SIMULATION-ASSISTED MICRO TEACHING AND PROFESSIONAL READINESS AMONG PRE-SERVICE TEACHERS

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Abstract

Teacher education has gradually moved beyond conventional instructional practices in recent years, especially with the integration of technology-based learning environments into teacher preparation programmes. Among these innovations, simulation-assisted microteaching has emerged as a promising instructional approach that allows student teachers to practice teaching skills in controlled and reflective learning situations. The present study examined the effectiveness of simulation-assisted microteaching on the professional readiness of pre-service teachers.

The study was conducted using an experimental method with pre-test and post-test design. A total of 60 pre-service teachers studying in Colleges of Education in Chennai District, Tamil Nadu, were selected through random sampling technique. The participants were divided equally into experimental and control groups. The experimental group received simulation-assisted microteaching training, whereas the control group underwent conventional microteaching practices.

A researcher-developed Professional Readiness Scale was used for data collection. The tool was prepared by the researcher and consisted of dimensions such as classroom confidence, instructional planning, communication skill, classroom management, reflective teaching, and decision-making ability.

The findings revealed that pre-service teachers exposed to simulation-assisted microteaching demonstrated noticeable improvement in professional readiness compared to those who underwent traditional training methods. Statistical analysis indicated a significant difference between the post-test mean scores of the experimental and control groups. The study further highlighted that simulation environments created opportunities for repeated practice, immediate feedback, and reflective learning among student teachers.

The study concluded that simulation-assisted microteaching contributed positively towards strengthening professional readiness and teaching competency among pre-service teachers. The findings suggest that teacher education institutions should integrate simulation-based pedagogical practices into teacher training programmes to prepare future teachers for real classroom situations.

Keywords: Simulation-assisted learning, microteaching, professional readiness, pre-service teachers, teacher education, teaching competency.

Introduction

Teacher education plays an important role in preparing future educators to meet the changing demands of modern classrooms. In the present educational context, teachers are expected not only to possess subject knowledge but also to demonstrate communication skill, classroom management ability, reflective thinking, and technological adaptability. As educational institutions continue to evolve, teacher preparation programmes are also expected to adopt innovative instructional practices that support professional competency among student teachers.

Microteaching has long been considered an essential component of teacher training programmes. It provides opportunities for pre-service teachers to practice teaching skills in a simplified classroom setting before entering actual teaching environments. Traditional microteaching methods mainly focus on peer teaching and observation-based feedback. Although these practices support skill development, they often fail to provide realistic classroom complexity and immediate reflective opportunities.

In recent years, simulation-assisted learning environments have gained importance in teacher education. Simulation-based teaching creates interactive classroom situations where student teachers engage with realistic teaching scenarios, learner behaviour, classroom challenges, and instructional decision-making processes. These simulated environments allow pre-service teachers to practice repeatedly without fear of failure, thereby strengthening confidence and professional preparedness.

Professional readiness refers to the preparedness of pre-service teachers to handle instructional responsibilities, classroom situations, learner diversity, communication challenges, and pedagogical decision-making in real educational settings. It involves both teaching competency and professional confidence required for successful classroom practice.

The present study attempted to examine whether simulation-assisted microteaching could significantly improve the professional readiness of pre-service teachers when compared to traditional microteaching practices. The study was undertaken in Colleges of Education situated in Chennai District, Tamil Nadu.

Need and Significance of the Study

Modern classrooms demand teachers who are adaptable, reflective, technologically aware, and professionally competent. Traditional teacher training methods often provide limited opportunities for student teachers to experience realistic classroom situations before entering actual schools. As a result, many pre-service teachers experience anxiety, lack of confidence, and difficulty in classroom management during their teaching practice.

Simulation-assisted microteaching has emerged as a valuable pedagogical approach capable of bridging the gap between theory and classroom practice. It allows student teachers to encounter classroom situations in a safe and controlled environment where mistakes become opportunities for learning rather than failure.

The present study is significant because it explores the effectiveness of simulation-assisted learning within teacher education programmes. The findings may help teacher educators, curriculum planners, and educational institutions understand the importance of integrating simulation technology into teacher training practices.

The study may also contribute to improving the quality of teacher preparation programmes by promoting reflective learning, professional confidence, and practical teaching competency among future educators.

Objectives of the Study

1. To find out the level of professional readiness among pre-service teachers before the experimental treatment.
2. To find out the effectiveness of simulation-assisted microteaching on professional readiness among pre-service teachers.
3. To compare the post-test mean scores of the experimental and control groups in professional readiness.
4. To find out whether simulation-assisted microteaching significantly improved classroom confidence among pre-service teachers.
5. To suggest suitable measures for improving professional readiness through simulation-based teaching practices.

Hypotheses of the Study

1. There is no significant difference between the pre-test mean scores of the experimental and control groups in professional readiness.
2. There is no significant difference between the post-test mean scores of the experimental and control groups in professional readiness.
3. There is no significant improvement in classroom confidence among pre-service teachers exposed to simulation-assisted microteaching.

Review of Related Literature

Dieker et al. (2014) examined the effectiveness of simulation technology in teacher preparation programmes and reported that simulation-based teaching environments improved classroom management skills, communication ability, and professional confidence among pre-service teachers. The researchers observed that simulated classroom experiences created opportunities for repeated practice and reflective learning.

Ledger and Fischetti (2020) studied virtual classroom simulations in teacher education and found that simulation-assisted teaching significantly reduced teaching anxiety among student teachers. The study further indicated that participants developed better instructional decision-making skills through repeated exposure to realistic classroom situations.

Badiee and Kaufman (2015) emphasized that simulation-based instructional approaches promoted experiential learning and strengthened pedagogical competency among teacher trainees. Their findings highlighted the importance of integrating technology-based teaching practice within teacher education curricula.

Straub, Dieker, Hynes, and Hughes (2014) reported that simulation-assisted teaching practices enhanced reflective teaching behaviour among pre-service teachers. The study concluded that simulation environments provided safe learning spaces where student teachers could practice classroom interaction without fear of criticism.

Rajeswari Arumugam (2025) conducted a study on teaching competencies among B.Ed. student teachers and found that pedagogical competency significantly contributes to instructional effectiveness, classroom interaction, and learner engagement. The study emphasized the importance of strengthening teaching competency through innovative instructional approaches in teacher education programmes.

Several educational studies conducted in recent years have also highlighted the role of digital learning environments in improving teaching competency, professional confidence, and instructional effectiveness among future educators. The review of related literature indicated that simulation-assisted learning positively influenced teaching preparedness and professional skill development. However, limited studies have focused specifically on simulation-assisted microteaching and professional readiness among pre-service teachers in the Indian teacher education context.

Therefore, the present study attempted to examine the effectiveness of simulation-assisted microteaching on professional readiness among pre-service teachers.

Methodology of the Study

Method of the Study

The present study adopted the experimental method with pre-test and post-test control group design.

Population of the Study

The population of the study consisted of pre-service teachers studying in Colleges of Education located in Chennai District, Tamil Nadu.

Sample of the Study

A sample of 60 pre-service teachers was selected using random sampling technique. The participants were divided into:

- Experimental Group – 30 students
- Control Group – 30 students

Tool for Data Collection

The data for the study were collected using a researcher-developed tool titled **"Professional Readiness Scale for Pre-Service Teachers (PRS-PST)"**. The tool was developed by the researcher based on the objectives of the study and review of related literature.

The scale consisted of 36 items distributed under six dimensions:

1. Classroom Confidence
2. Instructional Planning
3. Communication Skill
4. Classroom Management
5. Reflective Teaching
6. Decision-Making Ability

Each dimension contained six statements measured using a five-point Likert scale ranging from Strongly Agree to Strongly Disagree. The minimum possible score of the tool was 36 and the maximum possible score was 180. Higher scores indicated higher levels of professional readiness. The reliability of the tool was established using Cronbach's Alpha method, and the obtained reliability coefficient was 0.89, indicating high reliability of the instrument.

Experimental Procedure

The experimental group underwent simulation-assisted microteaching sessions for six weeks. Simulation-based classroom scenarios were provided to the participants using digital instructional environments. The participants practiced classroom teaching, learner interaction, questioning techniques, classroom management, and reflective teaching strategies through simulated classroom situations. The control group received traditional microteaching training without simulation-based intervention. After the completion of the treatment, post-test data were collected from both groups.

Statistical Techniques Used

The collected data were analyzed using:

- Mean , Standard Deviation , t-test

Hypothesis Testing

Hypothesis 1

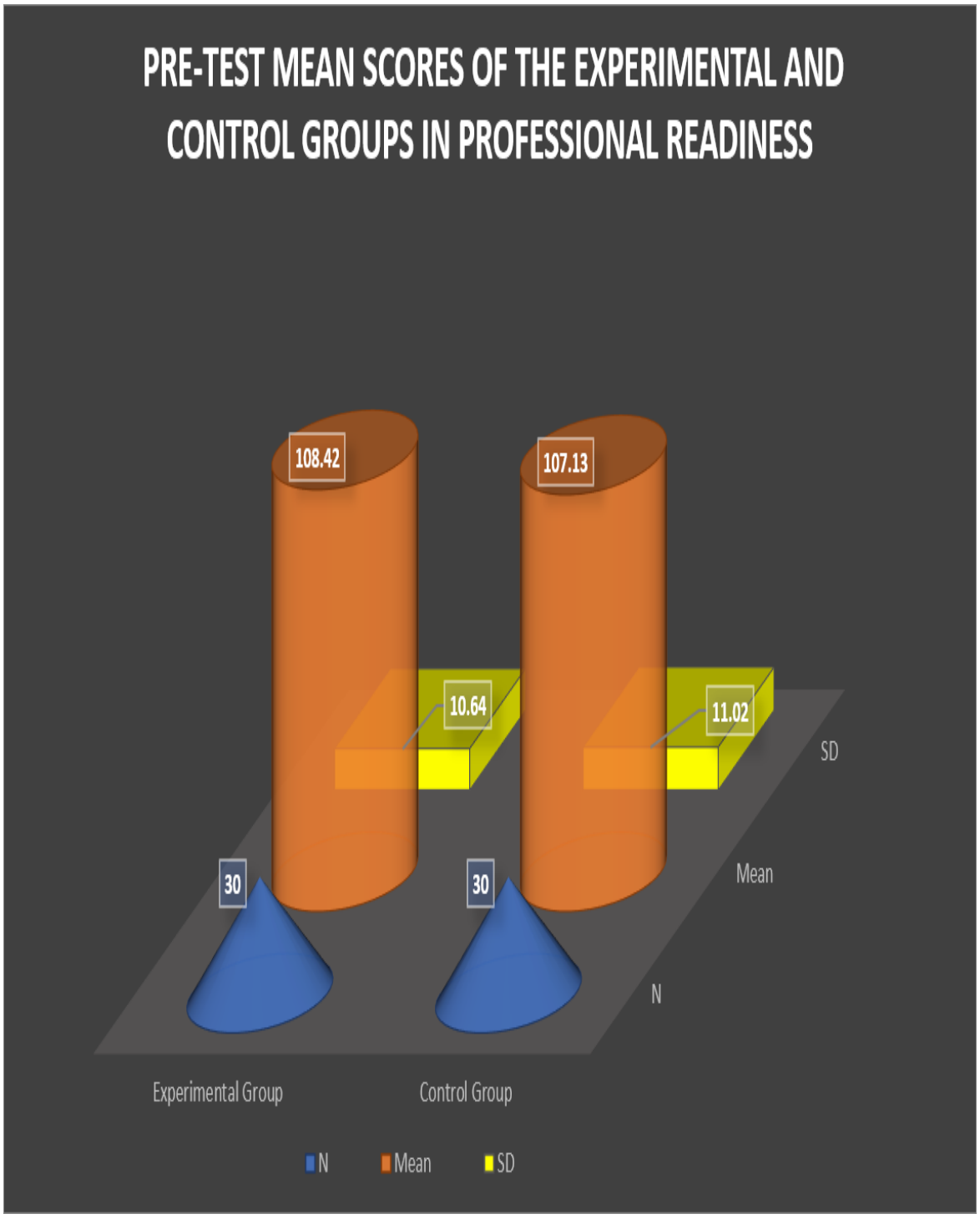
There is no significant difference between the pre-test mean scores of the experimental and control groups in professional readiness.

Table-I

Group	N	Mean	SD	t-value	p-value	Result
Experimental Group	30	108.42	10.64	0.42	0.67	Not Significant
Control Group	30	107.13	11.02			

The pre-test analysis revealed that the experimental and control groups did not differ significantly in their professional readiness before the experimental treatment. The obtained t-value of 0.42 was not significant at the 0.05 level.

This indicated that both groups possessed nearly similar levels of professional readiness prior to the intervention. Hence, the null hypothesis was accepted.



Hypothesis 2

There is no significant difference between the post-test mean scores of the experimental and control groups in professional readiness.

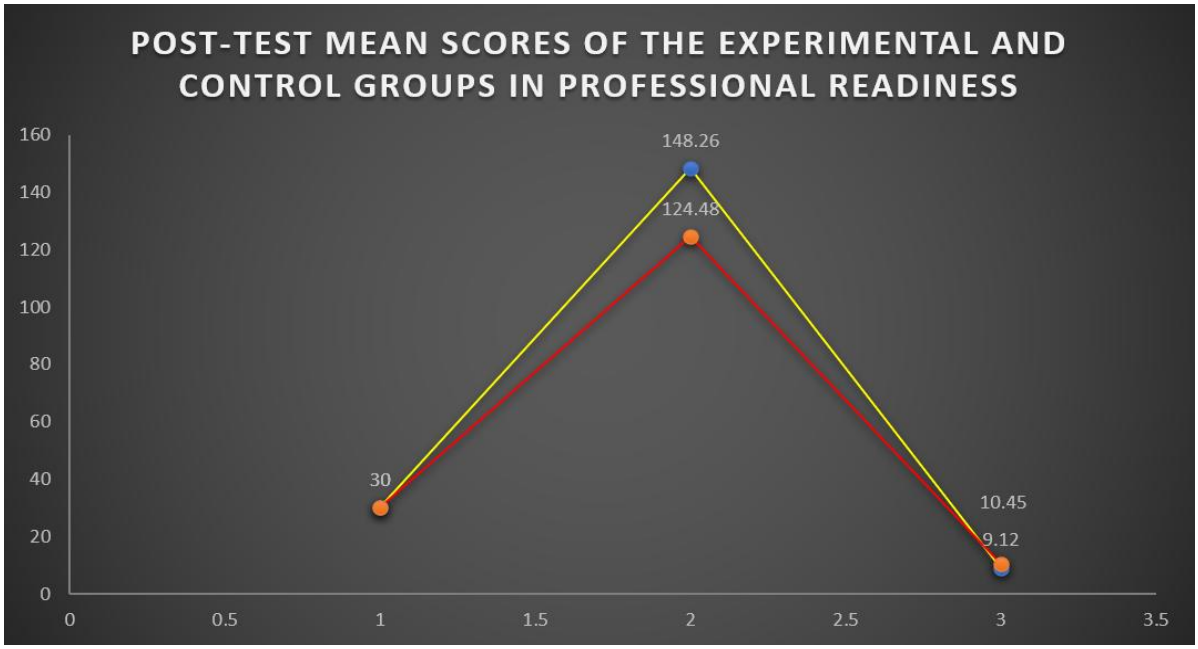
Table-II

Group	N	Mean	SD	t-value	p-value	Result
Experimental Group	30	148.26	9.12	5.84	0.001	Significant
Control Group	30	124.48	10.45			

The post-test results showed a noticeable difference between the experimental and control groups in professional readiness after the experimental treatment. The experimental group obtained a higher mean score (M = 148.26) compared to the control group (M = 124.48). The obtained t-value of 5.84 was statistically significant at the 0.05 level. Therefore, the null hypothesis was rejected.

The findings suggested that simulation-assisted microteaching had a positive influence on professional readiness among pre-service teachers. Participants exposed to simulated classroom situations demonstrated better teaching confidence, classroom interaction, and instructional preparedness compared to those who underwent traditional microteaching practices.

Hypothesis 3



There is no significant improvement in classroom confidence among pre-service teachers exposed to simulation-assisted microteaching.

Table-III

Variable	N	Mean	SD	t-value	p-value	Result
Pre-test	30	18.42	3.14	6.21	0.001	Significant
Post-test	30	26.58	2.76			

The analysis revealed a significant improvement in classroom confidence among pre-service teachers after exposure to simulation-assisted microteaching. The post-test mean score was considerably higher than the pre-test mean score.

The obtained t-value of 6.21 was significant at the 0.05 level. Hence, the null hypothesis was rejected. The findings indicated that simulation-based teaching practice reduced hesitation and improved confidence among student teachers. Many participants appeared more comfortable in handling classroom interaction and instructional delivery after repeated exposure to simulated teaching situations.

Major Findings of the Study

1. The experimental and control groups did not differ significantly in professional readiness before the treatment.
2. Pre-service teachers exposed to simulation-assisted microteaching demonstrated significantly higher professional readiness compared to those who underwent traditional microteaching.
3. Simulation-assisted learning significantly improved classroom confidence among student teachers.
4. The simulation environment encouraged reflective learning, repeated practice, and better classroom preparedness.
5. Student teachers in the experimental group demonstrated improved communication skill and instructional decision-making ability.

Educational Implications

1. Teacher education institutions may integrate simulation-assisted teaching practices into microteaching programmes.
2. Simulation-based learning environments may help reduce teaching anxiety among pre-service teachers.
3. Teacher educators may utilize simulation technology to improve classroom management training and instructional preparedness.
4. Simulation-assisted learning may strengthen reflective teaching practices among student teachers.
5. Curriculum planners may incorporate digital pedagogical training within teacher education programmes.

Conclusion

The present study examined the effectiveness of simulation-assisted microteaching on professional readiness among pre-service teachers. The findings clearly indicated that simulation-based teaching environments positively contributed to teaching confidence, instructional preparedness, and professional competency among student teachers.This finding is supported by Rajeswari Arumugam (2025), who emphasized that teaching competency is an essential component in improving instructional effectiveness among teacher trainees.

Unlike conventional microteaching approaches, simulation-assisted learning provided opportunities for repeated practice, reflective observation, and realistic classroom engagement. Student teachers exposed to simulation-based instruction appeared more confident and professionally prepared to handle classroom situations.

The study highlighted the growing importance of technology-integrated teacher education practices in preparing future educators for modern classrooms. Therefore, teacher education institutions should adopt innovative pedagogical approaches such as simulation-assisted microteaching to strengthen professional readiness among pre-service teachers.

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