

The Development of a Training Curriculum to Enhance Knowledge and Understanding of COVID-19 and the New Normal Learning Management for Student Teachers

Chakkaphan Prasomsup

Master's degree in Education Program in Curriculum Development and Instructional Innovation, Faculty of Technical Education, Rajamangala University of Technology Thanyaburi, Pathum Thani, 12110, Thailand
Chakkaphan_p@mail.rmutt.ac.th

Rossarin Jermtaisong*

Faculty of Technical Education, Rajamangala University of Technology Thanyaburi, Pathum Thani, 12110, Thailand
Rossarin_j@rmutt.ac.th

Pornpirom Lhongsap

Faculty of Technical Education, Rajamangala University of Technology Thanyaburi, Pathum Thani, 12110, Thailand
Pornpirom_l@rmutt.ac.th

Abstract

The objectives of this research were to: 1) develop a training course to enhance knowledge and understanding of COVID-19 and the management of education in the new normal era for student teachers, 2) study the effectiveness of the training course; 3) compare the knowledge and understanding of student teachers before and after the training; and 4) study the satisfaction of student teachers towards the training course. The research sample group consisted of 17 third-year student teachers who were studying in the Bachelor of Education program at Rajamangala University of Technology Thanyaburi. The sample group was selected using a multi-stage random sampling method. The research tools used were: 1) a training course curriculum, 2) a knowledge and understanding assessment questionnaire, and 3) a satisfaction survey questionnaire. The statistical analysis used to analyze the data included mean, standard deviation, E1/E2 efficiency ratio calculation, and t-test for dependent samples. The research findings were as follows: 1) the training course effectively enhanced knowledge and understanding of COVID-19 and the management of education in the new normal era for student teachers, 2) the training course had an efficiency ratio (E1/E2) of 83.82/80.98, 3) the knowledge and understanding of student teachers significantly improved after the training, with statistical significance at the 0.05 level, and 4) student teachers' satisfaction with the training course was high.

Keywords: Training curriculum, Knowledge and understanding, Satisfaction.

Introduction

The 21st-century world has undergone rapid, unpredictable, and unforeseen changes that challenge sustainability. These transformations have prompted a societal shift known as the VUCA World or the 'New Normal,' characterized by four aspects. Firstly, volatility—where the world and its environments undergo unpredictable changes, making forecasts difficult. Secondly, uncertainty—reflecting a world rife with unpredictability, making decision-making challenging. Thirdly, complexity—signifying the intricate and tangled nature, making causality and comprehension difficult. Lastly, ambiguity—pertaining to situations lacking clarity (Jaitip and Chienwattanasook, 2018). These circumstances have led Thailand to confront significant changes and contend with pressures arising from highly volatile external and internal circumstances. These arise from leaps in technology, posing challenges in the country's development across dimensions like security, economy, society, and the environment. As a result, given the interconnectedness of all development dimensions, the nation must adopt comprehensive, well-integrated, and inclusive development strategies. Thailand requires high-quality human capital with the most recent skills needed to cope with the rapidly changing environment. This will help all Thais adjust swiftly and live high-quality lives with stable job and incomes. This is particularly important when it comes to education, which is the main engine propelling the country ahead. (Office of the National Economic and Social Development Council. (2018).

Education development to cope with the challenges and changes expected to occur within the framework of learning in the 21st century aims to instill characteristics in learners that are essential for the 21st century. Students are expected to utilize knowledge in core subjects to integrate experiences with three crucial skills for thriving in the 21st century: learning and innovation skills, information, and communication technology (ICT) skills, and life and career skills (Partnership for 21st Century Skills, 2010). People in the 21st century need to be individuals who are ready to learn and work as knowledge workers (Panich, 2012).

In driving the development of quality education, teachers play a crucial role as the quality of learners depends on the quality of educators. Developing and producing teachers, especially new generations of teaching students,

requires the cultivation of competencies to adapt rapidly to changes (McKinsey, 2007). Therefore, adaptability and flexibility become particularly vital competencies for teaching students (Nukew et al., 2020). Considering the ongoing global health crisis caused by the COVID-19 pandemic, the World Health Organization (WHO) has designated it as a widespread disease that has affected numerous countries worldwide. The rapid transmission and extensive reach of the virus have created a state of emergency, leading to profound implications for educational management not only in Thailand but also across the globe. The repercussions of this crisis have had both direct and indirect effects on the educational sector, necessitating immediate action and adaptation.

Office of the Basic Education Commission, The Ministry of Education. (2020) has outlined guidelines for managing teaching and learning during the COVID-19 crisis at all levels and types of education institutions as follows: 1) On Site refers to the learning and teaching activities that focus on organizing learning experiences in schools or classrooms as the main approach. Teachers can integrate other teaching and learning formats into on-site learning, such as learning through television (On Air) or learning through the Internet (Online). 2) On Air refers to remote learning through digital and satellite television systems to provide students access to learning from their homes. 3) Online refers to the method of studying through the Internet, where students can choose to study according to their interests. Teachers may also assign learning content, allowing students to access the material independently from anywhere at any time.

Due to changes in teaching management caused by the spread of the coronavirus disease 2019 (COVID-19), teaching students must be prepared for the transformation in teaching methods in the 'New Normal,' a new way of life that differs from the past. This new normalcy involves adopting unfamiliar standards and practices that people in society were not accustomed to and couldn't predict in advance, necessitating a shift to new standards unfamiliar in this new way of life (Mathuros, 2021). Therefore, stakeholders, especially teaching students who will be the new generation of educators, need knowledge, skills, and an attitude regarding COVID-19 to integrate and apply it in the management of teaching in this new normalcy.

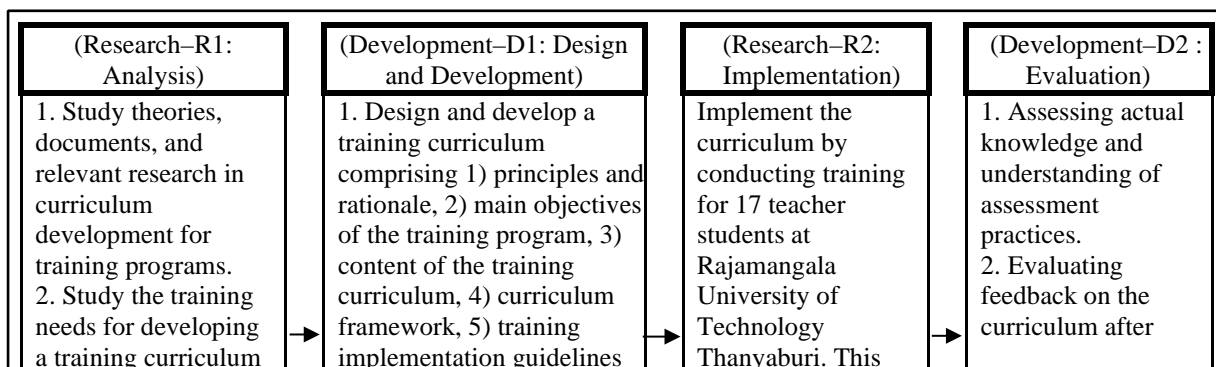
The development of training curricula to enhance knowledge and understanding of COVID-19 and the organization of learning in the new normal for teaching students is a preparation to equip them with knowledge, skills, and an attitude to adapt constantly to ever-changing situations. This readiness allows them to apply their knowledge to enhance teaching practices for the benefit of future learners. As mentioned by Getmaro (2012), the development of training curricula leads to knowledge, understanding, and expertise in specific areas, resulting in behavioral changes aligned with the training objectives. Especially in today's rapidly advancing technological landscape, continuous learning and staying updated are crucial. As Bangmo (2013) stated, a lack of forward-thinking leads organizations to fall behind. Hence, in this era of rapid changes in knowledge and various aspects, the development of training curricula becomes immensely significant and beneficial. Consequently, researchers are interested in developing training curricula to enhance knowledge and understanding of COVID-19 and the management of learning in the new normal for student teachers.

Research Objectives

- 1) To develop a training course to enhance knowledge and understanding of COVID-19 and the organization of learning in the new normal era for student teachers.
- 2) To study the effectiveness of the training course designed to enhance knowledge and understanding of COVID-19 and the organization of learning in the new normal era for student teachers.
- 3) To compare the knowledge and understanding of COVID-19 and the organization of learning in the new normal era for student teachers before and after training with the designed training course.
- 4) To investigate the satisfaction of student teachers with the training course aimed at enhancing knowledge and understanding of COVID-19 and the organization of learning in the new normalcy.

Research Framework

Conceptual framework for the research can be summarized as illustrated in Figure 1.



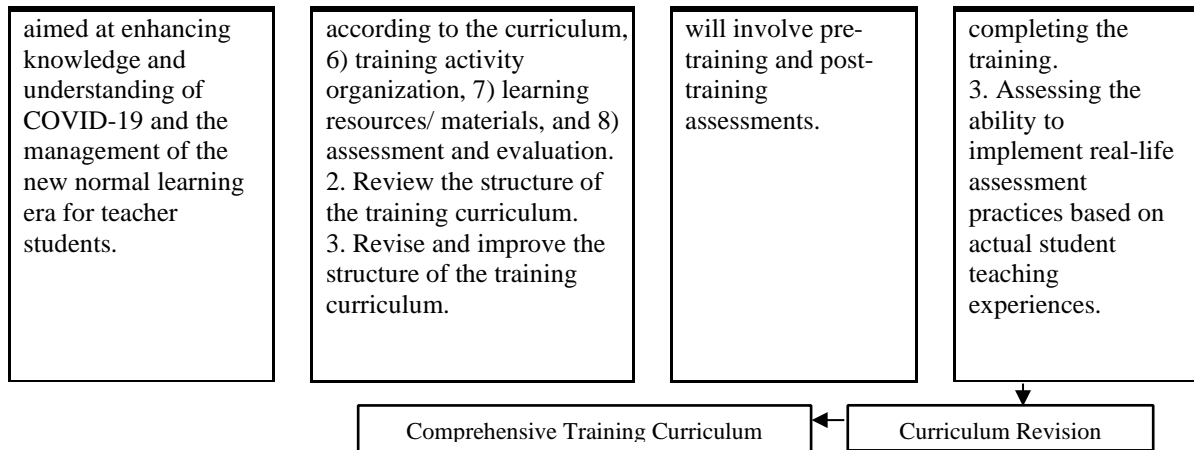


Figure 1 Research Framework

Methodologys

This research was research and development (R&D) consists of four research steps, as follows: 1) Study and analysis of basic data (Research–R1: Analysis), 2) Design and development of training curriculum (Development–D1: Design and Development), 3) Implementation of the training curriculum (Research–R2: Implementation), and 4) Evaluation and effectiveness assessment of the training curriculum (Development–D2: Evaluation). The details are as follows:

1. Research–R1: Analysis

This stage involves studying fundamental data to gather information and understand the problems related to COVID-19. It aims to analyze essential data necessary for the training curriculum development and assess the situation and training needs regarding COVID-19 and the new normal learning management for teacher students. The process includes two steps:

Step 1: Reviewing related documents and research works concerning teacher development standards, curriculum development, research, and pandemic teaching management. This aims to analyze and synthesize information to create a framework for the training curriculum development through content analysis.

Step 2 involved studying the conditions and training needs regarding COVID-19 and the new normal learning management for teacher students. This focused on the scope, content, methods, formats, and duration of training. An inquiry survey was conducted to explore the opinions of 322 students majoring in Bachelor of Education at the Rajamangala University of Technology Thanyaburi regarding the COVID-19 situation and the new normal teaching practices. The survey aimed to identify training needs, knowledge, and understanding about COVID-19 and the new normal learning management for teacher students. The survey, conducted as a checklist, had an index of conformity with a value greater than or equal to .50. The analysis revealed that the conformity index was between 0.8 to 1, with a reliability value of 0.97. Subsequently, this data was collected and compiled with a sample group of 250 third-year students from the Bachelor of Education program at Rajamangala University of Technology Thanyaburi, first semester of the academic year 2565, using a multi-stage random sampling. Data analysis involved mean (X), standard deviation (S.D.), and percentage.

2. Design and Development of Training Curriculum (Development–D1: Design and Development)

This phase aims to design and develop the training curriculum to enhance knowledge and understanding regarding COVID-19 and the new normal learning management for teacher students. It involves reviewing the training curriculum and making necessary improvements and adjustments. The process consists of two steps as follows:

Step 1: Developing a Draft Training Curriculum. The components of the curriculum include the following: Principles and rationale, objectives of the training curriculum, curriculum content, curriculum structure, training implementation guidelines according to the curriculum, training activity arrangements, target groups, schedule (day, time, location), learning materials/equipment, and assessment and evaluation.

Step 2: Reviewing the Suitability of the Training Curriculum and Consistency of its Components. In this step, the aim is to assess the appropriateness of the training curriculum and the coherence of its components. It involves a

detailed examination to ensure that the curriculum aligns with its intended objectives and meets the criteria for effectiveness.

Step 3: Refining the Training Curriculum. Following the review, any identified issues, or areas for improvement in the training curriculum are addressed in this step. The draft curriculum is revised and enhanced according to the recommendations provided by experts. This iterative process is crucial for developing a comprehensive and refined training curriculum ready for implementation in subsequent stages.

3. Implementation of the training curriculum (Research–R2: Implementation)

Once the comprehensive training curriculum is developed, it is time to test its effectiveness. The curriculum is implemented with a sample group using a pre-experimental design to evaluate its efficiency. The objectives of this phase are to experiment with the developed training curriculum and assess its effectiveness.

The research methodology employs a pre-experimental design known as the "One Group Pretest-Posttest Design" (Kerlinger, 1986, p.295). The population consists of third-year student teachers across seven specializations in the Bachelor of Education program at Rajamangala University of Technology Thanyaburi, totaling 322 students. For this research, a sample group of 17 student teachers from the Digital Technology for Education program, randomly selected using a multi-stage random sampling method, will undergo the experimental phase in the first semester of the academic year 2022.

The research tools include: 1) a training curriculum aimed at enhancing knowledge and understanding of COVID-19 and the management of the new normal learning for student teachers, and 2) a knowledge and understanding test regarding COVID-19 and the management of new normal learning. The test has difficulty levels ranging from 0.40 to 0.80, with a discriminatory power of 0.70 to 0.79, satisfaction assessment questionnaire for the training curriculum on COVID-19 and the management of new normal learning. The satisfaction assessment questionnaire utilizes a Likert Scale, with a conformity index of 0.80 - 1. This stage will provide valuable insights into the practical application and effectiveness of the developed curriculum.

4. Evaluation and effectiveness assessment of the training curriculum (Development–D2: Evaluation)

The evaluation of the experimental use of the training curriculum is conducted with two main objectives: 1) assessment of Effectiveness: to evaluate the effectiveness of the training curriculum in enhancing knowledge and understanding of COVID-19 and the management of the new normal learning for student teachers, 2) the evaluation focuses on two aspects: knowledge and understanding, and the assessment of satisfaction, 3) Curriculum Improvement: to identify areas for improvement and modification of the training curriculum. Procedure:

Step 1: Assessing Effectiveness and Student Satisfaction. This involves assessing the effectiveness of the training curriculum and evaluating student satisfaction. Student teachers from Rajamangala University of Technology Thanyaburi are involved in this assessment.

Step 2: Curriculum Improvement. The second step involves refining the curriculum based on the analysis of gathered data. This refinement encompasses both structural and component aspects of the curriculum to achieve a comprehensive and improved training curriculum.

Data Analysis: Effectiveness Assessment (Step 1): Scores obtained from pre-training and post-training activities are used to calculate the effectiveness ratio ($E1/E2$) (Phommawong, 2002). A criterion for effectiveness, such as 80/80, is applied. **Comparative Analysis (Step 2):** The average scores of knowledges and understanding of student teachers before and after the training are compared using a t-test for dependent samples. **Satisfaction Analysis (Step 3):** Student satisfaction with the training curriculum is analyzed using mean and standard deviation. This systematic evaluation provides valuable insights into the success of the training curriculum and highlights areas for enhancement and further development.

Findings

Results of Data Analysis Presented According to the Research and Development (R&D) Process:

1. Study and analysis of basic data (Research–R1: Analysis)

Results of the Study on the Situation and Training Needs Regarding COVID-19 and New Normal Learning Management for Teacher Students: In total, 322 respondents participated in the questionnaire survey. The majority were male, comprising 116 individuals, accounting for 36%. The Faculty of Fine Arts had the highest representation with 171 individuals, constituting 53.1%, followed by the Thai Fine Arts with 99 individuals,

representing 30.7%. Most students, a total of 255 individuals (79.2%), had never attended training courses to enhance their knowledge and understanding of COVID-19 and the management of new normal learning. However, 194 students (60.2%) expressed the highest interest in participating in such training. Among the training topics, 166 students (51.6%) were most interested in training on the design of teaching management in the new normal era. A majority of 222 students (68.9%) preferred training courses lasting for 12 hours. Additionally, 161 students (50%) found it convenient to attend training on COVID-19 and new normal learning management on Saturdays and Sundays.

2. Design and development of training curriculum (Development–D1: Design and Development)

Development of Training Curriculum to Enhance Knowledge and Understanding of COVID-19 and New Normal Learning Management for Teacher Students. The crucial components of the training curriculum development are as follows: 1) Principles and rationale 2) Objectives of the training curriculum 3) Content of the training curriculum 4) Structure of the training curriculum 5) Implementation guidelines for the curriculum 6) Training activity organization 7) Learning materials/equipment 8) Measurement and evaluation. The training curriculum is highly appropriate, with an average rating of 4.35 (on a scale of 1 to 5, where 5 is the highest) and a standard deviation of 3.07. The Index of Item-Objective Congruence (IOC) is between 0.80-1.00, indicating a high level of alignment.

3. Implementation of the training curriculum (Research–R2: Implementation)

In this step, the researcher conducted a training experiment to enhance knowledge and understanding of COVID-19 and the management of new normal learning for third-year teacher students at Rajamangala University of Technology Thanyaburi. The training involved 17 students and took place from March 23 to 24, 2023, totaling 12 hours. There were four learning management plans used in the experiment.

4. Evaluation and effectiveness assessment of the training curriculum (Development–D2: Evaluation).

4.1 Analysis to determine the effectiveness of the training program by comparing the scores obtained during training activities with the scores after training. The analysis involves calculating the E1/E2 ratio according to the effectiveness criteria of 80/80.

Table 1 The average, standard deviation, and efficiency of the training process (E1) of the training program.

Unit of study	N	Full Score	The Score Obtained			
			$\sum X_2$	\bar{x}	S.D.	Percentage
1	17	5	71	4.17	3.85	83.40
2	17	5	65	3.82	3.97	76.40
3	17	5	74	4.35	2.98	87.00
4	17	5	75	4.41	3.91	88.22
Total		20	285	16.76	3.45	83.82

The effectiveness of the process (E1) is 83.82.

From Table 1, it is found that the average score for knowledge and understanding during learning is 16.76 out of a total of 20 points, which translates to 83.82%. This indicates that the developed training curriculum has an effectiveness of the process (E1) equal to 83.82, exceeding the set criterion of 80.

Table 2 The mean, standard deviation, and effectiveness of the outcomes (E2) of the training program.

N	Full Score	$\sum X_1$	The Score Obtained		
			\bar{x}	S.D.	Percentage
17	30	413	24.29	4.01	80.98

The effectiveness of the process (E1) is 80.98

From Table 2, it is found that the average score for knowledge and understanding in the post-training test is 24.29 out of a full score of 30, which is 80.98%. This indicates that the developed training program is effective in terms of outcomes (E2) with a score of 80.98%, which is higher than the set criterion of 80.

Table 3 The result of determining the effectiveness of the training program according to the 80/80 criterion.

N	The process measurement			Posttest			E1/ E2
	$\sum X_2$	A	E1	$\sum X_2$	B	E2	
17	285	16.76	83.82	413	24.29	24.29	83.82/80.98

From Table 3, it is observed that the average score for knowledge and understanding in the post-training tests for all four lessons is 16.76 out of a full score of 20, which is 83.82%. Additionally, the score from the assessments measuring knowledge and understanding after the training is 24.29 out of a full score of 30, equivalent to 80.98%. Therefore, the developed training program demonstrates effectiveness (E1/E2) with scores of 83.82/80.98, surpassing the set criteria of 80/80.

Table 4 Effectiveness Index (E.I.)

The analysis result	Effectiveness Index (E.I.) 0.6560	Percentage of Effectiveness Index 65.60
Interpreting the results	After training using the training curriculum, there was an increase in scores by percentage	
		65.60

From Table 4, it is found that the Effectiveness Index (E.I.) is 0.6560, which is 65.60%. In summary, after learning with the training program, the score increased by 65.60%.

4.2 Comparison of the average scores of knowledges and understanding of teacher students at Rajamangala University of Technology Thanyaburi before and after training with the training program, using the dependent samples t-test.

Table 5 The average scores before and after training on knowledge and understanding of COVID-19 and the new normal teaching management.

Testing	N	\bar{x}	S.D.	df	t-test	Sig. (2-tailed)
Pre-test	17	13.41	2.71	16	-10.88**	0.00
Posttest	17	24.29	4.01			

**p< .05

Table 5 shows the average scores before and after training on knowledge and understanding of COVID-19 and new normal learning management for teacher students. Before training, the average score was 13.41 with a standard deviation (S.D.) of 2.71. After training, the average score increased to 24.29 with a standard deviation (S.D.) of 4.01. When subjected to statistical testing, the post-training average score was significantly higher than the pre-training score at a statistical significance level of .05.

4.3 Results of the study on satisfaction of trainees with the training program to enhance knowledge and understanding of COVID-19 and the new normal teaching management for teacher students were found to be at the highest level (\bar{x} =4.69, S.D. = 0.39). When considering specific aspects, overall satisfaction in every aspect was rated at the highest level. The ratings from highest to lowest were as follows: Location/Duration (\bar{x} = 4.73, S.D. = 0.41), Training (\bar{x} = 4.71, S.D. = 0.31), Knowledge and Understanding (\bar{x} = 4.70, S.D. = 0.58), Instructors (\bar{x} = 4.68, S.D. = 0.37), and Application of Knowledge (\bar{x} = 4.63, S.D. = 0.54).

Discussions

1. Based on the results of developing and ensuring the quality of the training curriculum aimed at enhancing knowledge and understanding of COVID-19 and new normal learning management for teacher students, consultations with thesis advisors, and guidance from expert reviewers to examine the content validity, it was found that the training curriculum is highly suitable. This may stem from the systematic development of the curriculum, which involved studying documents and research related to teacher production and development standards, new normal teaching and learning management, curriculum development, researching and developing the curriculum, as well as studying the conditions and training needs related to COVID-19 and new normal learning management for teacher students. This process led to fundamental theoretical concepts in development, with the training curriculum comprising: 1) Principles and rationale, 2) Objectives of the training curriculum, 3) Content of the training curriculum, 4) Structure of the training curriculum, 5) Implementation guidelines for the curriculum, 6) Training activity organization, 7) Learning materials/equipment, 8) Measurement and evaluation. The curriculum underwent expert review to assess its appropriateness and was revised based on their recommendations, resulting in a high-quality curriculum.

2. Based on the assessment and determination of the effectiveness of the training curriculum aimed at enhancing knowledge and understanding of COVID-19 and new normal learning management, it was found that the

developed training curriculum had an effectiveness ratio (E1/E2) of 83.82/80.98, surpassing the set criterion of 80/80. This could be attributed to the systematic and appropriate development process of the research-generated training curriculum, aligning with the research and development process for the training curriculum. Hence, this curriculum proved to be efficient in enhancing knowledge and understanding of COVID-19 and new normal learning management. This aligns with the research findings of Kaewtong (2020), who studied the development of training curricula to enhance professional experience competencies for Bachelor of Education students majoring in Physical Education at Rajabhat University. The average effectiveness outcome (E1/E2) was found to be 81.52/80.78, surpassing the set criteria.

3. Upon comparing the average scores of knowledges and understanding among teacher students before and after training using the training curriculum, it was evident that the average score after training was significantly higher than before, at a statistical significance level of .05. This improvement might be attributed to the experiential learning within the training curriculum, where the content and assignments aimed to facilitate practical learning. It involved applying various theories and concepts into practical exercises through individual tasks and group activities, supplemented by guidance from instructors.

The analysis of satisfaction among trainees towards the training curriculum aimed at enhancing knowledge and understanding of COVID-19 and new normal learning management for teacher students revealed an overall highest level of satisfaction ($\bar{X} = 4.69$, S.D. = 0.39). Upon examining individual aspects, it was found that all facets of trainee satisfaction were at the highest level. This can be attributed to the curriculum's development process, which involved surveying student requirements before curriculum development and aligning the curriculum design according to these needs, consistent with the study of Wongdaeng et al., (2018) on development of a training curriculum to enhance the 21st century learning skills for teacher student in Rattanakosin Rajabhat University, the research findings showed that the teacher students were better after the training than they were before at the .05 level of significance. Ultimately, the results of the satisfaction survey showed that students were quite satisfied with the training program overall.

Conclusions

In this new era, developing competencies through training curricula is one way to enable educators and teacher students to adapt swiftly to the rapid changes occurring. It prepares them to embrace the transformation in teaching and learning processes in this new normal, which differs significantly from the past. This new normal represents a novel way of life, impacted by various factors that necessitate a shift in societal norms and practices. Learning management in this new era involves designing learning experiences that leverage technology, empowering learners to set their learning goals, methods, and self-assessment. This aims to enable them to effectively apply acquired knowledge for personal development, a departure from traditional learning design approaches.

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