

Relationship Between Psychological Adjustment to Artificial Intelligence and Career Self-efficacy Among Pre-service Teachers in Tertiary Institutions

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Abstract

The rapid integration of Artificial Intelligence (AI) into education and the workplace has created significant psychological and career-related challenges for pre-service teachers. This study examined the relationship between psychological adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions using social cognitive, career self-efficacy, and adjustment theories without manipulating the study variables. Three research questions and three hypotheses were used for the study. The study adopted a single-method quantitative approach using correlation research design. The population comprised of 1180 pre-service teachers in higher institutions. The sample size comprised 342 pre-service teachers (136 male and 206 female students of Alvan Ikoku University of Education and Imo State University who are practicing teaching during the 2024-2026 academic year), and a simple random sampling technique was employed to ensure that every pre-service teacher in the target population had an equal chance of being selected. First, a complete list of all eligible pre-service teachers was obtained from the academic offices of the selected tertiary institutions. This list served as the sampling frame. Each eligible student was assigned a unique identification number, and the required sample was selected using a computer-generated random number process (or a table of random numbers). This procedure minimized selection bias and enhanced the representativeness of the sample. The demographic profile indicates that the respondents consisted of the official register of all pre-service teachers predominantly (female) enrolled in the selected tertiary institutions during the 2024/2026 academic session, mostly aged 21- 25 years, primarily in the 200,300 and 400 levels of study, and largely had prior experience using AI tools. Only students who were enrolled in teacher education programmes and available during the period of data collection were included in the sampling frame. Students who had withdrawn, graduated, or were not available during data collection were excluded. The instrument used for data collection was a thirty (30) item structured questionnaire on a 4-point Likert-type scale developed and validated by experts in measurement and evaluation. A total of 315 structured questionnaires titled Psychological Adjustment to Artificial Intelligence and Career Self-Efficacy Scale (PAAICSS) were used for data collection. A total of 360 questionnaires were distributed to the selected respondents. Of these, 342 questionnaires were correctly completed and returned, while 18 questionnaires were either not returned or were incomplete and therefore excluded from the analysis. The instrument was validated, and Cronbach's alpha was used to determine the instrument's reliability index, which yielded 0.88. A Pearson product-moment correlation was used to answer both research questions and hypotheses. The findings revealed a significant relationship between psychological adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers at tertiary institutions in Imo State. The study found that pre-service teachers who adjust positively to Artificial Intelligence technologies tend to exhibit higher levels of career self-efficacy, confidence, and readiness for future teaching responsibilities. The study concluded that effective psychological adjustment to AI can enhance pre-service teachers' confidence and readiness for emerging educational and technological demands. It was therefore recommended that Workshops, seminars, and hands-on training sessions should be organized regularly to expose pre-service teachers to practical applications of Artificial Intelligence in education. This will reduce anxiety and improve adaptability to AI-driven teaching environments.

Keywords: Psychological Adjustment, Artificial Intelligence, Career Self-Efficacy, Pre-service Teachers, Teacher Education, AI Literacy.

I. Introduction

Artificial intelligence (AI) has emerged as one of the most transformative technologies in higher education, reshaping teaching, learning, assessment, and professional preparation across teacher education programmes. AI-powered tools such as intelligent tutoring systems, automated assessment platforms, and generative AI applications are increasingly being integrated into tertiary institutions to enhance instructional effectiveness and support personalized learning (Akgun & Greenhow, 2022). Consequently, pre-service teachers are expected to develop not only the technical competence to use AI but also the psychological capacity to adapt to rapidly changing educational environments.

Psychological adjustment to AI refers to an individual's ability to adapt cognitively, emotionally, and behaviourally to the opportunities and challenges associated with AI technologies. Successful psychological adjustment enables pre-service teachers to perceive AI as a resource for improving teaching practice rather than as a threat to their future profession. In contrast, poor psychological adjustment may manifest as AI anxiety, fear of technological replacement, uncertainty about future employment, and resistance to AI adoption, all of which may undermine confidence in their professional capabilities (Aydug & Altinpulluk, 2025; Akgun & Greenhow, 2022).

Career self-efficacy, derived from Bandura's (1997) Social Cognitive Theory, refers to an individual's belief in his or her ability to perform career-related tasks successfully, make sound career decisions, and overcome professional challenges. Among pre-service teachers, career self-efficacy is essential for developing commitment to the teaching profession, confidence in instructional competence, and readiness to integrate emerging technologies into classroom practice (Bandura, 1997). Research has consistently shown that individuals with high self-efficacy are more resilient, adaptable, and willing to embrace technological innovations in their professional careers.

Despite the increasing integration of AI into teacher education, many pre-service teachers continue to experience uncertainty, psychological stress, and anxiety regarding the use of AI technologies. Concerns about academic integrity, ethical issues, inadequate AI literacy, and the possibility of AI replacing certain teaching functions have created emotional and psychological challenges that may weaken their confidence in pursuing successful teaching careers (UNESCO, 2023). These concerns are particularly significant in developing countries such as Nigeria, where AI integration in teacher education is still emerging and institutional support remains uneven.

Although previous studies have examined AI acceptance, AI anxiety, digital literacy, and technology self-efficacy among pre-service teachers, limited empirical attention has been given to the relationship between psychological adjustment to AI and career self-efficacy, particularly within tertiary institutions in Nigeria. Most existing studies have focused on technological competence rather than on psychological processes through which AI influences future teachers' confidence in their professional careers. This gap limits understanding of how psychological adjustment to AI contributes to career development among pre-service teachers.

Therefore, examining the relationship between psychological adjustment to artificial intelligence and career self-efficacy among pre-service teachers is important. Findings from this study will provide evidence that can guide teacher educators, educational psychologists, curriculum developers, and policymakers in designing AI-focused training programmes that promote psychological well-being, reduce AI anxiety, and strengthen career self-efficacy among future teachers in tertiary institutions.

II. Literature Review

The increasing integration of artificial intelligence (AI) into higher education has fundamentally transformed teacher preparation by reshaping instructional practices, assessment, lesson planning, and professional development. Consequently, pre-service teachers are expected not only to acquire technical AI competencies but also to develop the psychological capacity to adapt to AI-mediated learning environments. The relationship between psychological adjustment to AI and career self-efficacy is therefore best understood through established psychological theories rather than through technology adoption perspectives alone.

Bandura's (1997) opines that Social Cognitive Theory (SCT) provides the principal theoretical lens for explaining this relationship. The theory posits that self-efficacy develops through the interaction of cognitive, behavioural, and environmental influences. Psychological adjustment to AI represents an individual's cognitive and emotional adaptation to technological change, while career self-efficacy reflects confidence in performing future professional roles. Bandura (1997) views individuals who successfully adapt to new experiences accumulate mastery experiences that strengthen self-efficacy beliefs. Applied to AI, pre-service teachers who become psychologically comfortable with AI tools are more likely to perceive themselves as capable of integrating AI into classroom instruction, thereby increasing confidence in their future teaching careers.

The explanatory strength of Social Cognitive Theory lies in its assertion that emotional reactions influence efficacy beliefs. Psychological adjustment reduces uncertainty, fear, and emotional distress associated with AI technologies, thereby promoting confidence and persistence when performing professional teaching tasks. Conversely, psychological maladjustment and AI anxiety reduce efficacy beliefs because individuals begin to doubt their competence in managing AI-supported instructional environments. This theoretical explanation has become increasingly important as AI transforms teacher education worldwide.

Complementing Social Cognitive Theory is Savickas' Career Construction Theory (2005-2013), which explains career development as a process of continuous adaptation to changing occupational environments. Career adaptability, according to Savickas, comprises concern, control, curiosity, and confidence. AI represents a major technological change requiring future teachers to reconstruct their professional identities. Psychological adjustment therefore becomes an adaptive resource that enables pre-service teachers to view AI as an opportunity rather than a threat. Career self-efficacy emerges as an outcome of successful adaptation because individuals who effectively adjust to AI-related changes become more confident in their ability to perform future teaching responsibilities. The interaction between these two theories provides a comprehensive explanation of the relationship under investigation. Whereas Social Cognitive Theory explains the psychological mechanisms through which adjustment influences efficacy beliefs, Career Construction Theory explains how adaptation to technological change contributes to career confidence and professional identity development. Together, they suggest that psychological adjustment is not merely emotional adaptation but a developmental process that shapes professional competence and career success.

Recent empirical evidence largely supports this theoretical position. A systematic review of AI-integrated professional development in teacher education found that AI training is most effective when it extends beyond technical competence to include psychological readiness, ethical awareness, adaptability, and confidence building. The review concluded that human-centred AI training strengthens technological self-efficacy and professional identity among pre-service teachers Khalid et al., 2026).

A. Theoretical Framework

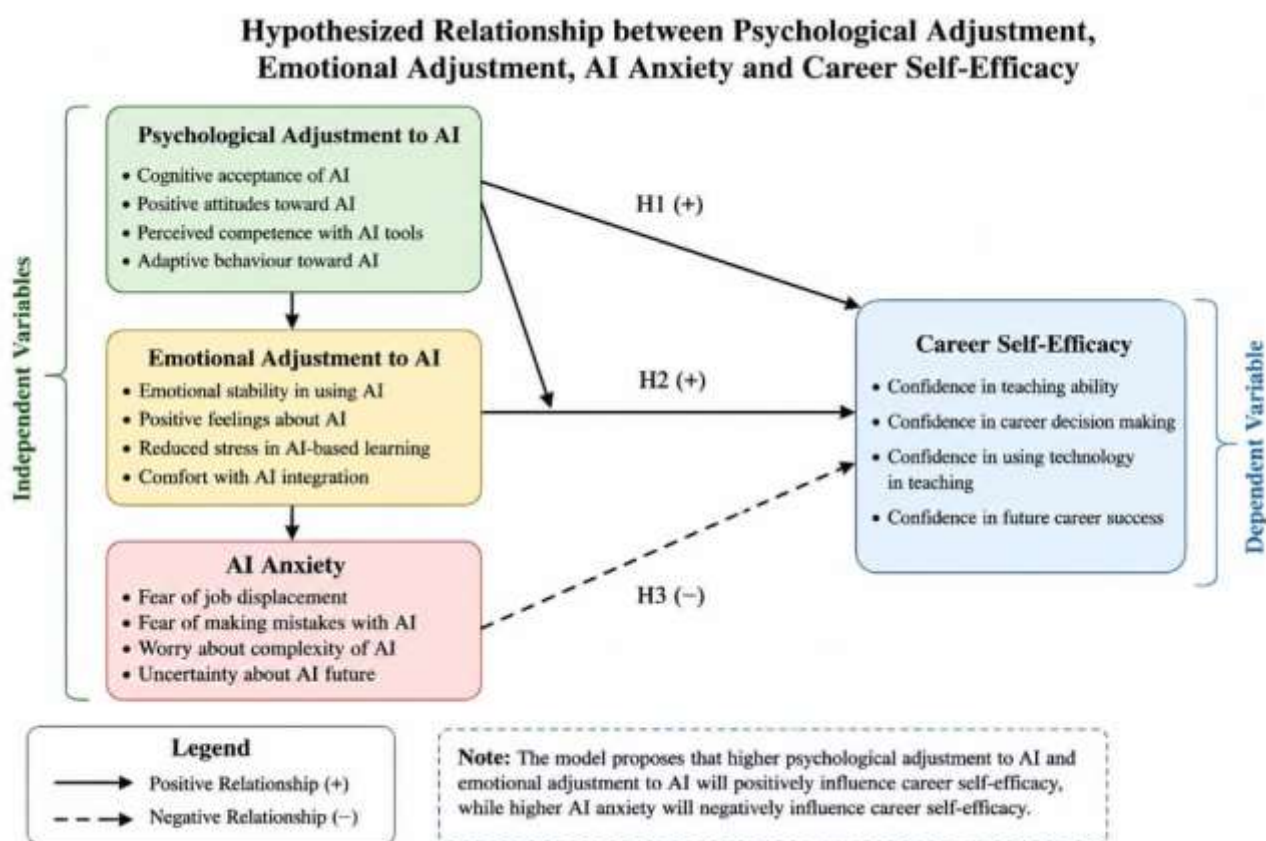
Research on pre-service teachers' preparedness for AI-integrated education reported that positive attitudes toward AI, AI literacy, self-efficacy, and changing teacher identity are closely interconnected. Guided by Social Cognitive Theory, the study demonstrated that psychological readiness enhances confidence in integrating AI into future teaching practice, thereby strengthening professional preparedness Guan et al., 2025).

Another important contribution comes from research examining the relationship between AI competencies, affective dispositions, and readiness to use AI. The findings revealed that AI competence alone was insufficient; affective factors such as interest, positive attitudes, and self-efficacy significantly predicted readiness to integrate AI into teaching. These findings reinforce Bandura's argument that cognitive competence must be accompanied by positive psychological adjustment before strong efficacy beliefs can develop Sadaf et al., 2025)

However, recent evidence also introduces an important theoretical nuance. A mixed-method study involving 293 pre-service teachers reported high levels of AI readiness alongside high

professional self-efficacy, yet found no statistically significant direct relationship between the two constructs. Qualitative findings suggested that pedagogical support, institutional culture, ethical understanding, and digital literacy may mediate or moderate the relationship. This indicates that psychological adjustment alone may not automatically produce career self-efficacy unless supported by favourable educational contexts Baimukhambetova et al., 2025)

This observation aligns with contemporary interpretations of Social Cognitive Theory, which emphasizes reciprocal determinism. Self-efficacy develops not only from internal psychological adjustment but also from supportive learning environments, observational learning, institutional encouragement, and repeated mastery experiences. Thus, psychological adjustment functions within a broader ecological system rather than operating independently. Further theoretical support is provided by recent experimental evidence examining generative AI in teacher education. The study demonstrated that AI-assisted learning significantly improved instructional design primarily because it increased self-efficacy rather than merely reducing cognitive load. Self-efficacy acted as the principal psychological mechanism linking AI use to professional competence, confirming Bandura's proposition that efficacy beliefs mediate behavioural performance and learning outcomes Bai et al., 2026).



Source: Researcher's Conceptual Framework (2026).

Broader research on teacher self-efficacy similarly argues that periods of educational reform and technological change often reduce teachers' confidence unless professional learning opportunities and institutional support are provided. Professional development, mentoring, and supportive educational environments help preserve high self-efficacy during periods of innovation, suggesting that psychological adjustment is strengthened when external support accompanies technological change (Gordon et al., 2023).

Although the emerging literature consistently recognizes the importance of psychological readiness, AI competence, and self-efficacy, important gaps remain. Most previous studies have examined AI readiness, AI acceptance, digital competence, or technology self-efficacy separately.

Comparatively few studies have explicitly investigated psychological adjustment to AI as a predictor of career self-efficacy, particularly among pre-service teachers in tertiary institutions within developing countries such as Nigeria. Furthermore, existing studies rarely integrate Social Cognitive Theory and Career Construction Theory to explain how psychological adaptation translates into professional confidence.

Therefore, the present study extends existing literature by examining psychological adjustment to AI as a multidimensional psychological construct influencing career self-efficacy among pre-service teachers. Guided by Bandura's Social Cognitive Theory and Savickas' Career Construction Theory, the study seeks to provide a more comprehensive explanation of how successful adaptation to AI contributes to stronger career confidence, professional identity, and readiness for AI-enabled teaching in tertiary institutions.

B. Research Objectives

The research objectives of this study are to investigate the relationship between psychological adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions in Imo State. Specifically, the study seeks to

1. Find out the relationship that exists between psychological adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions in Imo State.
2. Examine the relationship that exists between emotional adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions in Imo State.
3. Find out the relationship that exists between Artificial Intelligence anxiety and career self-efficacy among pre-service teachers in tertiary institutions in Imo State.

C. Research Questions

To guide and focus on the investigation, the following research questions are proposed.

1. What relationship exists between psychological adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions in Imo State?
2. What relationship exists between emotional adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions in Imo State?
3. What relationship exists between Artificial Intelligence anxiety and career self-efficacy among pre-service teachers in tertiary institutions in Imo State?

D. Research Hypotheses

The following null hypotheses will be tested at a 0.05 level of significance:

1. There is no significant relationship between psychological adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions in Imo State.
2. There is no significant relationship between emotional adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions in Imo State.
3. There is no significant relationship between Artificial Intelligence anxiety and career self-efficacy among pre-service teachers in tertiary institutions in Imo State.

III. Methodology

The study adopted a single-method quantitative approach using correlation research design. The design was considered appropriate because it enabled the researcher to examine the relationship between psychological adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions using social cognitive, career self-efficacy, and adjustment theories without manipulating the study variables. Three research questions and three hypotheses were used for the study. The population comprised of 1180 pre-service teachers in higher institutions. The sample size comprised 342 pre-service teachers (136 male and 206 female students of Alvan Ikoku University of Education and Imo State University who are practicing teaching during the 2024-2026 academic year), and a simple random sampling technique was employed to ensure that every pre-service teacher

in the target population had an equal chance of being selected. First, a complete list of all eligible pre-service teachers was obtained from the academic offices of the selected tertiary institutions. This list served as the sampling frame. Each eligible student was assigned a unique identification number, and the required sample was selected using a computer-generated random number process (or a table of random numbers). This procedure minimized selection bias and enhanced the representativeness of the sample. The demographic profile indicates that the respondents consisted of the official register of all pre-service teachers predominantly (female) enrolled in the selected tertiary institutions during the 2024/2026 academic session, mostly aged 21- 25 years, primarily in the 200,300 and 400 levels of study, and largely had prior experience using AI tools. Only students who were enrolled in teacher education programmes and available during the period of data collection were included in the sampling frame. Students who had withdrawn, graduated, or were not available during data collection were excluded. The instrument used for data collection was a twenty-six (26) item structured questionnaire on a 4-point Likert-type scale developed and validated by experts in measurement and evaluation. A total of 315 structured questionnaires titled Psychological Adjustment to Artificial Intelligence and Career Self-Efficacy Scale (PAAICSS) were used for data collection. A total of 360 questionnaires were distributed to the selected respondents. Of these, 342 questionnaires were correctly completed and returned, while 18 questionnaires were either not returned or were incomplete and therefore excluded from the analysis. The instrument was validated, and Cronbach's alpha was used to determine the instrument's reliability index, which yielded 0.88. A Pearson product-moment correlation was used to answer both research questions and hypotheses.

IV. Results

Research Question 1: What relationship exists between psychological adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions in Imo State?

Hypothesis One: There is no significant relationship between psychological adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions in Imo State

Table 1: Pearson Product-Moment correlation coefficient Analysis of psychological adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions.

		Psychological adjustment	Career Self-efficacy
Psychological adjustment	Pearson Correlation	1	0.62
	Sig. (2-tailed)		0.00
	N	342	342
Career Self-efficacy	Pearson Correlation	0.62	1
	Sig. (2-tailed)	0.00	
	N	342	342

Correlation is significant at the 0.01 level (2-tailed).

Table 1 shows there is a positive moderate correlation between psychological adjustment to artificial intelligence and career self-efficacy ($r = 0.62$), and the relationship is significant ($p=0.00$). The result means that as scores on psychological adjustment increase, there is a corresponding increase in Artificial Intelligence and career self-efficacy. Since the associated p-value was less than the 0.05 level of significance, it suggests that there is a significant positive relationship between psychological adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions in Imo State. The null hypothesis was therefore rejected.

Research Question 2: What relationship exists between emotional adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions in Imo State?

Hypothesis Two: There is no significant relationship between emotional adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions in Imo State.

Table 2: Pearson product-moment correlation coefficient analysis of emotional adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions in Imo State

		Emotional adjustment	Career Self-efficacy
Emotional adjustment	Pearson Correlation	1	0.73
	Sig. (2-tailed)		0.00
	N	342	342
Career Self-efficacy	Pearson Correlation	0.73	1
	Sig. (2-tailed)	0.00	
	N	342	342

Correlation is significant at the 0.01 level (2-tailed)

Table 2 shows there is a positive, high correlation between emotional adjustment to Artificial Intelligence and career self-efficacy ($r=0.73$), and the relationship is significant ($p=0.00$). The result means that as scores on emotional adjustment increase, there is a corresponding increase in artificial intelligence and career self-efficacy. Since the associated p-value was less than the 0.05 level of significance, it suggests that there is a significant positive relationship between emotional adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions in Imo State. The null hypothesis was therefore rejected.

Research Question 3: What relationship exists between Artificial Intelligence anxiety and career self-efficacy among pre-service teachers in tertiary institutions in Imo State?

Hypothesis Three: There is no significant relationship between Artificial Intelligence anxiety and career self-efficacy among pre-service teachers in tertiary institutions in Imo State

Table 3: Pearson Product-moment correlation coefficient Analysis of Artificial Intelligence anxiety and career self-efficacy among pre-service teachers in tertiary institutions in Imo State

		Artificial Intelligence Anxiety	Career Self-efficacy
Artificial Intelligence Anxiety	Pearson Correlation	1	0.81
	Sig. (2-tailed)		0.00
	N	342	342
Career Self-efficacy	Pearson Correlation	0.81	1
	Sig. (2-tailed)	0.00	
	N	342	342

Correlation is significant at the 0.01 level (2-tailed).

Table 3 shows there is a positive, high correlation between Artificial Intelligence anxiety and career self-efficacy ($r=0.81$), and the relationship is significant ($p=0.00$). The result means that as scores on artificial intelligence anxiety increase, there is a corresponding increase in career self-efficacy. Since the associated p-value was greater than the 0.05 level of significance, it suggests that there is no significant positive relationship between Artificial Intelligence anxiety and career self-efficacy among pre-service teachers in tertiary institutions in Imo State. The null hypothesis was therefore rejected.

V. Discussion of findings

A. Psychological adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions in Imo State

The findings of this study in Table 1 indicate that psychological adjustment to artificial intelligence is significantly related to career self-efficacy among pre-service teachers in tertiary institutions in Imo State. This relationship suggests that the ability of pre-service teachers to adapt psychologically to AI technologies is associated with their confidence in performing future teaching

responsibilities. Rather than viewing AI solely as a technological innovation, the findings imply that psychological adaptation is an important component of professional readiness in contemporary teacher education. As AI becomes increasingly integrated into instructional planning, assessment, and classroom management, pre-service teachers who adjust positively to these changes are more likely to perceive themselves as capable of succeeding in an evolving educational environment. The findings can be explained by Bandura's (1997) Social Cognitive Theory, which posits that self-efficacy develops through successful experiences, cognitive appraisal, and interactions with one's environment. Pre-service teachers who adapt positively to AI are likely to perceive technological challenges as opportunities for learning and professional growth rather than as barriers. Such positive perceptions can strengthen their confidence in their ability to teach effectively, integrate digital innovations into classroom practice, and respond successfully to the changing demands of the teaching profession. The findings also support Savickas' (2013) Career Construction Theory, which emphasizes that career confidence develops through adaptability to changing work environments. AI is transforming educational practice, and future teachers are expected to acquire new competencies continuously. Therefore, psychological adjustment to AI reflects more than acceptance of technology; it represents an adaptive resource that enables pre-service teachers to develop a stronger professional identity and greater confidence in navigating future career challenges. The findings are consistent with studies that have reported positive associations between AI readiness, technological confidence, and professional self-efficacy among pre-service teachers (Akgun & Greenhow, 2022; Aydag & Altinpulluk, 2025). These studies suggest that individuals who demonstrate greater psychological readiness for AI are more willing to engage with emerging technologies and feel more capable of applying them in professional contexts. The present study extends this body of knowledge by showing that psychological adjustment to AI is also associated with confidence in future teaching careers among pre-service teachers in Imo State.

From a practical perspective, the findings suggest that developing AI competence alone may not be sufficient to prepare future teachers for technology-rich classrooms. Teacher education programmes should also foster psychological adjustment by creating supportive learning environments where pre-service teachers can experiment with AI tools, receive constructive guidance, and build confidence through repeated practice. Such experiences are likely to enhance career self-efficacy and prepare graduates to integrate AI responsibly and effectively into teaching and learning.

B. Emotional adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions in Imo State

The findings of this study in Table 2 revealed a significant relationship between emotional adjustment to artificial intelligence and career self-efficacy among pre-service teachers in tertiary institutions in Imo State. This finding suggests that the way pre-service teachers regulate and respond to their emotions when interacting with AI technologies is associated with their confidence in performing future teaching responsibilities. The implication is that emotional adaptation to AI is an important psychological resource that enables future teachers to embrace technological innovation without undermining their professional confidence. As AI becomes increasingly integrated into teacher education, emotional resilience may be as important as technological competence in preparing teachers for modern classrooms. This finding can be interpreted using Bandura's (1997) Social Cognitive Theory, which explains that self-efficacy is influenced not only by mastery experiences but also by individuals' emotional and physiological states. Pre-service teachers who remain emotionally stable when using AI are more likely to interpret technological challenges as manageable rather than threatening. Such positive emotional experiences strengthen beliefs in their ability to perform teaching tasks successfully and adapt to emerging educational technologies. Conversely, persistent emotional distress or discomfort may weaken confidence and reduce willingness to engage with AI-supported instructional practices. The finding is also consistent with Savickas' (2013) Career Construction Theory, which views adaptability as a key resource for career development. Emotional adjustment enables individuals to cope effectively with occupational changes and technological innovations. In

the context of teacher education, emotionally well-adjusted pre-service teachers are more likely to perceive AI as an opportunity for professional growth rather than as a source of uncertainty. This adaptive response contributes to stronger career self-efficacy by reinforcing confidence in their ability to meet the evolving expectations of the teaching profession. The finding is consistent with previous studies that have reported that positive emotional experiences with AI and technology are associated with higher levels of confidence, professional readiness, and willingness to integrate digital innovations into teaching (Akgun & Greenhow, 2022; Aydug & Altinpulluk, 2025). These studies emphasize that emotional readiness enhances the effective adoption of AI by reducing fear and increasing confidence in technology-supported learning and teaching. The present study extends these findings by demonstrating that emotional adjustment to AI is associated with career self-efficacy among pre-service teachers in tertiary institutions in Imo State. From a practical perspective, the findings suggest that teacher education programmes should move beyond teaching technical AI skills alone. Institutions should also provide supportive learning environments that help pre-service teachers develop emotional resilience, confidence, and healthy coping strategies when using AI technologies. Activities such as guided practice, mentoring, collaborative learning, and discussions about the ethical and practical use of AI may help students become emotionally comfortable with AI while strengthening their confidence in their future teaching careers.

C. Artificial Intelligence anxiety and career self-efficacy among pre-service teachers in tertiary institutions in Imo State

The findings of this study in Table 3 revealed a significant relationship between artificial intelligence anxiety and career self-efficacy among pre-service teachers in tertiary institutions in Imo State. This finding suggests that pre-service teachers' emotional reactions to AI, particularly feelings of fear, uncertainty, or apprehension, are closely associated with how confident they feel about their future professional capabilities. The result implies that confidence in one's teaching career is influenced not only by pedagogical knowledge and technological competence but also by the extent to which individuals are psychologically comfortable with emerging technologies. As AI continues to reshape educational practices, anxiety surrounding its use may become a critical factor affecting future teachers' professional confidence and readiness. This finding can be interpreted within the framework of Bandura's (1997) Social Cognitive Theory, which posits that self-efficacy beliefs are partly shaped by emotional and physiological states. Individuals who experience persistent anxiety often perceive challenging situations as threatening, thereby diminishing their confidence in their ability to perform effectively. In the context of AI integration, pre-service teachers who experience high levels of AI anxiety may doubt their ability to adapt to technologically driven classrooms, which can undermine their beliefs about their future success as teachers. Conversely, lower levels of AI anxiety may enable individuals to engage more confidently with AI technologies and strengthen their perceptions of professional competence. The findings also align with Savickas' (2013) Career Construction Theory, which emphasizes adaptability as an essential resource for career development. Anxiety may hinder adaptability by reducing individuals' willingness to explore, experiment with, and embrace technological innovations. Pre-service teachers who perceive AI as a threat rather than an opportunity may experience difficulty constructing a confident professional identity in an educational landscape increasingly influenced by technology. Thus, managing AI-related anxiety appears to be an important aspect of developing strong career self-efficacy and preparing future teachers for contemporary educational environments. The present findings are consistent with studies indicating that technology-related anxiety can negatively influence confidence, readiness, and willingness to adopt emerging technologies in educational settings (Akgun & Greenhow, 2022; Aydug & Altinpulluk, 2025). These studies suggest that anxiety often reduces engagement with technology and limits opportunities for mastery experiences, which are crucial for developing self-efficacy. The current study extends this body of knowledge by demonstrating that AI anxiety is not merely a technological concern but also a career-related issue that may shape pre-service teachers' confidence in their future professional roles within the context of tertiary institutions in Imo State. From a practical perspective, the findings

highlight the need for teacher education programmes to address the psychological challenges associated with AI integration. Providing AI literacy training, guided practice, mentoring opportunities, and supportive learning environments may help reduce anxiety and foster greater confidence in future teaching abilities. Such interventions may not only improve AI readiness but also strengthen pre-service teachers' beliefs in their capacity to succeed in an increasingly technology-driven profession.

VI. Conclusion

Based on the findings of the study, it was concluded that there is a significant relationship between psychological adjustment to Artificial Intelligence and career self-efficacy among pre-service teachers in tertiary institutions in Imo State. The study established that pre-service teachers who can adjust positively to Artificial Intelligence technologies tend to exhibit higher levels of career self-efficacy, confidence, and readiness for future teaching responsibilities. The study further revealed that psychological adjustment plays a crucial role in shaping how pre-service teachers perceive Artificial Intelligence and its impact on their future careers. Those who demonstrate positive emotional adjustment, adaptability, and reduced Artificial Intelligence anxiety are more likely to develop strong belief in their ability to succeed in their chosen teaching profession. Conversely, pre-service teachers who experience difficulty in adjusting psychologically to Artificial Intelligence tend to exhibit lower career self-efficacy and increased uncertainty about their professional future. In addition, the study concluded that Artificial Intelligence anxiety is an important factor influencing career self-efficacy among pre-service teachers. High levels of anxiety toward Artificial Intelligence were associated with reduced confidence and weaker career expectations, while lower anxiety levels promoted stronger professional self-belief and positive career outlook. Therefore, the study concludes that psychological adjustment to Artificial Intelligence is a key determinant of career self-efficacy among pre-service teachers. Enhancing emotional stability, technological adaptability, and positive perception of Artificial Intelligence will significantly improve their confidence and preparedness for teaching in an evolving technological educational environment.

VII. Recommendations

Based on the findings, the following recommendations were made:

1. Teacher education institutions should incorporate Artificial Intelligence literacy into their curriculum to help pre-service teachers develop adequate knowledge, skills, and positive attitudes toward AI technologies. This will improve their psychological adjustment and enhance career self-efficacy.
2. Workshops, seminars, and hands-on training sessions should be organized regularly to expose pre-service teachers to practical applications of Artificial Intelligence in education. This will reduce anxiety and improve adaptability to AI-driven teaching environments.
3. Tertiary institutions should ensure that pre-service teachers have access to AI-enabled instructional tools such as intelligent tutoring systems, learning analytics platforms, and educational chatbots to enhance familiarity and confidence in using technology.

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Appendices

Below are 30 standardized questionnaire items. The items are measured on a 4-point Likert scale.

Response Options:

Strongly Agree (SA) = 4

Agree (A) = 3

Disagree (D) = 2

Strongly Disagree (SD) = 1

Psychological Adjustment to Artificial Intelligence and Career Self-Efficacy Scale (PAAI-CSES)

1. I have successfully adjusted to the use of artificial intelligence technologies in my teacher education programme.
2. My ability to adapt to artificial intelligence has increased my confidence in becoming an effective teacher.
3. I believe that adjusting to artificial intelligence will enhance my competence in my future teaching career.
4. The more comfortable I become with using artificial intelligence, the more confident I feel about my professional teaching abilities.
5. I am confident that I can effectively integrate artificial intelligence into my future classroom activities.
6. My psychological adjustment to artificial intelligence has strengthened my belief that I can overcome challenges in the teaching profession.
7. My experience with artificial intelligence has improved my confidence in making sound career decisions as a future teacher.
8. I believe that adapting to artificial intelligence has prepared me to succeed in technology-driven educational environments.
9. My positive adjustment to artificial intelligence has increased my confidence in performing instructional and classroom management tasks.
10. Overall, my psychological adjustment to artificial intelligence has enhanced my career self-efficacy as a pre-service teacher.

Emotional Adjustment to Artificial Intelligence and Career Self-Efficacy Scale (EAAI-CSES)

11. I remain emotionally calm when using artificial intelligence tools for academic and teaching-related activities.

12. My ability to manage my emotions while using artificial intelligence has increased my confidence in becoming an effective teacher.
13. I feel emotionally comfortable integrating artificial intelligence into learning activities, which strengthens my belief in my teaching abilities.
14. Even when I encounter challenges with artificial intelligence, I remain emotionally stable and confident in my future teaching career.
15. My positive emotional response to artificial intelligence enhances my confidence in carrying out teaching responsibilities.
16. I can effectively control feelings of frustration when artificial intelligence tools do not function as expected, and this increases my confidence in my professional abilities.
17. My emotional adjustment to artificial intelligence has strengthened my belief that I can successfully cope with challenges in the teaching profession.
18. I feel emotionally prepared to use artificial intelligence in my future classroom, which increases my confidence in my career as a teacher.
19. My ability to adapt emotionally to artificial intelligence motivates me to pursue a successful teaching career.
20. Overall, my emotional adjustment to artificial intelligence has enhanced my career self-efficacy as a pre-service teacher.

Artificial Intelligence Anxiety and Career Self-Efficacy Scale (AIA-CSES)

21. I worry that my limited ability to use artificial intelligence will negatively affect my future teaching career.
22. I feel anxious when I am required to use artificial intelligence tools for teaching and learning activities.
23. My fear of making mistakes while using artificial intelligence reduces my confidence in becoming an effective teacher.
24. I am concerned that I may not be able to keep up with future developments in artificial intelligence in education.
25. I feel nervous that artificial intelligence may reduce the importance of my role as a future teacher.
26. Anxiety about using artificial intelligence lowers my confidence in performing teaching-related tasks effectively.
27. I become uneasy when I think about integrating artificial intelligence into my future classroom practice.
28. My concerns about artificial intelligence make me less confident in my ability to succeed in the teaching profession.
29. I believe that overcoming my anxiety about artificial intelligence will improve my confidence in my future teaching career.
30. Overall, my level of anxiety about artificial intelligence influences my confidence in my ability to succeed as a future teacher.