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Enhancing Teaching Effectiveness in Distance and Online Education: The Impact of Micro-Teaching on Distance and Online Educators' Perceived Performance

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Abstract

The rapid expansion of education systems in recent decades has led to a significant shift from traditional, face-to-face instruction to more flexible modes such as distance education. With this transition, the role of educators has evolved, requiring the adaptation of core teaching competencies to suit a virtual and student-centric learning environment. Micro-teaching—once widely used in traditional teacher training—emerges as a potentially valuable tool to enhance the instructional effectiveness of distance educators. This study investigates the effect of micro-teaching on the perceived teaching effectiveness of educators engaged in distance education. Micro-teaching skills such as set induction, explanation, questioning, use of audio-visual aids, and classroom management are re-examined and adapted for application in remote learning contexts. Findings suggest that structured micro-teaching sessions significantly enhance educators' self-

perceived instructional competence and readiness to engage adult learners in a virtual setting. The research emphasizes the need to integrate micro-teaching-based training modules into distance education frameworks to improve instructional quality and learner engagement.

KEYWORDS

Distance Education, Micro-Teaching, Teaching Effectiveness, Adult Learners, Teacher Training, Online Pedagogy, Instructional Skills

Introduction

Distance Education refers to a method of delivering education where learners and instructors are separated by geographical distance. This mode of learning is particularly centered on adult education, targeting individuals who missed formal education earlier in life—often termed as "second-chance learners" (Moore & Kearsley, 2012). It offers these learners the flexibility to study from home or their workplace, eliminating the need for physical attendance at a specific location. This convenience makes it an attractive option for a large segment of adult learners.

In recent years, distance learning has evolved into a key educational strategy, witnessing rapid and sometimes unexpected growth. The digital revolution has significantly accelerated this expansion by overcoming traditional and geographical limitations through technological integration. Advances in digital tools and communication technologies have not only enhanced accessibility but also underscored the distinctions between distance education and conventional classroom-based learning.

Moreover, the decline in costs associated with telecommunications and information technology has contributed to the affordability and scalability of distance education (Allen & Ryan, 1969). Compared to traditional educational systems, distance education models incur relatively lower costs per student. There is an inverse relationship between infrastructure costs and student enrollment in distance education—while expenses related to infrastructure and maintenance decrease, the number of enrolled adult learners continues to rise.

Distance educators do not meet the students on face-to-face mode, rather the distance educational program is delivered through self-learning print material, live and recorded lectures and through the assignments in form of practical or internship programs.

1. Micro Teaching Skills

Teaching is a multifaceted process composed of several micro or specific skills. When integrated effectively, these skills help educators achieve the desired learning outcomes. This raises an important question in the context of distance education: What specific teaching skills are essential for distance educators, and can these skills truly enhance the effectiveness of the distance teaching–learning process?

In distance education, the teaching process relies heavily on certain adapted competencies. These include strong writing skills for developing high-quality self-instructional print materials, effective online delivery of lectures, and the ability to facilitate engaging and interactive communication through digital platforms such as chat or discussion forums. Consequently, the teaching skills required for distance education differ from those used in traditional classroom settings. The specific teaching skills relevant to distance educators are outlined in the following table.

Table 1: Teaching skills and its component associated with Distance and online Education

Sr. No	Teaching skills	Component teaching skills
1	Writing skills for the preparation of quality Self Learning Materials	a) Writing instructional objectives b) Selecting and writing the content c) Organizing the content
2	Skill of quality delivery of the lectures through Internet	a) Preparation of Power point slides b) Ease of handling the Internet c) Ability of explaining the topics with the Power points slides
3	Presentation skills	a) Use of computer application software b) Explanation skills c) Illustrating with examples
4	Managerial skills	a) Promoting students' participation b) Management of the Virtual Class
5	Closure skills	a) Planned repetition b) Giving assignments c) Getting feedback from the students

Brief descriptions of these skills are as follows –

1.1.1 Writing skills for the preparation of quality Self Learning Materials

Effective writing is a foundational skill for distance educators, particularly for developing quality Self-Learning Materials (SLMs). One of the primary elements is writing instructional objectives at the beginning of the unit. This provides learners with a clear understanding of what they are expected to achieve by the end of the lesson. In addition, content selection and writing must align with these objectives. The language used should be simple, clear, and self-contained to avoid dependency on external resources or direct teacher intervention (Moore & Kearsley, 2012). Equally important is organizing the content logically, supported by illustrations and explanations. This arrangement helps reduce the cognitive load for learners and minimizes the need for academic support.

1.1.2 Skill of quality delivery of the lectures through Internet

With advancements in computer technology, ease of handling the Internet has become an essential skill for distance educators. The Internet has transformed the delivery of education, making it crucial for educators to be proficient in its use. Preparation of PowerPoint slides plays a vital role in online lectures. Unlike traditional teaching, distance education relies heavily on well-designed presentations using features such as animations, sound, color, and multimedia to enhance learning. Furthermore, the ability to explain topics effectively using these slides is equally important. Slides should not be text-heavy; instead, they should incorporate visual elements like images, graphs, and tables to support instructionally designed content that facilitates better understanding.

1.1.3 Presentation skills

Distance educators must also demonstrate strong presentation skills. This includes the competent use of various computer application software to support their teaching. Given the physical separation between the learner and educator, explanation skills become crucial. Descriptions should be precise and should stimulate curiosity and motivation in learners. Another vital skill is the ability to illustrate abstract concepts with practical examples. Mastering this skill helps educators make complex content more relatable and understandable for distance learners.

1.1.4 Managerial skills

Managerial skills are especially important in a distance education setup. One of the key challenges is promoting learner participation. Since distance learning lacks face-to-face interaction, educators must adopt strategies that encourage interactive learning. This includes designing materials that include self-assessment questions and activity-based tasks. During live online sessions, posing questions that prompt discussion and critical thinking can help maintain learner engagement (Knowles, Holton, & Swanson, 2015). Another managerial skill is the efficient handling of virtual classes, which function similarly to video conferencing. Educators should be capable of conducting these sessions smoothly to create a productive learning environment.

1.1.5 Closure skills

Closure skills are equally important in distance education. Planned repetition at the end of a lecture or unit helps reinforce key concepts, directing learners' attention to crucial takeaways. Giving assignments in the form of activities further supports engagement and deepens learning. Moreover, obtaining feedback from learners enables educators to refine their teaching strategies. Constructive feedback is essential for continuous improvement and for adapting teaching methods to meet learner needs.

1.2 Objectives of the study

- To study the effect of Micro Teaching on perceived teaching effectiveness of distance educators
- To suggest action to improve the perception, if any

2. Literature Review

The transformation of educational delivery from traditional classroom settings to distance education has prompted a significant re-evaluation of teaching strategies and educator preparation (Moore & Kearsley, 2012). While distance education focuses on learner autonomy and flexibility, it also presents challenges in ensuring instructional effectiveness, particularly due to reduced face-to-face interactions and the absence of immediate feedback mechanisms (Anderson, 2008).

Micro-teaching, first introduced in the 1960s at Stanford University, is a scaled-down teaching encounter that allows educators to develop specific teaching skills in a controlled, supportive environment (Allen & Ryan, 1969). It focuses on discrete teaching behaviors such as set induction, explanation, questioning, reinforcement, and classroom management. Research has shown micro-teaching to be a powerful professional development tool for pre-service and in-service teachers, enabling skill refinement through practice, observation, and feedback (Fernandez, 2005; Kpanja, 2001).

Recent studies have explored the applicability of micro-teaching in online and distance learning environments. Wambugu, Barmao, and Ng'eno (2013) demonstrated that micro-teaching enhanced pre-service teachers' confidence and delivery, even when adapted to a virtual platform. Similarly, Panda and Mishra (2007) emphasized the need for specialized training in online pedagogies for distance educators, advocating the inclusion of micro-teaching strategies tailored to digital platforms.

In the context of adult education and distance learning, learners bring prior knowledge, self-direction, and goal orientation, requiring educators to employ more personalized and interactive methods (Knowles, Holton, & Swanson, 2015). Micro-teaching, when adapted to this learner profile, can help distance educators experiment with communication, engagement techniques, and learner motivation strategies that resonate with adult learners.

Furthermore, Ching and Hsu (2013) found that reflective practices embedded within micro-teaching enhance metacognitive awareness among instructors, contributing to long-term teaching improvement. This aligns with Mishra and Koehler's (2006) Technological Pedagogical Content Knowledge (TPACK) framework, which supports the integration of content, pedagogy, and technology for effective distance instruction.

Despite its proven benefits, literature also indicates limitations of traditional micro-teaching, including its reliance on in-person observation and immediate feedback (Amobi, 2005). However, technological tools such as video recordings, peer review platforms, and virtual simulations are now enabling its evolution into a suitable model for distance educators.

Furthermore, Ayodele Abosede Ogegbo and Mafor Penn (2024) state the use of virtual reality classrooms for micro-teaching practice for preservice science teachers' experiences.

In the International Journal of Higher Education, 2021, a research paper authored by Msimanga Mothofela Richard et. al. found that there is great impact of Micro Teaching Lessons on South African students.

3. Research Methodology

The present study adopts a Descriptive Approach within the broader framework of Conclusive Research, aiming to assess the effect of micro-teaching on the perceived teaching effectiveness of distance educators. The research is based on empirical observations and attempts to draw meaningful conclusions about the relationship between micro-teaching interventions and perceived instructional effectiveness.

A well-formulated research design is crucial for generating valid, reliable, and unbiased results. For this study, a Single Group Pre-test Post-test Design which is a form of pre-experimental design, was employed. This design was chosen to observe the effects of a micro-teaching training program (independent variable) on the teaching effectiveness of distance educators (dependent variable) by comparing participants' responses before and after the intervention.

This design is suitable for small-scale intervention studies where control groups are not feasible. It provides an initial understanding of the cause-effect relationship by measuring the change within the same group over time.

The symbolic representation of the design is as follows:

$$\mathbf{O_1 \rightarrow X \rightarrow O_2}$$

Where:

- O_1 = Pre-test (Baseline measurement of teaching effectiveness)
- X = Micro-teaching Training Program (Intervention)
- O_2 = Post-test (Measurement after intervention)

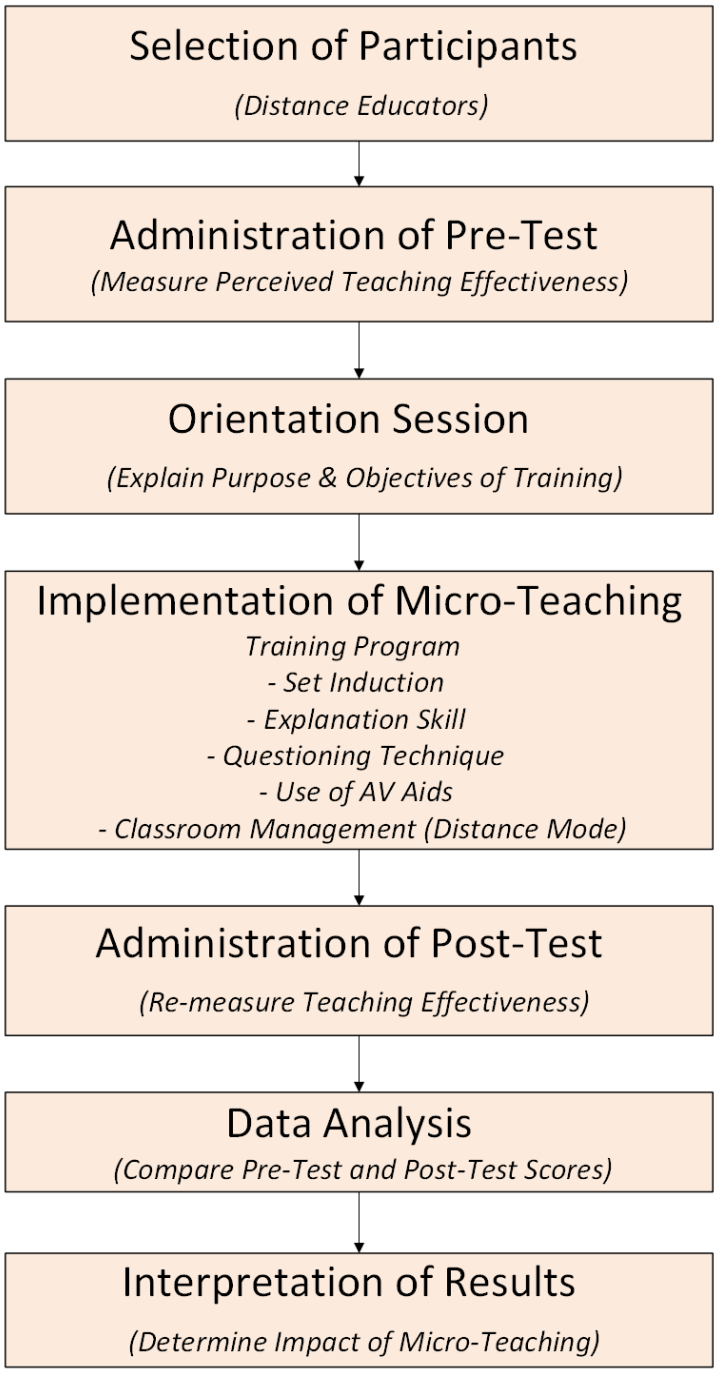

Figure 1: Research Procedure

4. Research Analysis

4.1 Tools of data collection

A group of 30 distance educators were selected for the study. These educators were teaching subjects like Management, Computers, Education and Law through Distance learning mode with little or no knowledge of teaching skills, but are experts in their domains. A questionnaire was developed and distance educators were given to complete it. The questionnaire was prepared with the following criteria –

(Questionnaire at the end of the paper in Appendix 1)

1. As a distance and on-line educator, for the preparation of quality self-learning material writing skills are necessary
2. Distance educators should be able to illustrate concepts with examples
3. A distance educator should be comfortable in handling Internet
4. A distance educator should be able to create power point slide shows for the classes held on the internet
5. Promoting students' interaction is difficult in a class through the internet
6. Planned repetition in the presentation of the class through the internet is necessary
7. Getting feedback is difficult from the distance education students

4.2 Analysis of the data

In the present study of perceived teaching effectiveness of distance educators, quantitative data analysis is done. Quantitative data analysis is done when variables being studied are measured along a scale that indicates "how much" of the variable is present. Quantitative data are reported in terms of scores. After instruments have been administered, scored and tabulated, the first step in quantitative data analysis is to describe it in the form of a summary using descriptive statistics and then interpreting these statistics.

The present study, quantitative analysis compromise of the following parts.

1. To test the "Effect of Micro Teaching on Perceived teaching effectiveness of Distance Educators"
2. Mean: Measures of central tendency
3. Each criterion will be compared on the mean values to evaluate the effectiveness of micro teaching on distance educators

The following analysis is based on questionnaire responses collected before and after the micro-teaching intervention from 20 distance educators. The goal was to measure the perceived teaching effectiveness across various teaching competencies.

Table 2: Mean Value Pretest and Posttest

Teaching Skill/Statement	Pretest Mean	Posttest Mean
Writing skills necessary	3.53	4.62
Illustrate with examples	3.67	4.27
Comfortable with Internet	3.62	4.27
Create PPTs for online class	3.50	4.27
Promoting interaction is difficult	4.31	4.33
Planned repetition is necessary	3.57	4.62
Feedback is difficult	3.27	4.07

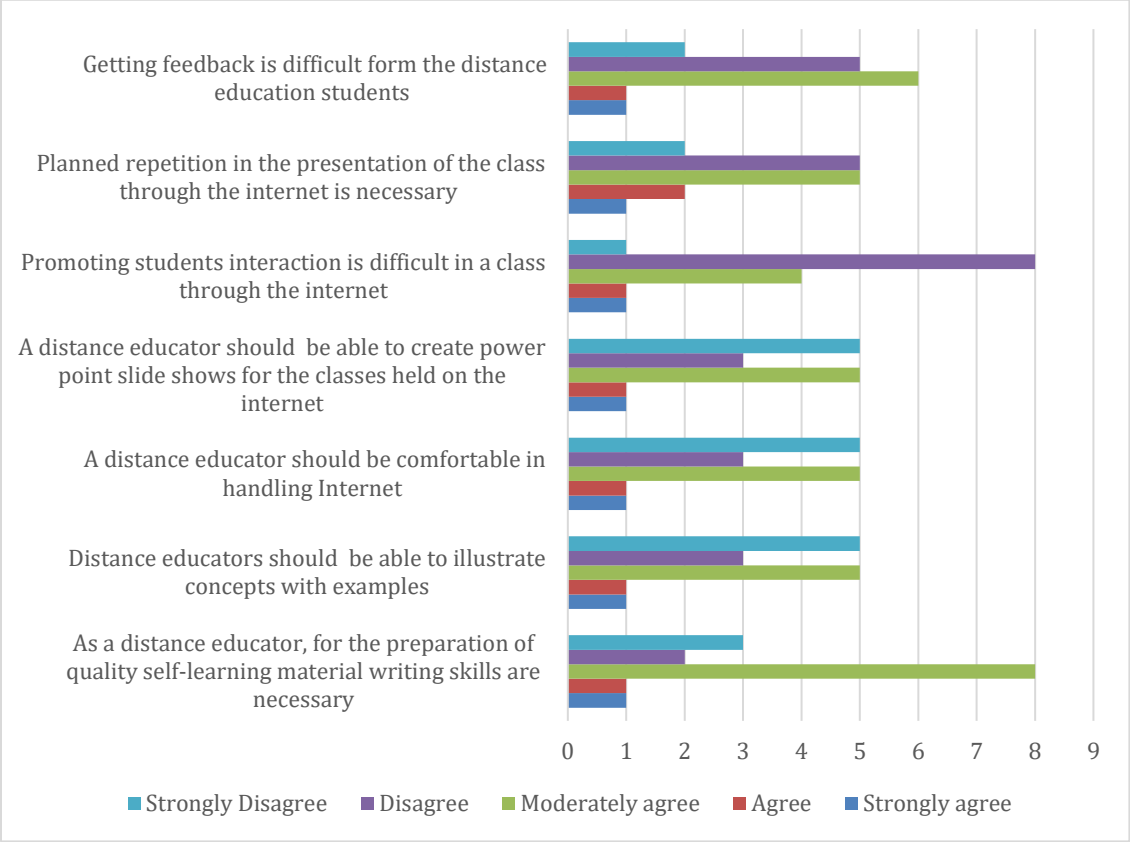

Figure 2 Pretest Data

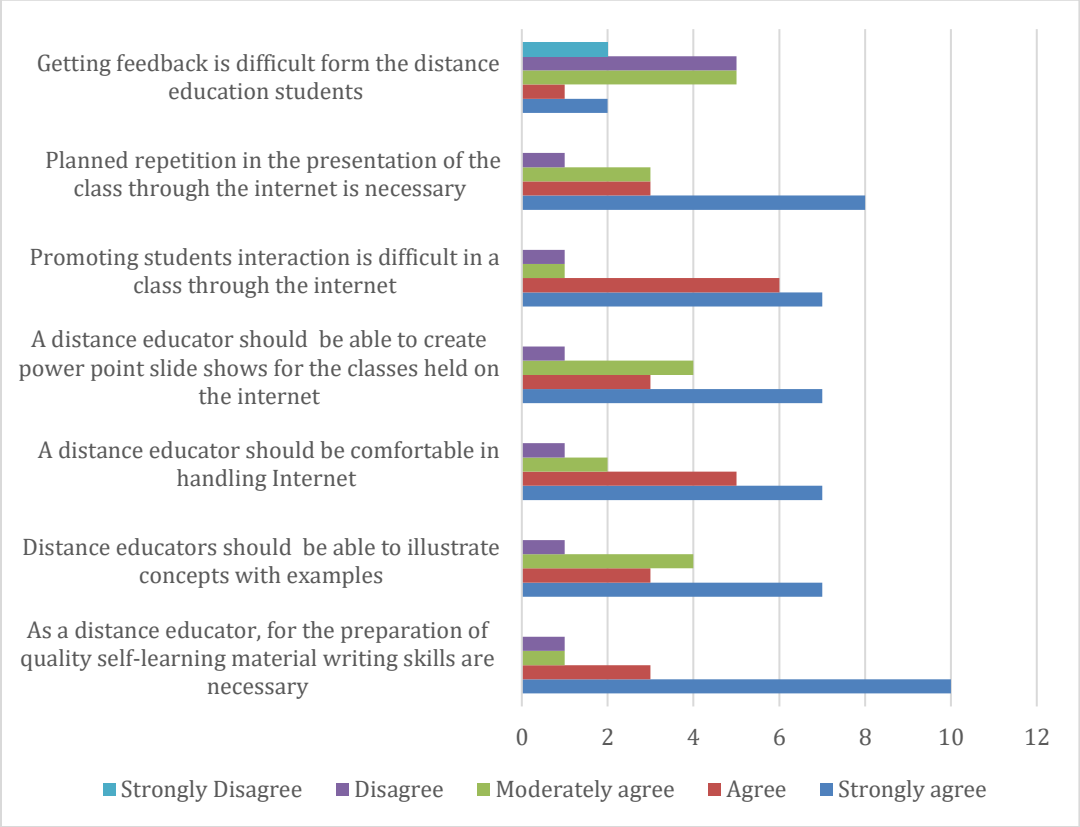

Figure 3 Post Test Data

The analysis of mean scores before and after the micro-teaching intervention reveals a significant improvement in the perceived teaching effectiveness of distance educators. Notably, there was a marked increase in competencies related to the preparation of quality self-learning materials, the use of relevant examples to explain complex concepts, and the ability to handle internet tools effectively. Educators also showed considerable enhancement in their skills to create and deliver PowerPoint presentations for online classes. These improvements suggest that micro-teaching sessions successfully strengthened essential teaching practices tailored to the needs of distance education.

However, some areas remained relatively challenging, particularly the promotion of student interaction and the collection of feedback in virtual learning environments. These skills showed only minimal improvement, implying that despite training, educators continue to face difficulties in fostering two-way communication and engagement with learners in the online mode. This highlights the need for further targeted interventions and expert-led guidance to address these persistent challenges.

Moreover, a noticeable shift in perception was observed across different academic disciplines. Educators, regardless of their subject domain like Management, Computers, Education, or Law acknowledged the importance of acquiring pedagogical skills for delivering effective instruction in the distance education format. This shift reflects a growing awareness among subject experts of the critical role that instructional strategies and learner engagement techniques play in enhancing teaching effectiveness in a digital learning environment.

Hypothesis Testing

To validate the effect of micro-teaching on perceived teaching effectiveness, we performed a **paired sample t-test** between pretest and posttest means for each of the 7 items.

Variables

- Independent Variable: Micro-Teaching Intervention
- Dependent Variable: Perceived Teaching Effectiveness of Distance Educators

Hypotheses

- H_0 (Null Hypothesis): There is no significant difference between pretest and posttest means.
- H_1 (Alternative Hypothesis): There is a significant difference between pretest and posttest means.

$$t = \frac{d}{s/\sqrt{n}} \text{.....(1)}$$

Where:

- d = Mean of the differences (Posttest - Pretest)
- s = Standard deviation of the differences
- n= Number of paired observations (n = 7 items/questions)

Table 3: T Test Calculations

Item	Pretest Mean (O_1)	Posttest Mean (O_2)	Difference ($d = O_2 - O_1$)	$(d_i - \bar{d})^2$	Standard Deviation	Calculated t-value	p-value
1	3.53	4.62	1.09	0.1431	0.3566	5.28	0.0018
2	3.67	4.27	0.60	0.0124			
3	3.62	4.27	0.65	0.0038			
4	3.50	4.27	0.77	0.0034			
5	4.31	4.33	0.02	0.4780			
6	3.57	4.62	1.05	0.1143			
7	3.27	4.07	0.80	0.0078			

Since the p-value (0.0018) < 0.05, we reject the null hypothesis. There is a statistically significant effect of the micro-teaching intervention on the perceived teaching effectiveness of distance educators.

From the above analysis it is indicated that the skills related to writing self-study material, skills of illustrating concepts with examples and skills of handling Internet with preparation of power point shows are highly recommended by the distant educators. Whereas the skills of procuring the feedback for distance learners seems to be difficult for the distance educators. Hence it is further recommended that suggestions should be acquired from the experts of improving this skill.

From the above analysis it is observed that the distance educators may be from any discipline / domain but he or she considers that teaching skills are necessary for effective teaching. The graphs acquired through the questionnaire indicated that the null hypothesis was rejected with the acceptance of declarative hypothesis, which is as follows – "There will be significant effect of Micro Teaching on perceived teaching effectiveness of distance educators".

Conclusion

Distance educators may come from diverse academic and professional backgrounds such as Management, Law, Information Technology, Education, or Social Sciences. However, regardless of their domain expertise, it is essential that they possess strong teaching skills—particularly the ability to communicate content clearly, structure lessons effectively, and engage learners

meaningfully. This study was undertaken to explore and emphasize the importance of micro teaching skills in enhancing the teaching effectiveness of distance educators.

Distance learning offers learners the flexibility to study at their own pace and convenience. For educators to deliver quality instruction in such a mode, mastery of micro teaching skills—such as clear presentation, content organization, use of examples, and integration of technology—is critical. In a rapidly evolving educational landscape, where continuous learning and upskilling are vital, equipping distance educators with pedagogical competencies ensures better learner engagement and improved educational outcomes. Ultimately, incorporating micro teaching skills in distance education not only empowers educators but also enriches the overall learning experience for students.

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Appendix- 1

Kindly rate yourself for the following statements. Your name and the ratings will remain confidential.

	Strongly agree	Agree	Moderately agree	Disagree	Strongly Disagree
1. As a distance educator, for the preparation of quality self-learning material writing skills are necessary					
2. Distance educators should be able to illustrate concepts with examples					
3. A distance educator should be comfortable in handling Internet					
4. A distance educator should be able to create power point slide shows for the classes held on the internet					
5. Promoting students' interaction is difficult in a class through the internet					
6. Planned repetition in the presentation of the class through the internet is necessary					
7. Getting feedback is difficult form the distance education students					