INTERNATIONAL RESEARCH JOURNAL OF HUMANITIES AND INTERDISCIPLINARY STUDIES
(Peer-reviewed, Refereed, Indexed & Open Access Journal)
DOI : 03.2021-11278686 ISSN : 2582-8568 IMPACT FACTOR : 8.428 (SJIF 2026)

Usability and Effectiveness of Microteaching in Teacher Education: An Empirical Study of Pre-Service Teachers

Dr. Vivekanand Pandey
Assistant Professor,
Bhuvan Malti College of Education, Motihari,
East Champaran (Bihar, India)

DOI No. 03.2021-11278686 **DOI Link ::** https://doi-ds.org/doilink/11.2026-99121987/IRJHIS2611010

Abstract:

Microteaching is a practice-oriented instructional strategy widely used in teacher education to develop essential teaching competencies through focused teaching practice, observation, feedback, reflection, and re-teaching. It provides pre-service teachers with opportunities to practise instructional skills in a controlled environment before entering real classrooms. The present study examines the usability and effectiveness of microteaching in teacher education, with particular reference to lesson planning, communication, questioning techniques, classroom management, reinforcement, instructional confidence, and reflective practice. A descriptive and evaluative research design using quantitative and qualitative methods is proposed to investigate the experiences of pre-service teachers participating in microteaching sessions. Data may be collected through structured questionnaires, teaching-performance observation schedules, and semi-structured interviews. Descriptive statistics and appropriate inferential tests can be used to analyse quantitative data, while thematic analysis may be employed to interpret qualitative responses. The study distinguishes between perceived usability and demonstrated effectiveness, recognising that satisfaction with a training method does not necessarily establish improvements in teaching performance. It also considers challenges associated with limited practice time, performance anxiety, feedback quality, institutional resources, and the transfer of simulated teaching skills to authentic classroom situations. The paper presents a research framework for evaluating microteaching and discusses its implications for improving teacher preparation programmes. Actual participant data are necessary to establish empirical findings and determine the magnitude of any observed effects.

Keywords: *Microteaching, teacher education, pre-service teachers, teaching competencies, usability, instructional effectiveness, reflective practice, teacher training.*

Introduction:

Teacher education is a fundamental component of educational development because the quality of teaching influences students' learning experiences, academic achievement, and overall development. Teachers are expected not only to possess adequate subject knowledge but also to communicate effectively, organise classroom activities, motivate learners, assess understanding, and respond to

individual differences. Consequently, teacher preparation programmes must provide opportunities for prospective teachers to develop both theoretical understanding and practical teaching competencies. Traditional teacher education often emphasises educational philosophy, psychology, curriculum, assessment, and pedagogical theory. Although these areas are essential, theoretical knowledge alone cannot guarantee effective classroom performance. Prospective teachers need structured opportunities to apply their knowledge, practise instructional behaviours, receive feedback, and reflect on their strengths and weaknesses. Microteaching is one instructional strategy designed to address this requirement. Developed as a systematic approach to teacher training, it simplifies the teaching process by reducing the duration of a lesson, the number of learners, and the range of teaching skills practised during a session. Allen and Ryan (1969) established microteaching as an important approach to developing teaching competencies through controlled practice and feedback. A typical microteaching cycle involves planning a lesson, teaching it briefly, receiving feedback, revising the lesson, and teaching it again. This process encourages trainees to identify specific performance gaps and make targeted improvements. For example, a trainee may practise explaining a concept, asking higher-order questions, reinforcing correct responses, or concluding a lesson effectively.

The usefulness of microteaching, however, depends on the quality of its implementation. Clear instructions, constructive feedback, adequate practice opportunities, appropriate observation criteria, and supportive supervision can strengthen its educational value. In contrast, inadequate resources, limited time, inconsistent feedback, and excessive anxiety may reduce its effectiveness.

Two important dimensions therefore require investigation. **Usability** concerns how accessible, understandable, manageable, and acceptable microteaching is to pre-service teachers. **Effectiveness** concerns the extent to which participation contributes to improvements in teaching competencies and related professional outcomes.

The present paper proposes an empirical framework for examining these dimensions. It aims to contribute to the improvement of teacher education by identifying measurable indicators of microteaching quality and explaining how evidence can inform instructional practice.

Review of Related Literature:

Concept and Development of Microteaching:

Microteaching is a teacher-training technique in which a trainee teaches a short lesson or practises a specific instructional skill under controlled conditions. The session is generally followed by observation, feedback, reflection, and, where possible, re-teaching.

Allen and Ryan (1969) described microteaching as a means of simplifying the complexity of classroom teaching so that particular teaching behaviours could be practised and evaluated. Rather than requiring trainees to manage every aspect of a complete lesson simultaneously, the method allows them to concentrate on selected competencies.

For example, one session may focus on questioning techniques, while another concentrates on explanation, reinforcement, or the effective use of teaching aids. This focused structure makes it easier for trainees and supervisors to identify strengths and areas requiring improvement.

Microteaching and Reflective Practice:

Reflective practice is an important element of professional teacher development. Schön (1983) explained how professionals learn by examining their actions, interpreting experiences, and reconsidering their approaches to complex situations.

Microteaching provides a practical setting for this process. Following a teaching session, trainees can reflect on whether learning objectives were achieved, whether explanations were clear, and whether learners appeared to understand the content. Observation notes and video recordings may support this reflection.

Reflection becomes more productive when it leads to specific changes in subsequent teaching. Merely identifying a weakness is insufficient; trainees need opportunities to implement corrective strategies and assess their results.

Feedback and Teaching Performance:

Feedback is another central component of microteaching. Hattie and Timperley (2007) emphasised that feedback can support learning when it provides useful information about performance, learning goals, and strategies for improvement. In microteaching, feedback may be provided by teacher educators, peers, or self-observation. Effective feedback should be specific, respectful, evidence-based, and linked to observable teaching behaviours.

For example, the statement “Your explanation was unclear” offers limited guidance. More constructive feedback would identify the point at which the explanation became difficult to follow and suggest using a relevant example or a sequence of simpler steps.

The quality of feedback may therefore influence whether trainees can translate observation into improved performance.

Microteaching and Teaching Confidence:

Teaching confidence is relevant because pre-service teachers may experience anxiety when addressing a group, managing questions, or presenting unfamiliar content. Bandura (1997) identified mastery experiences as an important source of self-efficacy.

Repeated teaching practice may provide opportunities for trainees to experience progress, develop confidence, and learn to manage performance-related anxiety. Nevertheless, perceived confidence should be measured separately from teaching competence. A trainee may feel more confident without demonstrating equivalent improvement in instructional performance.

Research Gap:

The theoretical literature provides a strong rationale for structured teaching practice, feedback,

and reflection. However, the usability and effectiveness of microteaching should be evaluated in specific institutional contexts rather than assumed to be uniform across all teacher education programmes. An empirical investigation should examine trainees' experiences alongside observable performance. It should also consider whether improvements are associated with repeated practice, feedback quality, and opportunities to apply learning in real classrooms. These considerations form the basis of the present study.

Objectives of the Study:

The main objective is to examine the usability and effectiveness of microteaching in developing the professional competencies of pre-service teachers.

The specific objectives are:

1. To assess pre-service teachers' perceptions of the usability and practical value of microteaching.
2. To examine the contribution of microteaching to lesson planning, explanation, questioning, reinforcement, and classroom interaction.
3. To investigate changes in teaching confidence and reflective practice following participation in microteaching.
4. To examine the role of feedback and repeated practice in teaching-skill development.
5. To identify institutional, instructional, and personal challenges affecting implementation.
6. To recommend strategies for strengthening microteaching in teacher education programmes.

Research Questions and Hypotheses:

The investigation is guided by four research questions:

1. How do pre-service teachers perceive the usability of microteaching?
2. What changes, if any, occur in their teaching competencies following participation?
3. How are feedback and repeated practice associated with improvements in teaching performance?
4. What factors facilitate or hinder effective implementation?

Where a pre-test and post-test design is used, the following hypotheses may be examined:

There is no statistically significant difference between pre-intervention and post-intervention teaching-performance scores.

There is no statistically significant difference between pre-intervention and post-intervention teaching-confidence scores.

There is no statistically significant association between perceived feedback quality and improvement in teaching performance.

These statements represent null hypotheses. Their acceptance or rejection must be based on the actual data, the selected statistical tests, and the specified significance level.

Research Methodology:

Research Design:

A descriptive and evaluative research design is proposed, combining quantitative and qualitative approaches. Quantitative data can establish patterns in usability ratings, confidence scores, and observed teaching performance. Qualitative data can explain how trainees experience microteaching and why particular aspects are helpful or challenging.

Where feasible, a pre-test and post-test design should be incorporated. Teaching competencies are assessed before the intervention and again after trainees complete a defined series of microteaching sessions. A comparison group would strengthen the design by helping distinguish intervention-related changes from other influences.

Population and Sample:

The target population comprises pre-service teachers enrolled in teacher education programmes, such as Bachelor of Education courses or equivalent qualifications.

Participants may be selected from one or more teacher education institutions through random, stratified, or purposive sampling, depending on institutional access and the intended scope of the study. The final research report must identify the actual sample size, institutions, participant characteristics, sampling method, and inclusion criteria. If participants are drawn from a single institution, the findings should be interpreted in that context rather than generalised automatically to all teacher education institutions.

Research Instruments:

Three instruments are recommended.

Structured questionnaire: This instrument measures perceived ease of participation, clarity of instructions, usefulness of feedback, adequacy of practice opportunities, confidence, and satisfaction. Responses may be recorded on a five-point Likert scale ranging from strongly disagree to strongly agree.

Teaching-performance observation schedule: This instrument assesses lesson preparation, introduction, explanation, questioning, reinforcement, use of teaching aids, classroom interaction, and lesson closure. Each competency should have clearly defined performance indicators.

Semi-structured interview schedule: Interviews or open-ended questionnaire items can explore trainees' experiences of anxiety, peer observation, feedback, repeated practice, and the perceived relevance of microteaching to classroom teaching.

The instruments should be reviewed by experts in teacher education. A pilot study can identify ambiguous questions and practical difficulties. Internal consistency should be examined for appropriate multi-item scales, while observer training and inter-rater agreement can strengthen performance assessments.

Procedure:

The intervention may be organised into the following stages:

1. **Orientation:** Participants receive information about microteaching, teaching competencies, assessment criteria, and ethical procedures.
2. **Initial assessment:** Baseline teaching performance and relevant confidence measures are recorded.
3. **Lesson planning:** Trainees prepare short lessons with explicit learning objectives.
4. **Teaching practice:** Participants conduct brief sessions focusing on selected teaching skills.
5. **Observation and feedback:** Teacher educators and peers provide structured feedback based on predefined criteria.
6. **Reflection and re-teaching:** Trainees review their performance, modify their lesson plans, and repeat the teaching task where feasible.
7. **Final assessment:** Teaching performance and participant perceptions are reassessed using comparable instruments.

The number and duration of sessions should be determined by the institutional timetable and stated explicitly in the final manuscript.

Data Analysis:

Quantitative data may be analysed using frequencies, percentages, means, and standard deviations. Pre-test and post-test comparisons may use paired-sample t-tests when their assumptions are reasonably satisfied, or suitable non-parametric alternatives when necessary.

If a comparison group is included, between-group analyses should account for baseline differences and the study design. Effect sizes and confidence intervals should accompany significance tests where appropriate.

Qualitative responses can be analysed thematically. The process involves familiarisation with responses, coding meaningful statements, grouping related codes, developing themes, and reviewing interpretations against the data.

Ethical safeguards should include informed consent, voluntary participation, confidentiality, secure data handling, and institutional approval where required.

Findings and Results: Empirical Reporting Framework:

The results must be completed using data collected from the participating pre-service teachers. Since no dataset has been supplied, numerical findings cannot responsibly be reported as though they were observed.

The following table identifies the principal outcomes to be presented.

Dimension	Evidence to report	Analytical approach
Usability	Ratings of clarity, practicality, and accessibility	Frequencies, percentages, means
Teaching competencies	Observation scores before and after training	Paired comparison and effect size
Teaching confidence	Pre-intervention and post-intervention scale scores	Descriptive and inferential statistics
Feedback quality	Trainee ratings and feedback observations	Association analysis where appropriate
Implementation challenges	Reported barriers and experiences	Thematic analysis

Usability:

The analysis should establish whether participants found the instructions understandable, the session structure manageable, and the feedback process useful. Results should include the number of valid responses, relevant descriptive statistics, and missing-response information where necessary.

Teaching Competencies:

Observation data should establish whether teaching performance changed between assessments. Separate results should be reported for lesson planning, explanation, questioning, reinforcement, and classroom interaction where these dimensions are measured.

Confidence and Reflection:

Questionnaire and interview data should be examined to determine whether participants reported changes in confidence and reflective practice. These findings should be distinguished from changes in observed teaching performance.

Challenges:

Qualitative analysis should identify recurring implementation challenges, such as insufficient practice time, anxiety during observation, inconsistent feedback, or limited teaching resources. Themes must be supported by the collected responses rather than selected merely because they appear plausible.

Discussion:

The proposed framework treats microteaching as a structured opportunity to practise teaching skills, receive feedback, and reflect on performance. Its value lies in making specific instructional behaviours observable and open to improvement.

First, usability is likely to depend on how well the training process is organised. Clearly stated objectives, manageable activities, transparent assessment criteria, and supportive supervision can help trainees participate meaningfully. Nevertheless, high usability ratings alone cannot demonstrate that

teaching competencies have improved.

Second, the feedback cycle deserves particular attention. Feedback is most useful when it identifies an observable behaviour, explains its implications, and suggests a practical improvement. Re-teaching enables trainees to test these suggestions rather than treating feedback as a final judgement.

Third, the relationship between confidence and competence should be interpreted carefully. Repeated practice may help trainees become more comfortable with teaching, but confidence measures should be supplemented with independent observation whenever possible.

Fourth, the simulated nature of microteaching creates both advantages and limitations. A controlled environment allows focused practice, yet it cannot fully reproduce the diversity, unpredictability, and behavioural complexity of real classrooms. School-based teaching practice remains necessary for assessing whether acquired skills transfer to authentic teaching situations.

Finally, institutional conditions may influence implementation. Adequate time, trained supervisors, observation tools, and appropriate recording facilities can support a more systematic process. Institutions should evaluate these factors alongside learning outcomes rather than treating microteaching as a routine procedural requirement.

These interpretations provide a theoretical basis for the investigation. Their confirmation, qualification, or rejection depends on the actual empirical evidence.

Educational Implications and Recommendations:

The study has several implications for teacher education.

First, microteaching should be competency-oriented. Each session should identify a specific instructional objective and use observable criteria to evaluate performance.

Second, feedback should be constructive and actionable. Teacher educators should guide trainees towards practical changes instead of providing only general praise or criticism.

Third, repeated practice should be prioritised. A complete microteaching cycle should include opportunities to apply feedback and assess improvement.

Fourth, reflective practice should be encouraged. Reflective journals and structured self-assessment can help trainees connect observed performance with pedagogical principles.

Fifth, digital tools may be integrated appropriately. Video recordings can support self-observation, while digital rubrics may improve feedback organisation. Their use should reflect institutional resources and respect privacy requirements.

Sixth, microteaching should complement school-based practice. Teacher education programmes should provide opportunities to transfer and evaluate teaching competencies in real classrooms.

Finally, institutions should monitor programme quality. Regular evaluation of trainee perceptions, teaching performance, supervisory practices, and resource availability can guide continuous

improvement.

Limitations and Directions for Future Research:

The proposed investigation may be limited by sample size, institutional context, intervention duration, and reliance on self-reported perceptions. Participants from one institution may not represent the experiences of pre-service teachers in other educational settings.

A pre-test and post-test design without a comparison group cannot establish confidently that microteaching alone caused observed changes. Performance may also be influenced by prior experience, subject knowledge, supervisor differences, and other components of teacher education.

Future research should use larger and more diverse samples, multiple institutions, standardised observation rubrics, and independent performance ratings. Comparison groups and longitudinal follow-up can help establish whether improvements persist and transfer to school-based teaching. Research may also investigate whether outcomes differ according to subject specialisation, prior teaching experience, or the use of digital feedback tools.

Conclusion:

Microteaching is an important practice-oriented approach to teacher preparation because it creates structured opportunities for prospective teachers to practise instructional skills, receive feedback, reflect, and improve. Its potential value extends to lesson planning, explanation, questioning, reinforcement, teaching confidence, and reflective practice.

However, its usability and effectiveness represent distinct dimensions and should be assessed separately. Participant satisfaction can provide useful evidence about accessibility and perceived value, while changes in teaching competence require systematic performance assessment. Feedback quality, repeated practice, supervisory support, and opportunities to apply learning in real classrooms are important considerations in evaluating the approach.

The proposed empirical framework combines questionnaires, observation schedules, and qualitative inquiry to provide a more comprehensive assessment of microteaching. Its findings can inform teacher education institutions seeking to strengthen practical training and professional development.

Ultimately, microteaching should be integrated into a broader programme that combines theoretical understanding, reflective learning, supervised classroom experience, and continuous assessment. Its contribution to teacher preparation should be established through transparent research, reliable measurement, and evidence-based educational practice.

References:

1. Allen, D. W., & Ryan, K. A. (1969). *Microteaching*. Addison-Wesley Publishing Company.
2. Bandura, A. (1997). *Self-efficacy: The exercise of control*. W. H. Freeman.
3. Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research,*

77(1), 81–112. https://doi.org/10.3102/003465430298487

4. Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. Basic Books.
5. Allen, D. W., & Eve, A. W. (1968). Microteaching. Theory Into Practice,
6. Amobi, F. A. (2005). Preservice teachers' reflectivity on the sequence and consequences of teaching actions in a microteaching experience. Teacher Education Quarterly,
7. Arsal, Z. (2014). Microteaching and pre-service teachers' sense of self-efficacy in teaching. European Journal of Teacher Education,
8. Bandura, A. (1997). Self-efficacy: The exercise of control. W. H. Freeman.
9. Hattie, J., & Timperley, H. (2007). The power of feedback. Review of Educational Research,
10. Iliasova, L., Nekrasova, I., Mena, J., & Estrada-Molina, O. (2025). Microteaching on pre-service teachers' education: Literature review. Frontiers in Education, 10, Article 1562975.
11. McKnight, P. C. (1971). Microteaching in teacher training. Educational Review, ?
12. Schön, D. A. (1983). The reflective practitioner: How professionals think in action. Basic Books.
13. Vígh, T. (2024). Development of research skills through research-focused microteaching lesson study in preservice teacher education. Teaching and Teacher Education, 145, Article 104618.