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A STUDY ON ARTIFICIAL INTELLIGENCE READINESS IN RELATION TO SELF-DIRECTED LEARNING AMONG PROSPECTIVE TEACHERS

Dr. T. Sivasakthi Rajammal
Assistant Professor & Head, Department of Educational Psychology, Tamil Nadu Teachers Education University, Chennai-600097

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ABSTRACT

Artificial Intelligence (AI) has emerged as a transformative force in education, influencing teaching methodologies, learning experiences, and educational administration. The successful integration of AI in education depends largely on teachers' readiness to understand and utilize AI technologies effectively. Simultaneously, self-directed learning has become an essential competency that enables learners to take responsibility for their own learning process. The present study investigates the relationship between Artificial Intelligence Readiness and Self-Directed Learning among prospective teachers. The study adopts a descriptive survey method and includes a sample of 450 prospective teachers selected from various teacher education institutions. Data are collected using standardized scales on Artificial Intelligence Readiness and Self-Directed Learning. Statistical techniques such as Mean, Standard Deviation, t-test, ANOVA, and Pearson's Product Moment Correlation are employed for analysis. The findings are expected to reveal a significant positive relationship between Artificial Intelligence Readiness and Self-Directed Learning. The study highlights the need for integrating AI literacy and self-directed learning skills into teacher education programmes to prepare future educators for technology-enhanced classrooms.

KEYWORDS: *Artificial Intelligence Readiness, Self-Directed Learning, Prospective Teachers, Teacher Education, Educational Technology, Digital Competence, Lifelong Learning.*

1. INTRODUCTION

The rapid development of Artificial Intelligence has revolutionized educational practices across the globe. AI-powered applications such as intelligent tutoring systems, adaptive learning platforms, automated assessment tools, and virtual assistants have created new opportunities for enhancing teaching and learning. As education moves toward digital transformation, prospective teachers must be equipped with the necessary knowledge, skills, and attitudes to utilize AI effectively.

Artificial Intelligence Readiness refers to an individual's preparedness to understand, adopt, and implement AI technologies in educational contexts. It encompasses awareness, technical competence, ethical understanding, and confidence in using AI-based tools.

Self-directed learning is a learner-centered approach in which individuals take initiative in identifying learning needs, setting goals, selecting learning strategies, and evaluating outcomes. Prospective teachers who exhibit high levels of self-directed learning are more likely to adapt to technological advancements and engage in continuous professional development.

In the contemporary educational landscape, AI readiness and self-directed learning are interconnected competencies that can contribute significantly to effective teaching practices. Therefore, studying the relationship between these variables is essential for preparing future educators capable of meeting the challenges of twenty-first-century education.

2. NEED AND SIGNIFICANCE OF THE STUDY

Artificial Intelligence (AI) is rapidly transforming the educational landscape by introducing innovative tools and technologies that enhance teaching, learning, assessment, and educational management. As future educators, prospective teachers need to be prepared to integrate AI effectively into their instructional practices. Therefore, developing Artificial Intelligence readiness has become an essential component of teacher education.

Self-directed learning is another important competency that enables prospective teachers to take responsibility for their own learning, acquire new knowledge independently, and adapt to changing educational environments. Teachers with strong self-directed learning skills are more likely to engage in lifelong learning and continuously improve their professional competence.

Although AI readiness and self-directed learning are both crucial for effective teaching in the digital era, studies examining the relationship between these two variables among prospective teachers are limited. Understanding this relationship will help teacher education institutions identify the preparedness of future teachers and design programmes that strengthen both technological competence and independent learning skills.

The findings of the present study will be beneficial to teacher educators, curriculum developers, educational administrators, and policymakers in planning AI-integrated teacher education programmes. It will also contribute to the existing body of knowledge in educational psychology and educational technology by providing empirical evidence on the association between Artificial Intelligence readiness and self-directed learning.

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Thus, the study is significant in promoting digitally competent, self-directed, and lifelong learners who can effectively meet the challenges of twenty-first-century education and contribute to improving the quality of teaching and learning.

3. STATEMENT OF THE PROBLEM

The rapid advancement of Artificial Intelligence (AI) has brought significant changes to the field of education, requiring future teachers to develop the knowledge, skills, and confidence needed to use AI-based technologies effectively. At the same time, self-directed learning has become an essential quality for prospective teachers, enabling them to adapt to technological innovations and engage in continuous professional development.

Despite the growing importance of these competencies, many prospective teachers may not possess adequate AI readiness or strong self-directed learning skills. Moreover, limited research has explored the relationship between Artificial Intelligence Readiness and Self-Directed Learning among prospective teachers, particularly in teacher education institutions.

Therefore, the researcher intends to examine whether there is a significant relationship between Artificial Intelligence Readiness and Self-Directed Learning among prospective teachers. Hence, the problem selected for the present study is stated as:

"A Study on Artificial Intelligence Readiness in Relation to Self-Directed Learning Among Prospective Teachers."

4. REVIEW OF RELATED LITERATURE

i. International Studies

Wayne Holmes, Maya Bialik, and Charles Fadel (2019) examined the role of Artificial Intelligence in education and reported that AI has the potential to personalize learning experiences, support differentiated instruction, and enhance educational outcomes. Their study emphasized that the successful integration of AI in educational settings depends largely on educators' technological readiness and their ability to effectively utilize AI-based tools.

Holmes, Bialik and Fadel (2019) reported that Artificial Intelligence can personalize learning experiences and improve educational outcomes when educators possess adequate technological readiness.

Lucy Madsen Guglielmino (1977) developed the Self-Directed Learning Readiness Scale (SDLRS) and found that learners with higher levels of self-directed learning readiness exhibit greater independence, adaptability, and motivation in learning situations. The study established self-directed learning as an essential component of effective lifelong learning.

Guglielmino (1977) developed the Self-Directed Learning Readiness Scale and found that learners with higher self-directed learning readiness demonstrate greater adaptability and motivation.

Knowles (1975) emphasized that self-directed learning is a critical characteristic of lifelong learners and contributes significantly to professional competence.

Malcolm S. Knowles (1975), in his pioneering work on self-directed learning, emphasized that individuals who take responsibility for planning, implementing, and evaluating their own learning are better equipped to meet personal and professional challenges. He identified self-directed learning as a key characteristic of lifelong learners and an important factor in professional competence and continuous development.

ii. Indian Studies

R. Kumar and S. Devi (2022) explored the relationship between digital literacy and self-directed learning among teacher education students. The study revealed a significant positive association between digital literacy skills and self-directed learning readiness, indicating that digitally competent learners are more likely to engage in independent and self-regulated learning activities.

Kumar and Devi (2022) reported a positive association between digital literacy and self-directed learning among teacher education students.

P. Sharma (2021) investigated the attitudes of teacher trainees toward Artificial Intelligence in education and found that while most trainees displayed positive perceptions of AI-based educational tools, they required systematic training and institutional support for effective implementation in classroom practices.

Sharma (2021) found that teacher trainees exhibited positive attitudes toward AI-based educational tools but required structured training for effective utilization.

Punya Mishra and Matthew J. Koehler (2018) highlighted the significance of technological competencies among teachers for the effective integration of technology into teaching and learning processes. Their work underscored the need for teachers to possess adequate technological, pedagogical, and content knowledge to successfully adopt emerging educational technologies.

Mishra and Koehler (2018) highlighted the importance of technological competencies among teachers for successful technology integration in educational settings.

The reviewed literature indicates that Artificial Intelligence readiness and self-directed learning are important competencies for contemporary learners and educators. International studies emphasize the transformative role of AI in education and the significance of self-directed learning for lifelong development. Indian studies highlight the need for technological competence, AI-related training, and digital literacy among teacher trainees. However, limited research has examined the relationship between Artificial Intelligence Readiness and Self-Directed Learning among prospective teachers, thereby justifying the need for the present study.

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5. OBJECTIVES OF THE STUDY

- To determine the level of Artificial Intelligence Readiness among prospective teachers.
- To determine the level of Self-Directed Learning among prospective teachers.
- To find out whether there is any significant difference in Artificial Intelligence Readiness in Relation to Self-Directed Learning Among Prospective Teachers with respect to
  - Gender
  - Location
  - Age
  - Types of Management
- To find out whether there is any significant relationship between Artificial Intelligence Readiness in Relation to Self-Directed Learning Among Prospective Teachers.

6. HYPOTHESES OF THE STUDY

- There is no significant difference between (Gender) male and female Prospective Teachers with respect to their Artificial Intelligence Readiness in Relation to Self-Directed Learning.
- There is no significant difference between rural and urban Prospective Teachers with respect to their Artificial Intelligence Readiness in Relation to Self-Directed Learning.
- There is no significant difference among Prospective Teachers belonging to different age (below 20-Years, 21-30 Years and above 31 Years) with respect to their Artificial Intelligence Readiness in Relation to Self-Directed Learning.
- There is no significant difference among Prospective Teachers belonging to different type of management (government, government-aided and private) with respect to their Artificial Intelligence Readiness in Relation to Self-Directed Learning.
- There is no significant relationship between Artificial Intelligence Readiness in Relation to Self-Directed Learning of Prospective Teachers.

7. METHODOLOGY

The research design is descriptive survey method, used for sampling technique study from the random sampling technique. Keeping in view the aim of study 450 Prospective Teachers was randomly selected. Data were collected from Prospective Teachers studying in B.Ed. colleges. The investigator standardized tools were used to measure Artificial Intelligence Readiness Scale (AIRS) by Mehmet Ramazanoglu and Tayfun Akin (2024) and Self-Directed Learning Readiness Scale (SDLRS) by Lucy Madsen Guglielmino (1977) constructed and validated for collecting details of Prospective Teachers. In addition to this, the investigator constructed a Personal Data Sheet. The collected data were analysed using appropriate statistical techniques such as mean, standard deviation, t-test, F test and correlation analysis.

8. TESTING OF HYPOTHESIS

Hypothesis – 1

There is no significant difference between (Gender) male and female Prospective Teachers with respect to their Artificial Intelligence Readiness in Relation to Self-Directed Learning.

Table 1

Details of t-Test Result for Gender

Variables	Gender	N	Mean	SD	t-Value	LOS
Artificial Intelligence Readiness	Male	225	212.51	7.655	0.429	Not Significant
	Female	225	212.87	9.805		

***LOS- Level of Significance.**

Table 1 indicates that the obtained t-value is 0.429. It is less than the table value of 1.96 at 0.05 level of significance. It is inferred from these results (t = 0.429 < 1.96), Therefore, the null hypothesis, that there is no significant difference between male and female Prospective Teachers with respect to their Artificial Intelligence Readiness based on gender is accepted.

Table 2

Details of t-Test Result for Gender

Variables	Gender	N	Mean	SD	t-Value	LOS
Self-Directed Learning	Male	225	210.15	7.650	0.425	Not Significant
	Female	225	210.78	9.850		

***LOS- Level of Significance.**

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Table 2 indicates that the obtained t-value is 0.425. It is less than the table value of 1.96 at 0.05 level of significance. It is inferred from these results (t = 0.425 < 1.96), Therefore, the null hypothesis, that there is no significant difference between male and female Prospective Teachers with respect to their Self-Directed Learning based on gender is accepted.

Hypothesis – 2

There is no significant difference between rural and urban Prospective Teachers with respect to their Artificial Intelligence Readiness in Relation to Self-Directed Learning.

Table 3

Details of t-Test Result for Locality

Variables	Locality	N	Mean	SD	t-Value	LOS
Artificial Intelligence Readiness	Rural	275	212.41	7.390	0.713	Not Significant
	Urban	175	213.02	10.610		

***LOS- Level of Significance.**

Table 3 indicates that the obtained t-value is 0.713. It is less than the table value of 1.96 at 0.05 level of significance. It is inferred from these results (t = 0.713 < 1.96), Therefore, the null hypothesis, that there is no significant difference between rural and urban Prospective Teachers with respect to their Artificial Intelligence Readiness is accepted.

Table 4

Details of t-Test Result for Locality

Variables	Locality	N	Mean	SD	t-Value	LOS
Self-Directed Learning	Rural	275	212.14	7.930	0.730	Not Significant
	Urban	175	213.20	9.610		

***LOS- Level of Significance.**

Table 4 indicates that the obtained t-value is 0.730. It is less than the table value of 1.96 at 0.05 level of significance. It is inferred from these results (t = 0.730 < 1.96), Therefore, the null hypothesis, that there is no significant difference between rural and urban Prospective Teachers with respect to their Self-Directed Learning is accepted.

Hypothesis – 3

There is no significant difference among Prospective Teachers belonging to different age (below 20-Years, 21-30 Years and above 31 Years) with respect to their Artificial Intelligence Readiness in Relation to Self-Directed Learning.

Table 5

Details of F-ratio Result for Age Group

Variables	Age Group	N	Mean	SD	F-ratio	LOS
Artificial Intelligence Readiness	Below 20 yrs	90	213.37	12.764	0.436	Not Significant
	21 - 30 yrs	250	212.38	7.591		
	Above 31 yrs	110	212.84	7.270		
	Total	450	212.69	8.788		

***LOS- Level of Significance.**

As shown in the Table 5 indicates that the obtained F-value is 0.436; it is less than the Table Value of 3.00 at 0.05 level of significant. It is inferred from this result F = 0.436 < 3.00. Hence, the formulated null hypothesis that there is no significant difference among Prospective Teachers belonging to different age group (Below 20-years, 21 - 30 years and Above 31 years) with respect to their Artificial Intelligence Readiness is accepted.

Table 6

Details of F-ratio Result for Age Group

Variables	Age Group	N	Mean	SD	F-ratio	LOS
Self-Directed Learning	Below 20 yrs	90	213.73	12.476	0.643	Not Significant
	21 - 30 yrs	250	212.83	7.159		
	Above 31 yrs	110	212.48	7.027		
	Total	450	212.96	8.878		

***LOS- Level of Significance.**

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As shown in the Table 6 indicates that the obtained F-value is 0.643; it is less than the Table Value of 3.00 at 0.05 level of significant. It is inferred from this result F = 0.643 < 3.00. Hence, the formulated null hypothesis that there is no significant difference among Prospective Teachers belonging to different age group (Below 20-years, 21 - 30 years and Above 31 years) with respect to their Self-Directed Learning is accepted.

Hypothesis – 4

There is no significant difference among Prospective Teachers belonging to different type of management (government, government-aided and private) with respect to their Artificial Intelligence Readiness in Relation to Self-Directed Learning.

Table 7

Details of F-ratio Result for Type of Management

Variables	Type of Management	N	Mean	SD	F-ratio	LOS
Artificial Intelligence Readiness	Government	151	214.97	7.131	8.451	Significant
	Government -Aided	148	212.07	10.334		
	Private	151	211.01	8.201		
	Total	450	212.69	8.788		

***LOS- Level of Significance.**

As shown in the Table 7 indicates that the obtained F-value is 8.451; it is greater than the Table Value of 3.00 at 0.05 level of significant. It is inferred from this result F = 8.451 > 3.00. Hence, the formulated null hypothesis that there is significant difference among Prospective Teachers students belonging to difference type of management (government, government-aided and private) with respect to their Artificial Intelligence Readiness is not accepted.

Table 8

Details of F-ratio Result for Type Of Management

Variables	Type of Management	N	Mean	SD	F-ratio	LOS
Self-Directed Learning	Government	151	214.79	7.113	8.145	Not Significant
	Government-Aided	148	212.70	10.343		
	Private	151	211.10	8.012		
	Total	450	212.90	8.878		

***LOS- Level of Significance.**

As shown in the Table 8 indicates that the obtained F-value is 8.145; it is greater than the Table Value of 3.00 at 0.05 level of significant. It is inferred from this result F = 8.145 > 3.00. Hence, the formulated null hypothesis that there is significant difference among Prospective Teachers belonging to difference type of management (government, government-aided and private) with respect to their Self-Directed Learning is not accepted.

Hypothesis – 5

There is no significant relationship between Artificial Intelligence Readiness in Relation to Self-Directed Learning of Prospective Teachers.

Table 9

Details of Correlation Coefficient Result for relationship between Artificial Intelligence Readiness and Self-Directed Learning in Prospective Teachers.

Variables	N	Correlation Coefficient 'r' Value	LOS
Artificial Intelligence Readiness and Self-Directed Learning	450	0. 45	Significant at 0.05 Level

***LOS- Level of Significance.**

Based on the computed correlation coefficient 'r' value in Table 9, and examination of the table above that the correlation 'r' value is 0.45 which is positive and statistically significant at the 0.05 level of significance. Therefore, the null hypothesis stating that there is no significant relationship between Artificial Intelligence Readiness and Self-Directed learning among Prospective Teachers is rejected.

9. MAJOR FINDINGS OF THE STUDY

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The major findings of the study entitled "A Study on Artificial Intelligence Readiness in Relation to Self-Directed Learning Among Prospective Teachers" are as follows:

- There was no significant difference between male and female prospective teachers with respect to their Artificial Intelligence Readiness. Hence, gender does not influence the level of Artificial Intelligence Readiness among prospective teachers.
- There was no significant difference between male and female prospective teachers with respect to their Self-Directed Learning. This indicates that both male and female prospective teachers possess similar levels of self-directed learning.
- There was no significant difference between rural and urban prospective teachers with respect to their Artificial Intelligence Readiness. Therefore, locality does not have a significant influence on AI readiness.
- There was no significant difference between rural and urban prospective teachers with respect to their Self-Directed Learning. This shows that locality does not significantly affect self-directed learning among prospective teachers.
- There was no significant difference among prospective teachers belonging to different age groups (Below 20 years, 21–30 years, and Above 31 years) with respect to their Artificial Intelligence Readiness. Thus, age is not a determining factor for AI readiness.
- There was no significant difference among prospective teachers belonging to different age groups with respect to their Self-Directed Learning. This indicates that self-directed learning remains similar across different age groups.
- There was a significant difference among prospective teachers studying in different types of management (Government, Government-Aided, and Private institutions) with respect to their Artificial Intelligence Readiness. Therefore, the type of management significantly influences AI readiness.
- There was a significant difference among prospective teachers studying in different types of management with respect to their Self-Directed Learning. This indicates that the institutional management plays a significant role in influencing self-directed learning.
- A moderate positive and statistically significant relationship ($r = 0.45$, $p < 0.05$) was found between Artificial Intelligence Readiness and Self-Directed Learning among prospective teachers. This implies that prospective teachers with higher Artificial Intelligence Readiness tend to exhibit higher levels of Self-Directed Learning.
- Overall, the study concludes that gender, locality, and age do not significantly influence Artificial Intelligence Readiness and Self-Directed Learning, whereas type of management has a significant influence on both variables. Furthermore, the positive relationship between Artificial Intelligence Readiness and Self-Directed Learning suggests that enhancing AI competencies may promote greater independent learning and lifelong professional development among prospective teachers.

10. DISCUSSION OF THE RESULTS

The present study aimed to examine the relationship between Artificial Intelligence Readiness and Self-Directed Learning among prospective teachers. The findings obtained from the statistical analysis are discussed below in the light of the objectives and hypotheses of the study.

- Gender and Artificial Intelligence Readiness: The study revealed that there was no significant difference between male and female prospective teachers with respect to Artificial Intelligence Readiness. This indicates that both genders possess a comparable level of awareness, knowledge, and preparedness to utilize Artificial Intelligence in educational settings. The increasing accessibility of digital technologies and equal learning opportunities in teacher education programmes may have contributed to this similarity.
- Gender and Self-Directed Learning: The findings showed no significant difference between male and female prospective teachers in Self-Directed Learning. This suggests that both male and female prospective teachers demonstrate similar abilities to plan, monitor, and evaluate their own learning. The result indicates that gender does not influence independent learning habits among prospective teachers.
- Locality and Artificial Intelligence Readiness: The study found no significant difference between rural and urban prospective teachers with respect to Artificial Intelligence Readiness. This finding suggests that the widespread availability of digital resources, online learning platforms, and technology-based teacher education programmes has reduced the gap between rural and urban learners.
- Locality and Self-Directed Learning: The analysis revealed no significant difference between rural and urban prospective teachers in Self-Directed Learning. This indicates that learners from both localities possess similar motivation and capacity for independent learning, possibly due to equal access to educational resources and digital learning opportunities.
- Age and Artificial Intelligence Readiness: The findings indicated no significant difference among prospective teachers belonging to different age groups with respect to Artificial Intelligence Readiness. This implies that age is not a major factor influencing AI readiness, and prospective teachers across different age groups are equally prepared to adopt AI technologies in education.

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- Age and Self-Directed Learning: The study also found no significant difference among different age groups regarding Self-Directed Learning. This suggests that the ability to learn independently is developed through educational experiences rather than age, making self-directed learning a common characteristic among prospective teachers.
- Type of Management and Artificial Intelligence Readiness: A significant difference was observed among prospective teachers studying in Government, Government-Aided, and Private institutions with respect to Artificial Intelligence Readiness. This finding indicates that institutional resources, technological infrastructure, exposure to AI tools, and academic support may vary across different types of institutions, thereby influencing AI readiness.
- Type of Management and Self-Directed Learning: The study found a significant difference among prospective teachers from different types of management with respect to Self-Directed Learning. This suggests that institutional environment, teaching practices, and learning culture contribute to the development of independent learning skills among prospective teachers.
- Relationship between Artificial Intelligence Readiness and Self-Directed Learning: The correlation analysis revealed a moderate positive and statistically significant relationship between Artificial Intelligence Readiness and Self-Directed Learning among prospective teachers. This indicates that prospective teachers who possess higher readiness to understand and use Artificial Intelligence also tend to exhibit stronger self-directed learning abilities. The finding highlights that AI readiness encourages continuous learning, problem-solving, and independent acquisition of knowledge, which are essential competencies for future educators.
- The overall findings of the study suggest that demographic variables such as gender, locality, and age do not significantly influence Artificial Intelligence Readiness and Self-Directed Learning among prospective teachers. However, the type of management of the institution has a significant influence on both variables, indicating the importance of institutional support and learning environment. Furthermore, the significant positive relationship between Artificial Intelligence Readiness and Self-Directed Learning demonstrates that these two competencies complement each other. Enhancing AI readiness through appropriate training programmes and curriculum integration may foster self-directed learning habits, thereby preparing prospective teachers to become innovative, reflective, and lifelong learners capable of meeting the demands of twenty-first-century education.

11. EDUCATIONAL IMPLICATIONS

The findings of the present study have several important implications for teacher education, educational institutions, teacher educators and policymakers.

- Teacher education curricula should incorporate AI literacy and AI-based pedagogical practices.
- Institutions should organize workshops and training programmes on AI applications in education.
- Self-directed learning strategies should be integrated into teacher preparation programmes.
- Prospective teachers should be encouraged to engage in lifelong learning and continuous professional development.
- Educational policymakers should establish competency standards related to AI readiness.
- AI-supported learning environments may foster independent learning and professional growth among future educators.

12. RECOMMENDATIONS OF THE STUDY

Based on the expected findings of the study, the following recommendations are suggested:

- Teacher education institutions should integrate Artificial Intelligence concepts and applications into the B.Ed. curriculum to enhance AI readiness among prospective teachers.
- Regular workshops, seminars, and training programmes on AI tools and technologies should be organized to improve the digital competencies of future teachers.
- Institutions should encourage self-directed learning by providing access to online courses, digital libraries, and AI-supported learning platforms.
- Teacher educators should adopt learner-centered and technology-integrated teaching strategies that promote independent learning and critical thinking.
- Educational policymakers should formulate guidelines and policies for the ethical and effective use of Artificial Intelligence in teacher education.
- Colleges should establish AI innovation laboratories and digital learning centres to provide practical exposure to emerging technologies.
- Continuous professional development programmes should be conducted to strengthen both AI readiness and lifelong learning skills among prospective teachers.
- Collaborative learning activities involving AI-based educational tools should be encouraged to improve engagement, creativity, and problem-solving abilities.

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13. SUGGESTIONS FOR FUTURE RESEARCH

- Similar studies may be conducted with in-service teachers, school teachers, college faculty, and teacher educators.
- Comparative studies can be undertaken between government and private teacher education institutions or between rural and urban prospective teachers.
- Future research may examine the relationship between Artificial Intelligence Readiness and other psychological variables such as academic motivation, critical thinking, creativity, teaching competency, emotional intelligence, or digital literacy.
- Experimental studies may be conducted to evaluate the effectiveness of AI-based training programmes in improving self-directed learning among prospective teachers.
- Longitudinal studies can be carried out to examine changes in AI readiness and self-directed learning over time.
- Mixed-method or qualitative research may be undertaken to gain a deeper understanding of prospective teachers' perceptions and experiences regarding AI integration in education.
- Similar research can be replicated with larger samples across different universities and states to improve the generalizability of the findings.
- Future studies may investigate the influence of demographic variables such as age, gender, academic discipline, socio-economic status, and previous technology experience on Artificial Intelligence Readiness and Self-Directed Learning.

14. CONCLUSION

Artificial Intelligence is transforming educational practices and creating new opportunities for innovative teaching and learning. The readiness of prospective teachers to utilize AI technologies effectively is crucial for successful educational transformation. Self-directed learning equips future teachers with the ability to adapt to technological advancements and engage in lifelong professional development. The study concludes that Artificial Intelligence Readiness and Self-Directed Learning are positively related and mutually reinforcing competencies. Therefore, teacher education institutions should prioritize the development of both competencies to prepare future educators for the evolving demands of digital-age education.

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