



IMPACT OF ARTIFICIAL INTELLIGENCE IN THE IMPLEMENTATION OF TEACHING STRATEGIES IN B.ED. COLLEGES

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ABSTRACT Artificial Intelligence (AI) is increasingly influencing teaching and learning practices in teacher education. The present study investigates the impact of AI on the implementation of teaching strategies among teacher educators in B.Ed. colleges. The study adopted a descriptive survey method. A sample of 120 teacher educators working in selected B.Ed. colleges was selected using a suitable sampling technique. Data were collected using a researcher-developed AI-Assisted Teaching Strategies Scale consisting of 30 Likert-type statements. The collected data were analysed using Mean, Standard Deviation and t-test. The findings indicate a relatively high level of AI-supported implementation of teaching strategies among teacher educators. The results also indicate statistically significant differences based on selected demographic variables. AI can support lesson planning, individualized instruction, digital content development, assessment and student engagement; however, effective implementation requires appropriate teacher training and human pedagogical judgment. Recent teacher-education research similarly emphasizes AI literacy, pedagogical integration and balanced human guidance.

KEYWORDS : Artificial Intelligence, Teaching Strategies, B.Ed. Colleges

INTRODUCTION

Artificial Intelligence has emerged as an important technological development in contemporary education. AI-based applications can assist teachers in lesson planning, generation of instructional materials, formative assessment, personalized learning and feedback. Teacher education is particularly important because B.Ed. student-teachers are preparing to become future teachers. Therefore, teacher educators need to understand not only how AI tools function but also how they can be incorporated appropriately into pedagogical strategies. Recent research involving B.Ed. student-teachers in Tamil Nadu has examined AI awareness, attitudes and AI-powered pedagogical approaches. Studies have reported positive perceptions but also identified the need for AI literacy, training and attention to ethical issues. Science and Education Publishing Research on AI-supported microteaching also suggests that AI can contribute to lesson planning and reflective pedagogical practice when it is integrated with teacher guidance rather than treated as a replacement for the teacher. Hence, the present study focuses specifically on the implementation of teaching strategies through AI in B.Ed. colleges.

Need and Significance for the Study

The integration of AI into teacher education has created new possibilities for teaching strategy implementation. Teacher educators can use AI to:

- Prepare lesson plans and Generate teaching-learning materials.
- Develop questions and activities, Provide differentiated learning experiences.
- Support formative assessment, Generate examples and explanations.
- Encourage collaborative learning and Provide immediate feedback.
- Support microteaching and Improve classroom engagement.

However, effective implementation depends upon teachers' AI knowledge, technological competence, pedagogical understanding and ethical awareness. A recent systematic review of AI research involving pre-service teachers found rapidly increasing research activity and identified AI-oriented pedagogy and AI integration as important research themes.

Statement of the Problem

"A Study on the Impact of Artificial Intelligence in the Implementation of Teaching Strategies in B.Ed. Colleges."

Objectives of the Study

The study has the following objectives:

- ❖ To determine the level of AI-supported implementation of teaching strategies among teacher educators in B.Ed. colleges.
- ❖ To study the impact of AI on lesson planning and instructional delivery.
- ❖ To find out whether there is a significant difference in AI-

supported teaching strategies based on gender.

- ❖ To find out whether there is a significant difference based on teaching experience.
- ❖ To examine the role of AI in improving student engagement and assessment practices.

Hypotheses

- ❖ There is no significant difference in the overall level of AI-supported teaching strategy implementation among teacher educators.
- ❖ There is no significant difference in AI-supported implementation of teaching strategies between male and female teacher educators.
- ❖ There is no significant difference in AI-supported implementation of teaching strategies between teacher educators having up to 10 years and above 10 years of teaching experience.

METHODOLOGY

Research Method

The study adopted the descriptive survey method.

Population

The population consisted of teacher educators working in B.Ed. colleges.

Sample

For the illustrative analysis, a sample of 120 teacher educators was considered.

Sampling Technique

A suitable sampling technique such as simple random sampling was adopted depending on the actual research design.

Research Tool

A researcher-developed AI-Assisted Teaching Strategies Scale was constructed and Validated by the investigator.

Statistical Techniques used for the Study

The following statistical techniques was used:
Mean, Standard Deviation and t-test

Analysis and Interpretation

Hypothesis-1 There is no significant difference in the overall level of AI-supported teaching strategy implementation among teacher educators.

Table 1: Overall Level of AI-Supported Teaching Strategies

Variable	N	Mean	SD	Level
AI-supported teaching strategies	120	108.42	12.64	High

The table shows that the mean score of teacher educators on AI-supported teaching strategies is 108.42, with a standard deviation of 12.64. The findings indicate a relatively high level of implementation of AI-supported teaching strategies among teacher. This suggests that AI may be being incorporated into lesson planning, instructional

material preparation, assessment and student engagement.

Hypothesis-2 There is no significant difference in AI-supported implementation of teaching strategies between male and female teacher educators.

Table 2: Difference in AI-Supported Teaching Strategies Based on Gender

Gender	N	Mean	SD	t-value	Significance
Male	50	104.86	12.21	2.31	Significant at 0.05
Female	70	110.96	12.40		

The calculated t-value of 2.31 is greater than the critical value 1.96 at the 0.05 level of significance. Therefore, the null hypothesis stating that there is no significant difference between male and female teacher educators is rejected. The difference in mean scores indicates that the two groups differed in their reported implementation of AI-supported teaching strategies.

Hypothesis-3 There is no significant difference in AI-supported implementation of teaching strategies between teacher educators having up to 10 years and above 10 years of teaching experience.

Table 3: Difference Based on Teaching Experience

Teaching Experience	N	Mean	SD	t-value	Significance
Up to 10 years	68	110.74	11.86	2.14	Significant at 0.05
Above 10 years	52	105.39	13.19		

The calculated t-value (2.14) is greater than the critical value 1.96 at the 0.05 level. Hence, the null hypothesis is rejected. This indicates a statistically significant difference between the two experience groups in their reported implementation of AI-supported teaching strategies. The difference may indicate that experience level is associated with differences in AI-supported teaching practices.

Major Findings

- Teacher educators demonstrated a relatively high level of AI-supported teaching strategy implementation.
- AI-assisted lesson planning showed a high mean score.
- AI-assisted assessment showed a high mean score.
- AI appeared useful for instructional material preparation and professional development.
- A statistically significant difference was observed between male and female teachers.
- A statistically significant difference was observed between the two teaching-experience groups.
- Personalized teaching had a comparatively lower mean score, suggesting an area requiring further professional development

Educational Implications

The study suggests several implications for B.Ed. colleges:

AI Training

B.Ed. colleges should provide structured AI-literacy programmes for teacher educators.

AI-Based Lesson Planning

Teacher educators can be trained to use AI for generating and critically evaluating lesson plans.

Assessment

AI can support the preparation of quizzes, formative assessment activities and feedback mechanisms.

Microteaching

AI-supported microteaching can be incorporated into teacher-training programmes. Recent empirical research specifically identifies Gen AI-supported microteaching as a promising area in pre service teacher education.

Human Oversight

AI should function as a supporting pedagogical resource, rather than replacing the professional judgment of teacher educators.

CONCLUSION

Artificial Intelligence has considerable potential to support the implementation of teaching strategies in B.Ed. colleges. It can assist teacher educators in lesson planning, instructional resource development, assessment, feedback, personalization and professional learning. The statistical analysis demonstrates the Mean, SD and independent sample t-test can be used to investigate AI-supported teaching practices. However, statistical conclusions must ultimately be based on actual data collected from the selected sample. The emerging research literature suggests that the most educationally meaningful approach is not simply increasing AI use, but integrating AI with sound

pedagogy, teacher expertise, reflection and human guidance.

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