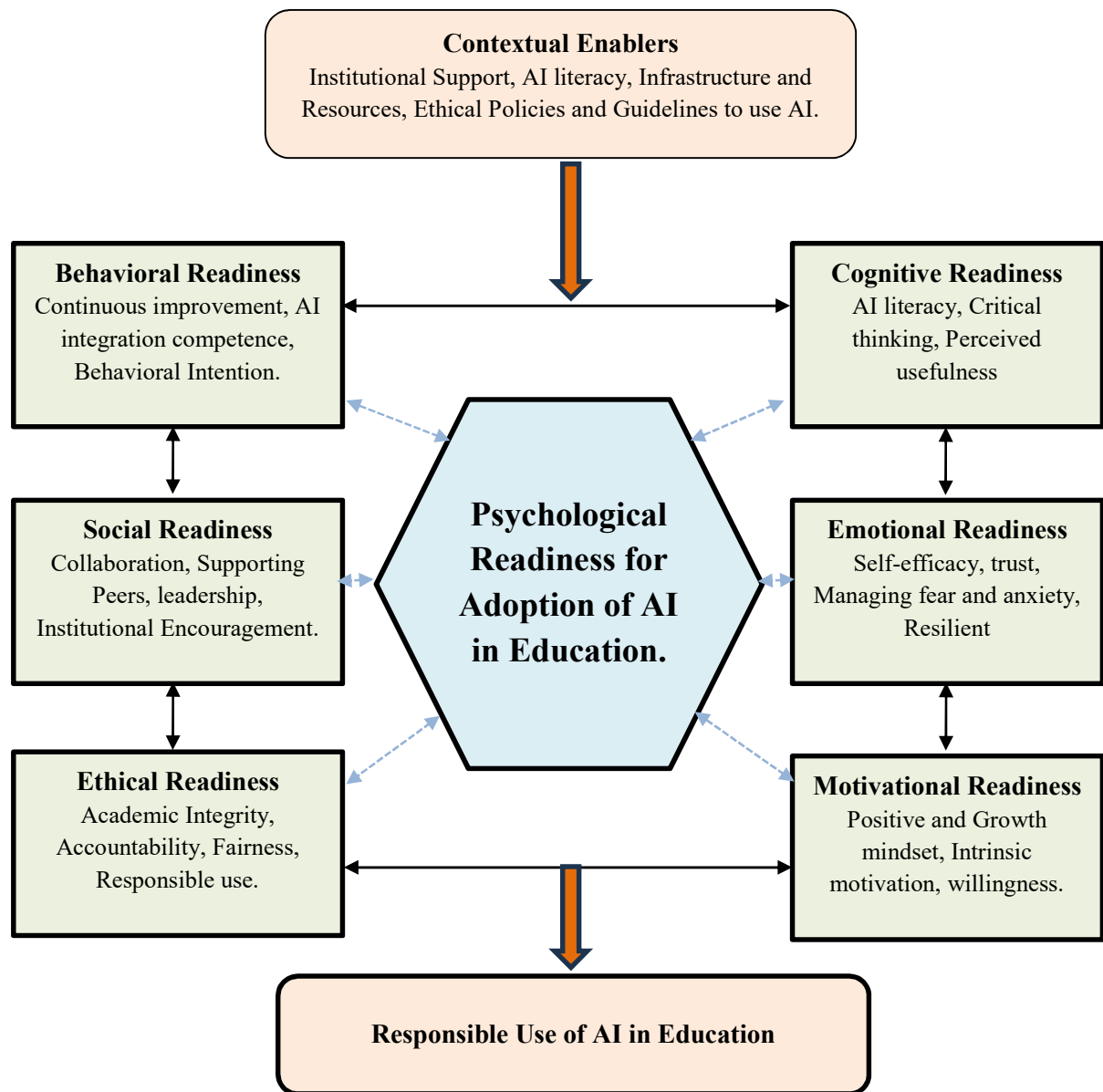


Figure 1. Multidimensional Psychological Readiness Framework for AI Adoption in Education (MPRFAIE)



This bi-directional association between readiness dimensions emphasizes the iterative nature of psychological readiness, claiming that the readiness dimensions may strengthen each other, further along the way. For instance, better AI literacy can build self-efficacy, thus decrease anxiety and support responsible behavioural engagement and institutional support can boost multiple facets in one.

8.0 Discussion

The proposed framework takes psychological readiness as the core of the integration of AI, building upon the traditional technology-adoption thinking. The previous studies have shown the relationship between teachers' perception and acceptance of AI with AI literacy, self-efficacy, trust, and anxiety (Al-Abdullatif, 2024; Viberg et al., 2025). AI pedagogical competence is another factor related to teachers' perception of and acceptance of AI (Al-Abdullatif, 2024; Mohammed et al., 2024; Viberg et al., 2025). These are, however, usually looked at individually, not as integrated elements of a readiness construct.

The framework thus suggests that for the successful adoption of AI, intentions to use technology are insufficient. An educator might be prepared to use AI tools, but have otherwise not been proactive in preparation, for various reasons such as anxiety, lack of confidence, not knowing how to determine who, if anyone, owns the information, uncertainty about ethical implications, or lack of institutional support and support staff. This finding gains further support from recent evidence relating to the relationship between self-efficacy and anxiety in relation to AI (Wu & Wee, 2026).

The framework also addresses the increasing focus on responsible and human-centred AI. Both UNESCO (2023) and Bond et al. (2024) identify themes of safety, equity, meaningfulness and focus on human agency as themes for thinking about education use of generative AI as well as ethics, collaboration and contextual rigour as themes of importance to consider in research on AI in education. So, psychological readiness does not mean being ready to use AI, but being ready to use, question, evaluate, and govern AI responsibly.

9.0 Educational Implications

The framework has significant implications for practice in education. Professional development models for integration of AI should go beyond training to focus on dimensions of AI literacy, critical thinking, self-efficacy, managing AI-related anxiety, ethical use of AI, and being responsible in the classroom. Comprehensive preparation is important, and evidence of the positive effects of AI literacy and self-efficacy on AI acceptance and trust lends this extra strength (Al-Abdullatif, 2024; Viberg et al., 2025).



In the context of teacher education, the framework proposes integrating psychological and ethical capabilities related to AI into pre-service and in-service training. The pursuit of readiness should coincide with institutional readiness in terms of institutional support, clear AI policies, enablement for collaboration, and continuous learning. Adopting AI must therefore be approached through a combination of technological infrastructures and human capacities, as is the approach promulgated by UNESCO (2023). The framework emphasizes the need for critical AI literacy for learners, as opposed to an overly reliant approach to just copy-pasting answers generated by AI. In parallel, the OECD (2025) suggests that education systems should rethink their knowledge, skills and attitudes for an increasingly adept AI future.

10.0 Future Research Directions

The proposed model offers some empirical research directions. A subsequent study could design and test a PSFAAS based on the six dimensions proposed. Then, confirmatory factor analysis (CFA) and structural equation modelling (SEM) could be performed to determine whether these factors can be considered a second-order psychological readiness factor.

Longitudinal studies could answer whether change occurs in psychological readiness after having completed AI professional-development interventions. Comparative studies might examine the differences among teachers and among students, or between the educational level, amongst discipline(s), between cultures, and between institutions. Building on the preliminary evidence that shows that institutional support is correlated with responsible AI adoption, research can be conducted examining the possible mediation or moderation effect of AI literacy, AI self-efficacy, AI trust, or AI anxiety on the relationship between institutional support and responsible AI adoption (Viberg et al., 2025; Wu & Wee, 2026).

11.0 Conclusion

AI is revolutionizing education, but how to get there matters more than just access to AI tools or the desire to try something out. These include, among others, changes in AI literacy, self-efficacy, trust, anxiety, ethical awareness, which can be identified in the literature (Al-Abdullatif, 2024; Du et al., 2024; Viberg et al., 2025), as well as the factors of the institution.

MPRFAIE framework is, therefore, a psychological readiness as a compound construct consisting of cognitive, emotional, motivational, ethical, social, and behavioural readiness. The framework moves the dialogue from accepting AI technology to getting humans ready for AI, by tying these components to learning outcomes and responsible AI uptake. The main belief of the framework is that sustainable integration of AI into learning is realized when stakeholders in education can both cognitively engage and



have the confidence to emotionally engage, the motivation to use, the integrity to use, and the support from a social system and the ability to behave, to use AI in a meaningful way. This is aligned with the frameworks and calls for responsible use of AI in education that have arisen at a global level today (UNESCO, 2023; OECD, 2025).

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