

«مقاله پژوهشی»

راهکارهای اثربخش برای بهبود آموزش‌های از راه دور معلمان

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چکیده

هدف پژوهش حاضر شناسایی راهکارهای اثربخش نمودن آموزش‌های از راه دور معلمان بود. پژوهش از نظر هدف کاربردی، از نظر ماهیت کیفی و با روش تحلیل مضمون انجام شد. جامعه پژوهش از استادان، صاحب‌نظران و خبرگان حوزه آموزش‌های از راه دور و آموزش به معلمان تشکیل شد که با استفاده از نمونه‌گیری کیفی به شیوه ملاک محور با ۱۷ نفر از آنها مصاحبه‌های نیمه ساختاریافته انجام شد. برای تحلیل نتایج مصاحبه‌ها از روش تحلیل مضمون به شیوه تحلیل شبکه مضامین استفاده شد. اعتبار مصاحبه‌ها با استفاده از روش اعتباریابی بازبینی توسط اعضا تایید شد. یافته‌ها نشان داد راهکارهای اثربخش نمودن آموزش‌های از راه دور معلمان شامل ۳ مضمون سازمان‌دهنده، ۱۵ مضمون پایه و ۴۴ خرده مقوله‌ها می‌شوند. مضمون برنامه‌ریزی (شامل مضامین پایه نیازها، تعیین اهداف مشخص، انتخاب محتوای مناسب، زمان‌بندی منعطف، استفاده از فناوری‌های نوین)، مضمون اجرا (شامل مضامین پایه آموزش دبیران، تعامل و مشارکت، تنوع در روش‌های تدریس، فراهم کردن منابع اضافی و پشتیبانی فنی)، و مضمون ارزیابی (شامل مضامین پایه ارزشیابی مستمر، بازخورد سازنده، استفاده از ابزارهای ارزیابی آنلاین، تحلیل نتایج، برگزاری جلسات بازخورد) می‌شود. اثربخش نمودن آموزش‌های از راه دور معلمان می‌تواند به بهبود کیفیت آموزش معلمان و افزایش اثربخشی فرآیند یادگیری دانش‌آموزان منجر شود.

واژه‌های کلیدی

آموزش از راه دور، راهکارهای اثربخش، معلمان.

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تاریخ دریافت: ۱۴۰۴/۰۶/۰۶

تاریخ پذیرش: ۱۴۰۴/۱۲/۰۴

استناد به این مقاله:

معارفوند، زهره و مهدی‌زاده، اعظم (۱۴۰۵). راهکارهای اثربخش برای بهبود آموزش‌های از راه دور معلمان. دوفصلنامه ایرانی آموزش از دور، ۸(۳)، ۵۱-۷۲.

(DOI: ۱۰,۳۰۴۷۳/IDEJ.۲۰۲۶,۷۵۶۱۲,۱۲۴۸)



ORIGINAL ARTICLE

Effective Strategies for Improving Teachers' Distance Education

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Received: ۲۸ Aug ۲۰۲۵

Accepted: ۲۳ Feb ۲۰۲۶

How to cite

Maarefvand, Z. & Mahdizadeh Gokey, A. (۲۰۲۶). Effective Strategies for Improving Teachers' Distance Education. Iranian Distance Education Journal, ۸(۳), ۵۱-۷۲.

(DOI:

[۱۰,۳۰,۴۷۳/IDEJ.۲۰۲۶,۷۵۶۱۲,۱۲۴۸](https://doi.org/10.30473/IDEJ.۲۰۲۶.۷۵۶۱۲.۱۲۴۸))

ABSTRACT

This study aimed to identify effective strategies for enhancing teachers' distance education. The research is applied in nature, adopts a qualitative approach, and utilises thematic analysis. The study population comprised professors, experts, and specialists in the fields of distance education and teacher training. Using purposive sampling, semi-structured interviews were conducted with ۱۷ participants. The interview data were analysed through thematic network analysis. The validity of the interviews was confirmed via member checking. Findings revealed that effective strategies for teachers' distance education encompass three organising themes, ۱۵ basic themes, and ۴۴ sub-categories. The organising themes are: Planning (including needs analysis, setting clear objectives, selecting appropriate content, flexible scheduling, and the use of modern technologies); Implementation (including teacher training, interaction and participation, diversity in teaching methods, provision of supplementary resources, and technical support); and Evaluation (including continuous assessment, constructive feedback, use of online assessment tools, results analysis, and feedback sessions). Enhancing the effectiveness of teachers' distance education can improve the quality of teacher training and increase the efficiency of student learning processes.

KEYWORDS

Distance education, effective strategies, teachers.



Introduction

Distance education is a broad and comprehensive term encompassing a range of strategies within the field of teaching and learning (Sarmadi, Seif, and Talebi, ۲۰۱۱). Web-based training, distributed learning, virtual education, and lifelong learning are all terms that share the common characteristic of separating learners, instructors, and educational support organisations in terms of time and place (Mo'meni-Rad & Kashmeeri, ۲۰۱۵). According to Deal and Shang (۲۰۱۵), distance education occurs when an instructional process initiated in one location is transmitted to learners in one or more other locations. Mardani (۲۰۰۹) describes distance education as a process in which teaching and learning are guided by, and interact with, instructional behaviours through various media technologies such as mail, telephone, fax, computers, email, and web-based multimedia. Simonson et al. (۲۰۱۲) identify four key components of distance education:

۱. Organisational Base: It is conducted under the supervision of an organisation within an academic distance learning environment.
۲. Separation of Instructor and Student: This separation may be temporal, spatial, and may also involve intellectual separation between instructor and student.
۳. Interactive Remote Communication: This refers to telecommunication interactions that include both synchronous and asynchronous communication, as well as interactions between learners, instructors, resources, and instructional content.
۴. Connecting the Learner to Resources and Instructors: Instructional design and resource organisation are implemented to support learning experiences and facilitate interaction between teachers, learners, and resources, thereby enhancing the educational process.

In the education system, it is essential for teachers to continuously receive appropriate training in order to keep up-to-date with current knowledge (Pollitt & Oldfield, ۲۰۱۷). Additional reasons for ongoing teacher training include avoiding obsolescence due to scientific and technological advancements, addressing skill requirements, fulfilling career development needs, enhancing commitment to the organisation, and improving organisational productivity (Ezzati, ۲۰۱۷; Sohrabinezhad, ۲۰۰۷).

The training process is as follows: first, the course announcement and its syllabus are published through the system; then, volunteers register, receive, and study both online and offline content. Finally, their knowledge and skills are assessed through an examination, and the score is recorded in the system. This score is used for internal organisational purposes such as annual evaluations, transfers, and school promotions. Teacher training and professional development contribute to greater efficiency in education. Given the financial challenges facing education and the issues associated with face-to-face courses—including high costs, time wasted in offices and among teachers, ineffective teaching methods, lack of content alignment with teachers' needs, outdated materials, and unsuitable timing and locations—distance education can offer a solution (Amanollah, ۲۰۰۹). Several studies, including those by Mohammadi, Khorsandi Yamchi, and Inanloo (۲۰۲۰), Kiarasi (۲۰۲۰), Afzalkhani and Nejabati (۲۰۱۳), and Shabak (۲۰۱۲), highlight the low quality of face-to-face in-service training courses. Furthermore, other research, such as that by Salimi, Bahari, and Moodi (۲۰۲۱), and Eskandari and Vahdani Asadi (۲۰۱۷), emphasises the challenges of distance in-service training under current

conditions.

From the perspective of teachers, in-service training sessions lack the necessary quality. Specifically, they are not practical; the training topics do not align with their needs, and the sessions are not scheduled at appropriate times. This has led to a lack of interest in attending these courses or, if teachers do attend, their sole purpose is often to obtain a course certificate, which affects their year-end evaluations (Habibi, Kayhan, and Talebi, ۲۰۲۱; Mousavi, ۲۰۲۰). Distance education, utilising information and educational technologies via the Internet, serves as an alternative to face-to-face courses. A review of previous research indicates that the stages of in-service training in general, and distance training as a specific form of this education, are divided into three phases: Planning, Implementation, and Evaluation (Fathi Vajargah, ۲۰۲۳; Mirzaei, ۲۰۲۲; Samiee Zafargandi, ۲۰۱۳; Mirzamohammadi & Ghazizadeh, ۲۰۰۸; Ramesh, ۲۰۱۴)., Moradi et al., ۲۰۱۶; Torbati Nejad, Shahvarani, & Hejgozari, ۲۰۲۲; Medearis & Popiel, ۱۹۷۱; Nielsen, ۲۰۱۱; Noveh Ebrahim & Majidi, ۲۰۱۴; Noveh Ebrahim & Abdi, ۲۰۱۱; Abtahi, ۲۰۰۷; Kobanbyk, ۲۰۲۳; Vural & Ertem, ۲۰۲۳; Amirzadeh, ۲۰۱۷; Kivirand et al., ۲۰۲۱; Mahdavi & Fayyaz, ۲۰۱۴; Alizadeh, ۲۰۱۲; Shirzadi & Roshanbakhti, ۲۰۲۱; Hark, ۲۰۲۳; Peymanfard et al., ۲۰۲۰; Poor Ebrahim, ۲۰۲۲; Nikfar, ۲۰۲۲). Teacher training continues throughout their service, and the researcher's focus is on this aspect. However, in accordance with theoretical foundations and for coherence, it is examined from three perspectives or stages: Planning, Implementation, and Evaluation. In the Planning stage, the educational roadmap is devised. That is, based on the needs assessment conducted, the process begins by setting ultimate, general, and specific

goals. Then, content, instructors, venues, and timing are arranged to achieve these goals. In the next stage, Implementation, all conditions are managed to ensure the designed programme is delivered in the best possible manner. The Evaluation stage assesses the extent to which the intended goals have been achieved and identifies the gap between the current and desired situations (McLachlan et al., ۲۰۱۰). Considering these three stages, the present study seeks to answer the general question: What are the effective strategies for improving distance education for teachers?

Theoretical Foundations and Research Background

In-service teacher training refers to systematic activities designed and implemented to promote the professional development of teachers. Its purpose is to improve and enhance their skills, knowledge, efficiency, and other individual attributes as educators. Pre-service courses are conducted in teacher training centres and universities; these courses are long-term and lead to the attainment of an academic degree. In contrast, in-service courses, which take place during an individual's period of employment, are delivered on a short-term basis (Samiee Zafargandi, ۲۰۱۱). In-service teacher training can also be provided through distance education. Distance education has emerged as a response to learners' needs for non-face-to-face access to non-curricular materials, as well as to the constraints of time and place, and the challenges of compulsory and timely attendance in physical classrooms (Najafi, ۲۰۲۲). Distance education is a method whereby learning occurs in an individual, independent, and self-reliant manner. Instructional elements are delivered via media and managed by an educational organisation, emphasising

interaction between the teacher and learners through indirect communication (Dadkani, ٢٠٢١). Feesly (as cited in Shahraki & Hassani Zahab, ٢٠٢٣) defines distance education simply as a type of training that takes place outside the school environment. According to Keegan, distance education is a distinct form of instruction that does not require the physical presence of teacher and student in a specific location. A learner can commence learning wherever they receive the educational materials. He further adds that collective training classes are formed only in specific cases or for the completion of special tasks (Mirzaei Dehghi, ٢٠٢٤). From Rowntree's perspective, distance education consists of instruction provided through pre-prepared educational packages developed by the teacher, who is separated from the learners both spatially and temporally.

Nevertheless, these learners are continually under the guidance of the teacher (Ghadimiari, ٢٠٢٤). Based on the analysis of the aforementioned definitions, it is evident that experts in this field, while agreeing on the nature of distance education, view this system in contrast to traditional education. They regard it as an advanced achievement of human knowledge and the evolution of science, industry, and technology, with a growing trend. Among the factors contributing to the increasing use of distance education are: responding to the rising demand for education; strengthening formal education; creating suitable opportunities for the training and education of primary school teachers in underprivileged areas; raising the current scientific level of existing teachers in this field; supporting the training of indigenous human resources; reducing educational costs in the long term; and compensating for part of the

shortage of high school teachers in the Ministry of Education through this method (Yousefvand, ٢٠٢٢). Parsad et al. (٢٠٠١), in their research on teacher preparation and professional development, identify four key elements for the effectiveness of in-service teacher training programmes: design, provision of necessary resources, follow-up, and evaluation. These in-service courses owe their effectiveness to specific components known as the curriculum, which are designed to achieve educational and pedagogical outcomes.

Domestic Research Studies

Gaining knowledge about the quantity, quality, and optimal implementation of distance education for teachers requires a thorough examination of the research conducted in this field, so that its strategies and challenges can be identified and a foundation for improved planning can be established. Unfortunately, despite the significant importance of teacher training on the quality of teaching and instruction—and ultimately on student learning outcomes—relatively little research has been conducted regarding the effectiveness of such training, particularly when delivered remotely. Most studies to date have examined the general scope of in-service and distance training. Among domestic research, Bahmani (٢٠٢٣) conducted a study aimed at identifying distance education policies at Payame Noor University, employing an interpretive phenomenological approach. The results indicated that the primary barriers to implementing distance education policies include excessive centralisation within the higher education system, individual barriers, environmental barriers, issues related to tools and technology, managerial and structural obstacles, macro-national barriers, and organisational challenges. Shahcheraghi et

al. (۲۰۲۲) carried out a study entitled "Investigating Theories and Presenting Strategies and Suggestions for Improving Online Teaching and Distance Education, a descriptive-analytical method. Their findings highlight the importance of developing training courses that utilise the latest technologies. Teachers should dedicate time and effort to designing and implementing these courses to enhance student learning. The adoption of appropriate teaching strategies can improve the online learning environment and, consequently, increase student engagement. Torbatinejad et al. (۲۰۲۲) conducted a study titled the Impact of Online Education on the Learning Process with a Focus on Strategies for Enhancing Effectiveness, The results suggested that e-learning is essential for expanding and improving learning efficiency. By focusing on factors such as enhancing teachers' skills in using new technologies, establishing continuous and effective communication between parents and teachers, engaging students in online classes, providing suitable electronic content, resolving infrastructural and telecommunication issues, and removing financial barriers for disadvantaged students, it is possible to increase the effectiveness of e-learning and ultimately improve the country's educational standards. Dortaj, Zarei Zavaraki, and Aliabadi (۲۰۱۷) conducted research entitled "Designing and Validating a Model for Distance Education Based on MOOCs for University Students." This study employed a descriptive-analytical method with a systematic approach to reviewing research literature. The findings culminated in the development of a proposed model comprising the stages of preparation, analysis, design, development, implementation, evaluation, and learning optimisation.

Research Conducted Overseas

Among foreign studies, Coskun and Demirci (۲۰۲۴) conducted research entitled "An Examination of the Attitudes of Teachers Working in the Turkish Ministry of National Education Towards Distance Education Based on Various Variables." This study employed a descriptive survey method. According to the findings, the majority of teachers held a positive attitude towards distance education. Female teachers demonstrated a more favourable attitude than their male counterparts, and teachers of general culture subjects exhibited a more positive attitude than those teaching vocational courses. Kubanbek (۲۰۲۳) also conducted a study titled "Training Teachers of Foundational Disciplines to Work with Students in Distance Learning." The aim of this study was to examine teachers' attitudes towards distance education, as well as their perceived barriers and training needs. The results indicated that, for the successful implementation of distance education in educational institutions, it is essential for teachers to receive appropriate training. This training should focus on the quality principles of distance education, enabling teachers to develop their skills in utilising various forms of learning. Such an approach helps teachers become acquainted with new tools and techniques, allowing them to make optimal use of educational technologies. Vural and Eterem (۲۰۲۳) conducted a study entitled "Principals' and Teachers' Opinions on Managing Educational Processes in Distance Education." This research employed a phenomenological method. The findings revealed that, at the onset of the distance education process, school principals and teachers encountered difficulties in managing teaching processes. These

challenges were attributed to a lack of materials, difficulties adapting to the new method, insufficient technical infrastructure, and students' inability to participate actively in lessons. Similarly, Ozbas and Yilmaz (٢٠٢٢) conducted a survey-based study titled *Examination of Teachers' Attitudes Towards Distance Education in Kyrgyzstan*.

This research was survey-based. The study found that teachers' attitudes towards the limitations of distance education did not vary according to subject area, experience, educational qualifications, ownership of a personal computer, internet access, daily internet usage duration, or participation in distance education programmes. However, differences were observed in relation to gender and the actual experience of encountering problems. Information technology teachers, those who owned computers, had internet access, used the internet for five to ten hours daily, and participated in distance education programmes expressed positive attitudes towards the benefits of distance education. In contrast, female teachers and those who experienced difficulties during the distance education process held negative attitudes towards its limitations. Arabci and Kardas (٢٠٢٢) also conducted a study entitled **Teachers' Perceptions of Distance Education**. This research was survey-based. The findings indicated that perceptions regarding access to resources, educational planning, and the overall framework were at moderate levels, with no significant differences in teachers' perceptions of distance education based on gender, educational group, age, professional experience, or levels of technology use. A review of the studies conducted reveals that most research has

addressed teacher education issues at a general level and, in some cases, partially examined teachers' views and identified problems. However, no comprehensive studies have been undertaken to identify and propose effective solutions for each stage of distance teacher education (planning, implementation, evaluation). This highlights a significant research gap in the field.

Research Methodology

This study is applied in purpose, qualitative in nature, and conducted using thematic analysis. The research population comprised experts in the field of distance education and experienced professors specialising in teacher training. Using purposive sampling, ١٧ individuals were selected as participants. The selection criteria required participants to have experience and expertise in designing, planning, and implementing distance education, as well as having authored books, articles, or other works in this field. Sampling continued until theoretical saturation was achieved. To reach saturation, after each interview the data were transcribed, thoroughly reviewed, and subjected to content analysis and open coding to identify categories. In some cases, to fully clarify certain categories or issues raised in earlier interviews, new questions were formulated, and previous questions were revised or expanded. By the seventeenth interview, the identified categories had become repetitive, and the interview process was concluded as the researcher had reached theoretical saturation. Table ١ presents the demographic characteristics of the interviewees.

Interviewees' Characteristics

Interviewee	Education & Years of Service	Area of Expertise	Selection Criteria
١	Bachelor's / ٢١ years	Distance education instructor	Experienced in teaching distance teacher education programs
٢	PhD / ١٩ years	Professor at Farhangian University	Subject matter expert
٣	Master's / ١٧ years	University education manager	Experienced in implementing distance teacher education programs
٤	PhD / ١٤ years	University professor	Author in the field of teacher education
٥	Bachelor's / ١١ years	Distance education instructor	Experienced in teaching distance teacher education programs
٦	Master's / ١٦ years	Distance education instructor	Experienced in implementing distance teacher education programs
٧	PhD / ١٣ years	University professor	Author and expert in teacher education
٨	Master's / ٢١ years	Education specialist in local education districts	Experienced in implementing and planning distance education
٩	Master's / ١٩ years	Distance education instructor	Experienced in teaching distance teacher education programs
١٠	PhD / ٣٠ years	University professor	Author and expert in teacher education
١١	PhD / ٢٢ years	University professor	Author and expert in teacher education
١٢	Master's / ١٤ years	Head of distance education	Experienced in implementing distance teacher education programs
١٣	Bachelor's / ١٥ years	Distance education instructor	Experienced in teaching distance teacher education programs
١٤	PhD / ٩ years	University professor	Subject matter expert
١٥	Master's / ١٨ years	Distance education instructor	Experienced in teaching distance teacher education programs
١٦	Bachelor's / ١٦ years	Distance education instructor	Experienced in teaching distance teacher education programs
١٧	Master's / ١٣ years	Education specialist in local education districts	Experienced in designing distance teacher education programs

The research instrument employed was a semi-structured interview. The interview protocol was developed based on the study's conceptual framework, with the primary questions focusing on identifying effective strategies for distance teacher education during the planning, implementation, and evaluation stages. During the interviews, supplementary and more specific questions were posed to

clarify emerging categories.

To ensure the validity, credibility, accuracy, and robustness of the data, Lincoln and Guba's (١٩٨٥) four criteria were applied: credibility, transferability, dependability, and confirmability. The measures taken to evaluate the validity of the research are presented in Table ٢.

Table ٢. Criteria for Assessing Research Validity

Criteria	Actions Taken
Credibility	To enhance credibility, methods such as prolonged engagement of researchers with the subject, the use of multiple data collection techniques (triangulation) including note-taking, audio recording, conversations, and observation of behaviours, as well as verification of codes and categories extracted by researchers to confirm the coding process and achieve consensus on codes, were employed.
Transferability	To enhance transferability and relevance, the entire research process was described in detail to facilitate replication and to provide a clear characterisation of the studied population. Samples were selected based

Criteria	Actions Taken
	on experience level, years of service, knowledge, and subject expertise, with preference given to those demonstrating the highest level of awareness.
Dependability	Dependability was ensured by documenting interviews in handwritten files, repeatedly reviewing and refining codes, and verifying the coding and categorisation of findings through peer review.
Confirmability	Confirmability was ensured through supervisor review, which helped to guarantee reliable and well-substantiated results.

The credibility of the interviews was further enhanced through member checking. The interview transcripts and analysis results were sent to five participants, who reviewed and confirmed the accuracy of the interpretations.

The analysis of the interview results was conducted using thematic analysis via the theme network approach, carried out manually by the researcher and colleagues. There are various methods of thematic analysis, each following specific procedures. One appropriate analytical method is theme network analysis. Generally, the thematic analysis process can be implemented in six steps: ١. Familiarisation with the data; ٢. Generating initial codes and coding; ٣. Searching for and identifying themes; ٤. Constructing the theme network; ٥. Analysing the theme network; ٦. Producing the report (ibid.: ١٧٩-١٨٢). In accordance with the first step, since the interviewer collected the information and conducted the interviews, they already possessed initial analytical insight. However, before and during coding, the transcribed interview texts were reviewed repeatedly, and an initial list of ideas present in the data was prepared. In the second step, initial codes were generated and coding was performed. At this stage, statements and verbal evidence containing themes were coded, and related subcategories were extracted. Coding was done manually by writing notes directly on the data texts. The third step focused on identifying themes. In thematic analysis,

themes or data patterns can be recognised inductively (data-driven) or deductively (theory-driven). The credibility of the interviews was further enhanced through member checking. The interview transcripts and analysis results were sent to five participants, who reviewed and confirmed the accuracy of the interpretations. Since the interviews were conducted using a conceptual framework derived from the literature review, a deductive (top-down) approach was employed to analyse themes and categorise qualitative data. Specifically, the stages of planning, implementation, and evaluation were treated as organising themes, with subcategories and basic themes classified under these three groups. In the fourth step, a thematic network was constructed, organised across three levels: basic themes, organising themes, and global themes. In practice, basic themes were identified first; organising themes were then derived by grouping these basic themes, and the global theme was determined by grouping the organising themes. The thematic network was subsequently illustrated. Efforts were made to ensure internal homogeneity and external heterogeneity of themes, meaning that data within each theme were coherent in meaning and concept, while remaining clearly distinct from other themes. The fifth step involved analysing the thematic network, during which themes and their related categories were reviewed, examined, and interpreted. Finally, in

the sixth step, a comprehensive report was prepared, supported by sufficient evidence relating to the themes present in the data. Table ٣ presents the results of extracting subcategories from the interview transcripts. As some subcategories recurred across different

interviews, the text from one interview was used to extract the relevant subcategory, and the column listing interviewee numbers includes the codes of all interviewees who referred to that subcategory.

Table ٣. Example of Categorization and Extraction of Themes from Interview Texts

Interviewee Codes	Interview Text	Subcategories	Basic Theme
(٩), (٧), (٣), (٢), (١)	Surveys and interviews help principals and planners identify teachers' strengths and weaknesses and design educational programs accordingly.	Identifying teachers' strengths and weaknesses through surveys and interviews	Needs Analysis
		Designing educational programs based on teachers' strengths and weaknesses	
(١٤), (١١), (٨), (٥), (٢)	Defining clear objectives in distance teacher training courses not only contributes to clarity and focus in the learning process, but also enhances motivation, participation, and the quality of education.	Defining clear objectives for clarity in the learning process	Defining Clear Objectives
		Defining clear objectives for focus in the learning process	
		Defining clear objectives to increase motivation	
		Defining clear objectives to encourage participation in the learning process	
		Defining clear objectives to improve the quality of the learning process	

The credibility of the interviews was further enhanced through member checking. The interview transcripts and analysis results were sent to five participants, who reviewed and confirmed the accuracy of the interpretations.

After extracting and grouping the subcategories, the basic themes, organising themes, and global themes were identified.

To avoid potential bias, efforts were made to ensure that the recording and documentation of interviewees' opinions were not influenced by the researcher's experiences or assumptions. The interview protocol was also shared with

participants for their feedback. Coding was conducted collaboratively with colleagues to enhance the credibility of the data. In reporting, examples of interviewees' quotations were included to strengthen trustworthiness and prevent imposed representation. Furthermore, the researchers adhered to principles of confidentiality, informed consent, thorough documentation, and transparency to prevent distortion of reality.

Table ٤ presents the subcategories, basic themes, organising themes, and the overarching theme.

Table ٤. Classification of subcategories into basic, organizing, and overarching themes

Subcategories	Basic Theme	Organizing Theme	Overarching Theme
Identifying Teachers' Strengths and Weaknesses	Needs analysis	Planning	Effectiveness of distance education
Designing educational programmes based on teachers' strengths and weaknesses			
Setting specific goals to enhance clarity in the learning process	Setting specific goals		
Setting specific goals to maintain focus during the learning process			
Setting specific goals to enhance motivation			

Setting specific goals for participation in the learning process.		
Setting specific goals to enhance the quality of the learning process		
Selecting content based on genuine needs	Selecting appropriate content	
Selecting content based on practicality		
Selecting content based on diversity and appeal		
Flexibility in scheduling in accordance with teachers' work plans	Flexible scheduling	
Flexibility in scheduling based on evaluation and feedback is essential.		
Continuous updating of educational materials	Use of modern technologies	
Utilising modern technologies to facilitate easy access to educational resources		
Utilising modern technologies for interactive and engaging learning		
Utilising Modern Technologies for Personalised Learning		
Utilising modern technologies to facilitate learning anytime and anywhere		
Using Modern Technologies for Evaluation and Feedback		
Conducting training workshops to familiarise teachers with virtual tools.	Teacher training	Implementation
Holding training workshops to enhance the quality of distance education courses		
Holding training workshops to enhance teachers' motivation and self-confidence		
Conducting training workshops to enhance the quality of teaching and learning.		
Holding training workshops to foster an interactive learning environment		
Active participation by teachers in group sessions and discussions to enhance the quality of distance education courses.	Interaction and participation	
Active participation of teachers in group sessions and discussions enhances motivation, commitment, and facilitates learning from one another's experiences.		
Active participation by teachers in group sessions and discussions to enhance communication and social skills.		
Active participation of teachers in group sessions and discussions to obtain feedback		
Active participation by teachers in group sessions and discussions fosters a sense of solidarity.		
Diversity in Teaching Methods to Enhance Motivation and Foster Deep Learning	Diversity in Teaching Methods	
Diversity in Teaching Methods to Enhance Learning		
Providing supplementary resources and materials to enhance the content	Providing Additional Resources	
Providing supplementary resources to enhance research skills.		
Technical support to facilitate access to content	Technical Support	
Technical support to facilitate learning.		
Continuous evaluation to identify strengths and weaknesses.	Continuous evaluation	Evaluation
Continuous evaluation to facilitate self-directed learning		
Constructive feedback to enhance the learning experience	Constructive feedback	
Constructive feedback to improve processes		
Using Online Tests	Use of Online Assessment Tools	
Using Online Surveys		
Reviewing the evaluation results	Results	
Using Evaluation Results	Analysis	
Holding feedback sessions to foster a safe environment	Holding	

Conducting feedback sessions for practical correction	Feedback Sessions		
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Based on Table ٣, the overarching theme of this study is the effectiveness of distance education, which comprises three organising themes: planning, implementation, and evaluation. The following sections provide a detailed explanation of the findings for each organising theme.

Effective Strategies for Enhancing Distance Education for Teachers During the Planning Stage

Needs Analysis

Needs analysis involves identifying teachers' strengths and weaknesses and designing training programmes accordingly. Since each teacher may have different educational needs, needs analysis helps to recognise this diversity and enables distance education designers to develop more effective programmes tailored to those needs. As one interviewee (Code ٥) stated: *"Through surveys and interviews, teachers feel that their opinions and needs are taken into account, which can increase their participation and motivation in training courses."* Another interviewee (Code ١١) explained: *"When teachers are involved in the process of identifying needs, they develop a stronger sense of ownership towards training programmes. When they feel their voices are heard, they are more willing to engage in educational activities and school programmes. This participation may include attending training courses, offering suggestions, and collaborating in programme design."*

Setting specific goals

Defining clear objectives in distance education

is regarded as a fundamental pillar for achieving high-quality learning. These objectives assist course instructors and trainee teachers in establishing clear expectations of the learning process and planning accordingly. According to the interviewees, setting clear objectives is essential to ensure transparency, focus, motivation, participation, and quality throughout the learning process. One interviewee (Code ١٤) noted: *"Clear objectives help teachers understand what is expected of them and what skills and knowledge they need to acquire. This clarity can reduce ambiguity and confusion during the learning process."* An expert (Code ٤) added: *"When teachers have clear objectives, they are more likely to be motivated to participate in training courses and strive to achieve these goals. This motivation can lead to improved learning and teaching quality."* Another education specialist (Code ١٥) emphasised: *"Clear objectives can serve as a foundation for the continuous development of training programmes. By evaluating outcomes and feedback, programmes can be improved and adapted to meet new needs."*

Selecting Appropriate Content

Content is the core of distance education and has a significant impact on teachers' learning. Selecting appropriate content means that materials should align with teachers' needs, address different learning styles, and remain up to date and reliable. High-quality content can deepen understanding, enhance knowledge acquisition, and play a key role in creating an effective educational experience. Ultimately, the right content ensures that learning is efficient and effective, enabling teachers to acquire the necessary skills and knowledge.

One interviewee (Code ٣) noted, *“Educational content should be designed based on teachers’ actual needs. These needs can be identified through surveys, interviews, and consultations with teachers. Content that reflects genuine needs can enhance teachers’ motivation and participation in training programmes.”* Another professor (Code ٨) added, *“Educational content should address the challenges and problems teachers encounter in the classroom. This can help them find practical and applicable solutions to their issues.”* A further interviewee (Code ١) emphasised, *“Educational content should include diverse methods and techniques, such as practical workshops, group discussions, and interactive activities. This variety can increase the appeal of training programmes and help maintain teachers’ attention.”*

Flexible Scheduling

This strategy emphasises the importance of time flexibility in distance education. Flexible scheduling enables teachers to select the time and place that best suit their study and participation in training activities. This feature allows teachers to adapt their learning process according to personal circumstances and daily responsibilities.

One interviewee (Code ٧) explained, *“Teachers usually have busy schedules and must manage teaching, lesson preparation, and other responsibilities. Therefore, holding courses at times when teachers are free can increase their participation.”* Another interviewee (Code ١٦) stated, *“Offering courses outside working hours or on holidays allows teachers to learn without time pressure.”* Additionally, one interviewee (Code ١٢) emphasised the importance of feedback: *“After courses are held, collecting feedback from*

teachers about scheduling can help improve future timetables. Based on this feedback, course times should be adjusted to meet teachers’ needs and preferences.”

Using Modern Technologies

This strategy emphasises the importance of planning for and anticipating the use of modern technologies in distance education. New technologies offer tools and methods that can facilitate and enhance the learning process. Overall, careful planning for the integration of modern technologies results in higher quality and greater effectiveness in distance education, better equipping instructors to address learning challenges in the digital age.

One interviewee (Code ١٧) remarked, *“Modern technologies such as Learning Management Systems (LMS) enable teachers to easily access educational resources, videos, articles, and online courses.”* Another interviewee (Code ٦) added, *“Interactive tools such as video conferencing software, survey platforms, and online collaboration tools can help teachers engage more actively in the learning process. These tools create a dynamic and engaging learning environment.”* An expert (Code ٥) also noted, *“Teachers can easily access webinars and online conferences, benefiting from the experiences and knowledge of others.”*

Effective Strategies for Implementing Distance Education for Teachers

The organising theme of implementation comprises five core components: teacher training, interaction and participation, diversity in teaching methods, provision of additional resources, and technical support. Each of these components is explained below:

Teacher Training

This strategy emphasises the importance of basic training and the introduction of principles in distance education. Before engaging with specialised and in-depth content, teachers need to familiarise themselves with general concepts, the course structure, and the rules necessary for the effective use of the educational platform. Initial training helps participants better understand how to interact with educational content, utilise relevant technologies, and manage their time and activities. This process makes learners feel more comfortable in the digital learning environment and equips them with a greater ability to engage with and benefit from the content throughout the course. Reviewing general principles and rules thus lays the foundation for more effective and successful learning at any level.

One interviewee (Code ٢) noted, *“Training workshops can help teachers become familiar with modern educational tools such as video conferencing platforms, online collaboration tools, and interactive software.”* Another interviewee (Code ١٥) added, *“Holding training workshops can enhance teachers’ digital skills, including working with various software, using the internet, and managing online resources.”*

Interaction and Participation

In distance education, teachers’ active presence and their ability to communicate effectively with students play a crucial role in enhancing the quality of learning. Teacher interaction may include providing explanations, answering questions, encouraging participation in discussions, and offering appropriate feedback. Such engagement transforms the learning process into a dialogue and exchange of ideas,

fostering a stronger sense of connection between learners, instructors, and the educational content. Therefore, creating suitable conditions for interaction and participation is essential. Overall, these conditions can improve learning experiences and enhance teachers’ performance in the distance education environment.

One expert (Code ١١) stated, *“Active participation of teachers in sessions and group discussions helps create an interactive environment where they can share opinions, experiences, and ideas with one another.”* Another specialist in teacher education (Code ١٢) explained, *“Participation in group discussions can increase teachers’ commitment to learning and improve the quality of their teaching. This commitment can also lead to better academic outcomes for teachers.”* A professor emphasised communication skills: *“Participation in group discussions helps teachers strengthen their communication skills, including active listening, expressing opinions, and providing constructive feedback.”*

Diversity in Teaching Methods

This strategy highlights the importance of employing diverse teaching methods in distance education. Learners in both online and offline environments possess varying learning styles, motivation levels, and needs. Therefore, utilising multiple instructional approaches can optimise the learning process and foster a more comprehensive and engaging experience. Diverse teaching methods not only present content in various formats but also introduce variety into educational activities and tasks. This diversity may include videos, interactive texts, online workshops, group discussions, and practical exercises.

One interviewee (Code ٨) remarked, *“Using*

different methods such as videos, texts, podcasts, and interactive activities can help capture teachers' attention." Another expert (Code ٥) added, *"Employing diverse teaching methods can encourage teachers to think critically and analyse information. This can improve their problem-solving and decision-making skills."*

Providing Additional Resources

Providing additional resources emphasises the importance of using supplementary materials in the process of distance education for teachers. Supplementary resources refer to additional supportive materials that contribute to deeper and more comprehensive learning. These may include e-books, scholarly articles, videos, websites, podcasts, and other online courses.

One interviewee (Code ١٠) stated, *"Offering various resources such as scientific articles, books, videos, and webinars can enrich educational content. This diversity allows teachers to approach educational topics from different perspectives."* The same interviewee added, *"Providing supplementary materials can encourage teachers to conduct further research and exploration, thereby strengthening their research skills."* Another interviewee (Code ١٤) emphasised, *"Making supplementary resources available online enables teachers to access information easily and take advantage of modern technologies."*

Technical Support

This theme emphasises the importance of providing technical support to teachers in distance education. In an online learning environment, teachers may encounter technical challenges and obstacles that can hinder their teaching process. These challenges may include issues such as unstable internet access, difficulties in using educational software, or

technical errors on learning platforms.

One interviewee (Code ١٦) explained, *"Technical support helps instructors quickly access appropriate solutions when technical problems arise, preventing interruptions in the learning process."* Another expert (Code ١٥) noted, *"With technical support, teachers can easily access educational resources and course content and make effective use of them."* A further expert added, *"Technical support can help teachers become familiar with new tools and technologies and use them correctly, which can increase their confidence in teaching."*

Effective Strategies for Distance Education in the Evaluation Stage

The organising theme of evaluation comprises five core components: continuous assessment, constructive feedback, utilisation of online assessment tools, analysis of results, and feedback sessions. Each of these components is explained below:

Continuous Assessment

This theme pertains to the process of evaluating and measuring learners' progress throughout the training programme, conducted continuously and on an ongoing basis. Rather than relying solely on final examinations or large-scale assessments, continuous assessment employs multiple tools and methods to provide a more comprehensive picture of the learning process and learners' mastery of the material. In distance education, continuous assessment is a particularly valuable strategy.

One interviewee stated, *"Continuous assessment allows instructors to identify their strengths and weaknesses. This analysis can help them focus on specific aspects of their teaching and improve."* Another expert in teacher education explained, *"Through*

continuous assessment, instructors can quickly receive necessary feedback and make adjustments accordingly."

Constructive Feedback

Constructive feedback, as a strategy in distance education, must be precise and clearly articulated so that learners can fully understand and act upon it. Constructive feedback consists of information and comments that help learners identify their strengths and weaknesses and improve their performance.

One interviewee (Code ١٤) stated, *"By receiving feedback, teachers can develop their teaching skills and learn new instructional methods."* Another expert (Code ١٢) added, *"Constructive feedback enables instructors to share experiences and insights with teachers and to learn from them."*

Use of Online Assessment Tools

Online tools are readily accessible, enabling learners to participate in assessments at any time and from any location.

One interviewee (Code ١) explained, *"Many online platforms provide automatic grading of tests. This feature helps instructors save time on grading and instead focus on analysing the results."* Another interviewee (Code ١٠) noted, *"By using online tests, instructors can view results in real time and quickly respond to teachers' needs."* An expert in distance education (Code ٤) added, *"Online assessments allow instructors to collect more precise data on teachers' performance, including scores, time spent answering, and response patterns."*

Results Analysis

Accurate analysis of assessment data is crucial for instructors. It enables them to better understand how learners acquire knowledge

and the factors that influence their learning. By employing various analytical methods and engaging effectively with learners, instructors can gain deeper insights into the learning process and tailor their teaching approaches to meet learners' needs.

One interviewee (Code ٩) remarked, *"Assessment results can provide feedback to instructors and help them improve their teaching methods. This feedback may include teachers' comments and an analysis of instructors' performance."* Another interviewee (Code ٧) added, *"By using assessment results, course planners can identify specific areas where teachers and instructors require improvement and design professional development programmes to enhance their skills."*

Feedback Sessions

Organising group sessions at the end of each distance education course to analyse feedback is an effective practice that can enhance both learning and teaching processes. During these sessions, instructors, teachers, and senior education administrators can exchange ideas and offer valuable insights.

One interviewee (Code ٦) emphasised: *"It is important to create a safe, non-judgemental space for discussion so that teachers can freely share their opinions and experiences."* Another interviewee (Code ٩) noted: *"Access to diverse opinions and information leads to better decision-making, but it is essential to prepare a report of the session outcomes to guide future planning."*

Final Thematic Network

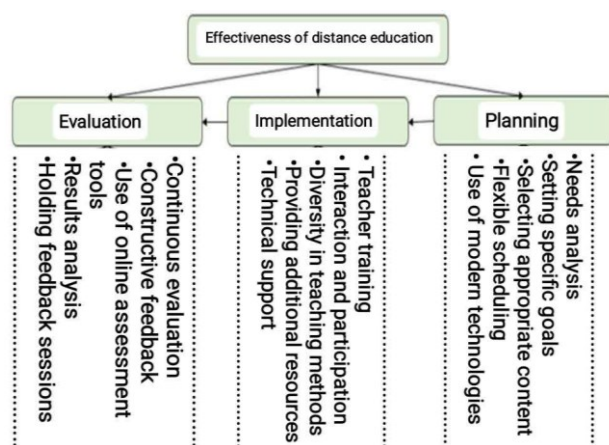


Figure 1. Network of Themes for Effective Distance Education Strategies for Teachers.

The figure clearly illustrates how the stages of planning, implementation, and evaluation are interconnected and how they can be utilised to enhance the process of distance education for teachers. Information obtained during the planning stage can support both implementation and evaluation, while experiences and outcomes from evaluation can inform and improve planning. All these strategies are learner-centred and aim to enhance learning and raise the quality of education for teachers. By following these approaches, the quality of both learning and teaching can be improved.

Interpretation of the diagram

The diagram clearly illustrates how the stages of evaluation, implementation, and planning are interconnected and how they can be utilised to enhance the process of distance education for teachers. Insights gained during the planning stage can inform both implementation and evaluation, while experiences and results from the evaluation stage can improve future planning. All the strategies presented are learner-centred and aim to improve learning outcomes and elevate the quality of education for teachers. By following these strategies, the quality of both teaching and learning can be significantly enhanced.

Discussion and Conclusion

Based on the findings, five key strategies were identified to enhance the planning stage of distance education for teachers: needs analysis, setting clear objectives, selecting appropriate content, flexible scheduling, and the use of modern technologies. These findings are consistent with previous research by Bahmani (2023), Torbati-Nejad et al. (2022), Dorrtaj et al. (2019), Ozbas and Yilmaz (2022), and Arabchi and Kardas (2022). Habibi et al. (2021) and Mousavi (2020) emphasised that educational topics should align with teachers' needs and be delivered at appropriate times. Similarly, Pierogater (2005) stated that the primary goal of distance education is to align individuals' aspirations, interests, and future needs with organisational goals and requirements. Needs analysis helps identify the educational requirements of instructors and teachers. Through precise analysis, educational content can be tailored to existing knowledge and skill levels, making the training more targeted and effective.

Clear and measurable educational objectives also assist instructors in defining the learning pathway. These objectives should be designed so that both instructors and teachers can assess their progress and make necessary adjustments. Naveh-Ebrahim and Abdi (2011) emphasised that organisational goals must be clearly defined to meet institutional expectations. Moradi et al. (2016) highlighted the importance of setting clear objectives at social, organisational, and individual levels. According to Mirsepasi (2006), effectiveness is determined by the degree of success in achieving goals. Educational content must align with these objectives and address teachers' needs. Appropriate content may include digital

resources, videos, articles, and other instructional tools that support effective learning. Amanollah (٢٠٠٩) noted that mismatched content and teacher needs are among the challenges in distance education. Eskandari and Vahdani-Asadi (٢٠١٧) identified the primary issue as teachers' dissatisfaction with the relevance and usefulness of course content, suggesting that distance education often lacks sufficient quality from the teachers' perspective. One of the key advantages of distance education is flexible scheduling. Instructors should be able to determine suitable times for training based on teachers' circumstances and needs. This flexibility can enhance participation and motivation. Habibi et al. (٢٠٢١) emphasised that scheduling for distance education must be appropriate and adaptable. Vareh Zardi (٢٠٢٣) stated that distance education should be accessible at any time and from anywhere. Modern technologies are powerful tools for improving the distance education process. The use of educational platforms, interactive software, and communication tools can facilitate learning and enhance interaction between instructors and teachers.

According to Ahmadi (٢٠٢١), modern technologies are essential for updating knowledge and skills. Kowsari (٢٠٢٣) highlighted the role of multimedia technologies in expanding universities and diversifying teaching methods to support the development of distance education. Ultimately, by applying these five strategies, the quality and effectiveness of distance education during the planning stage can be significantly improved. This approach not only helps instructors deliver better training but also enables teachers to develop their skills in a dynamic and engaging learning environment. Based on the findings,

five strategies were identified to enhance the implementation stage of distance education for teachers: teacher training, interaction and participation, diversity in teaching methods, provision of supplementary resources, and technical support. These findings align with previous research by Torbati-Nejad et al. (٢٠٢٢) and Vural and Etrim (٢٠٢٣). Teacher training is one of the most critical factors in the success of distance education. Training instructors in the use of modern technologies, instructional design, and online classroom management enables them to make optimal use of available tools and facilitate the learning process. Kowsari (٢٠٢٣) considers teacher training essential for educational institutions, while Gholami (٢٠٢٤) emphasises the necessity of using educational tools in teacher training. Vareh Zardi (٢٠٢٣) highlights the role of internet-based distance education and modern technologies in fostering teacher interaction. Creating an environment for active interaction and participation between instructors and teachers is highly important. Using interactive tools such as surveys, group discussions, and collaborative activities can boost teachers' motivation and engagement, strengthening their sense of belonging. Torbati-Nejad et al. (٢٠٢٢) noted that distance education and modern technologies facilitate meaningful interaction and participation. Employing diverse teaching methods enables instructors to address the varied needs of learners. Combining traditional and contemporary approaches—such as project-based learning, peer learning, and flipped classrooms—can enhance both the appeal and effectiveness of instruction. Kowsari (٢٠٢٣) emphasised that diverse teaching strategies in distance education are increasingly aligned with cognitive learning theories. Abusnina and Zairi (٢٠١٠) also highlighted the importance of

varied approaches in evaluating the effectiveness of e-learning. Providing additional educational resources—such as videos, articles, e-books, and webinars—gives teachers access to deeper insights into specific topics when required. These resources support independent and self-directed learning. Zhao et al. (٢٠٠٩) stated that supplementary materials help maximise the use of available resources, while Vareh Zardi (٢٠٢٣) stressed the necessity of unlimited online resources for instructor collaboration. Offering technical support to instructors and teachers—including training on educational platforms and troubleshooting—can reduce stress and increase confidence in using educational technologies. This support may include online guides, training sessions, and ٢٤/٧ assistance. Momeni Rad and Kashmiri (٢٠١٥) identified technical support from administrators as essential for web-based learning, distributed education, virtual training, and lifelong learning. Shah Mohammadi et al. (٢٠١٩) demonstrated that technical support tools distinguish modern education from traditional approaches. Ultimately, these five strategies can significantly improve the quality and effectiveness of distance education during the implementation stage.

The findings also identified five strategies to enhance the evaluation stage of distance education: continuous assessment, constructive feedback, the use of online assessment tools, results analysis, and feedback sessions. These findings are consistent with previous studies by Dorrtaj, Zarei-Zavarki and Aliabadi (٢٠١٧), and Abusnina and Zairi (٢٠١٠). Continuous assessment allows instructors to monitor teachers' progress throughout the course. Rather than focusing solely on final outcomes, this approach emphasises the learning process and helps instructors identify strengths and

weaknesses, enabling timely adjustments to teaching methods. Naveh-Ebrahim and Majidi (٢٠١٤) emphasised the need for ongoing evaluation and review in distance education. Astaraki (٢٠٢٠) considered learning assessment a core component of distance education, while Dorrtaj et al. (٢٠١٧) viewed continuous assessment as essential for optimising learning. Providing constructive feedback is a powerful tool in the learning process. Feedback should clearly identify strengths and weaknesses and offer actionable suggestions for improvement. It can boost teachers' motivation and confidence, guiding them along their learning journey. Samiei Zafarghandi (٢٠١٣) identified constructive feedback as a key element in staff distance education, and Naveh-Ebrahim and Majidi (٢٠١٤) also stressed its importance. Online assessment tools—such as interactive quizzes and surveys—enable instructors to quickly and easily evaluate teachers' progress. These tools help collect accurate and up-to-date data, streamlining the evaluation process. Shahcheraghi et al. (٢٠٢٢) emphasised the necessity of using assessment tools in distance education, and Kubanbek (٢٠٢٣) advocated for online assessment tools in this context. Results analysis helps instructors identify learning patterns and assess overall class performance. This analysis supports informed decision-making regarding curriculum adjustments and teaching strategies, ultimately improving instructional quality. Ebrahimzadeh (٢٠٠٨) and Shah Mohammadi et al. (٢٠١٩) both highlighted the importance of analysing results to evaluate learning outcomes.

Feedback sessions with instructors and teachers provide valuable opportunities to exchange ideas and reflect on educational experiences. These sessions help to identify challenges and opportunities for improvement,

thereby fostering a collaborative and interactive learning environment. Samiei Zafarghandi (۲۰۱۳) and Noh-Ebrahim and Majidi (۲۰۱۴) emphasised the importance of constructive feedback and feedback sessions in distance education. Collectively, these five strategies can enhance the quality and effectiveness of evaluation in distance education. This approach not only assists instructors in improving their teaching practices but also empowers teachers to develop their skills within a dynamic and supportive learning environment. Based on these findings, the following recommendations are proposed:

- Instructors should regularly hold feedback sessions with teachers and colleagues to identify challenges and opportunities for improving distance learning.
- Instructors should familiarise themselves with new educational tools and integrate them into their teaching practices.
- Online platforms should be utilised for conducting assessments and surveys.
- Educational institutions should establish dedicated technical support teams to assist teachers.

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