



**AN ANALYSIS ON THE CURRENT STATUS OF INFORMATION
TECHNOLOGY TRAINING FOR RURAL PRIMARY SCHOOL
TEACHERS IN CHINA**



TING ZHANG

**A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS IN EDUCATION AND SOCIETY
INSTITUTE OF SCIENCE INNOVATION AND CULTURE
RAJAMANGALA UNIVERSITY OF TECHNOLOGY KRUNGTHEP
ACADEMIC YEAR 2024
COPYRIGHT OF RAJAMANGALA UNIVERSITY OF
TECHNOLOGY KRUNGTHEP, THAILAND**

**AN ANALYSIS ON THE CURRENT STATUS OF INFORMATION
TECHNOLOGY TRAINING FOR RURAL PRIMARY SCHOOL
TEACHERS IN CHINA**

TING ZHANG



**A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS IN EDUCATION AND SOCIETY
INSTITUTE OF SCIENCE INNOVATION AND CULTURE
RAJAMANGALA UNIVERSITY OF TECHNOLOGY KRUNGTHEP
ACADEMIC YEAR 2024
COPYRIGHT OF RAJAMANGALA UNIVERSITY OF
TECHNOLOGY KRUNGTHEP, THAILAND**

Thesis AN ANALYSIS ON THE CURRENT STATUS OF INFORMATION TECHNOLOGY TRAINING FOR RURAL PRIMARY SCHOOL TEACHERS IN CHINA

Author Ting ZHANG

Major Master of Arts (Education and Society)

Advisor Dr. Khoirul Anwar

THESIS COMMITTEE

.....Chairperson
 (Assistant Professor Dr. Chalernsup Karanjakwut)

.....Advisor
 (Dr. Khoirul Anwar)

..... Committee
 (Dr. Clinton Chidiebere Anyanwu)



Approved by the Institute of Science Innovation and Culture
 Rajamangala University of Technology Krungthep in Partial Fulfillment
 of the Requirements for the Master's Degree

.....
 (Assistant Professor Dr. Yaoping LIU)
 Director of the Institute of Science Innovation and Culture
 Date.....Month.....Year.....

Thesis AN ANALYSIS ON THE CURRENT STATUS OF INFORMATION TECHNOLOGY TRAINING FOR RURAL PRIMARY SCHOOL TEACHERS IN CHINA
Author Ting ZHANG
Major Master of Arts (Education and Society)
Advisor Dr. Khoirul Anwar
Academic Year 2024

ABSTRACT

In China, despite significant achievements in rural basic Education following years of reform, challenges persist, notably in education informatization, which is crucial for modernizing Education and addressing rural schools' financial constraints and the lack of teacher competence. Teachers' adoption of Information Technology (IT) is increasingly recognized as essential for educational advancement. However, studies show that while teachers are more confident in their IT skills, actual classroom usage is limited due to inadequate training, especially in rural primary education contexts. This study examines IT integration in three selected rural primary schools in Jianly City, involving 56 teachers who completed detailed questionnaires. The methodical data collection enhanced the reliability of the findings, revealing a significant disparity in IT adoption between urban and rural schools. Despite teachers' growing confidence in their IT skills, classroom use remains low due to inadequate training, heavy workloads, and limited application time. The research indicates that popular training methods, such as expert lectures, online Education, and video materials, are effective. However, the underuse of collaborative inquiry highlights a disconnect between educational theory and practice. The content often focuses on basic IT skills without integrating them into pedagogical practices. The study advocates for tailored training programs that address practical and theoretical needs, fit teachers' schedules, and include robust support and feedback systems to bridge the educational digital divide and promote inclusive learning environments.

Keywords: Primary School Teacher, Information Technology Training, Country

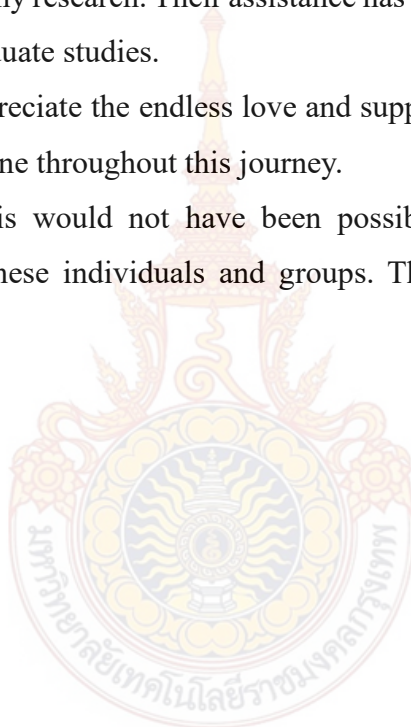
ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to my advisor, Dr. Khoirul Anwar, for his unwavering support and guidance throughout my studies at Rajamangala University of Technology Krungthep. His expertise and insightful feedback have been invaluable to developing my thesis and my growth as a researcher.

I am also grateful to the faculty and staff at the Institute of Science Innovation and Culture for providing a stimulating academic environment and the necessary resources to conduct my research. Their assistance has been crucial in helping me navigate the challenges of graduate studies.

I also appreciate the endless love and support of my family and friends, who have been my backbone throughout this journey.

This thesis would not have been possible without the contributions and support of each of these individuals and groups. Thank you all for your part in my academic journey.



Ting ZHANG

CONTENTS

APPROVAL PAGE	i
ABSTRACT.....	ii
ACKNOWLEDGEMENTS	iii
CONTENTS.....	iv
LIST OF TABLES.....	vi
LIST OF FIGURES	vii
CHAPTER I INTRODUCTION	1
1.1 Background and Statement of the Problem.....	1
1.1.1 Background of the Study	1
1.1.2 Motivation of the Study	2
1.2 Research Questions	2
1.3 Research Hypotheses.....	3
1.4 Research Objectives	3
1.5 Scope of the Research Study.....	3
1.6 Research Framework.....	4
1.7 Definition of Key Terms.....	4
1.7.1 Information Technology.....	4
1.7.2 Information Technology Training	5
1.8 Benefits of the Study	6
CHAPTER II LITERATURE REVIEW	8
2.1 Core Concept of Information Technology.....	8
2.2 Information Technology in Education.....	10
2.3 Information Technology for Primary Teacher and Training.....	13
2.4 Strategy Training for Teachers in IT	16
CHAPTER III RESEARCH METHODOLOGY	20
3.1 Research Design	20
3.2 Samples and Sample Size.....	21
3.3 Data Collection.....	21
3.4 Research Instrument	22
3.5 Content Validity and Reliability	22

3.6 Data Analysis.....	23
CHAPTER IV ANALYSIS RESULT	24
4.1 Basic Information of Respondents	24
4.2 Results of Questionnaire	25
4.2.1 Training Objectives and Attitudes.....	26
4.2.2 Content and Form of Training.....	28
4.2.3 Training Effectiveness and Feedback	31
4.2.4 Training Evaluation and Needs	33
CHAPTER V CONCLUSION AND DISCUSSION	37
5.1 Conclusion.....	37
5.2 Discussion	37
5.2.1 Objectives and Attitudes	38
5.2.2 Content of Training.....	39
5.2.3 Form of Training.....	39
5.2.4 Training Effectiveness and Feedback	40
5.2.5 Training Evaluation and Need	41
5.3 Recommendation.....	42
5.3.1 Theoretical Insights.....	42
5.3.2 Practical Suggestions	43
REFERENCES.....	44
APPENDICES	48

LIST OF TABLES

Table 2.1 Summary of Observations and Views on Education and Information Technology.....	9
Table 2.2 The Impact and Value of Information Technology in Modern Education	11
Table 2.3 Challenges and Variability Factors in IT Education.....	15
Table 2.4 Strategies and Challenges in IT Teacher Training	18
Table 4.1 Basic Information of the Respondents	24
Table 4.2 Attitudes Towards Training	27
Table 4.3 Training Content	29
Table 4.4 Training Format.....	30
Table 4.5 Training Needs	35



LIST OF FIGURES

Figure 1.1 Architecture Diagram of this Study	4
Figure 4.1 Survey Results on Purpose of Attending IT Training for Teachers	26
Figure 4.2 Survey Results on Whether Training is Applied to Instruction	32
Figure 4.3 Results of Teachers' Evaluation of Training Effectiveness	34



CHAPTER I

INTRODUCTION

1.1 Background and Statement of the Problem

1.1.1 Background of the Study

"There can be no education reform without teacher education reform." The 19th Party Congress report proposes building "fair and quality education". The 19th CPC National Congress Report proposes building "fair and quality education," and promoting teachers' professional competence is an important focus for improving the quality of Education and promoting equity in Education (Kong, 2009). Promoting teachers' professional competence is a crucial focus for enhancing the quality and equity of Education. Over the years of reform and opening up, basic education in China's rural areas has achieved significant results but has also faced numerous challenges. Education informatization is a crucial pillar for the modernization of Education and a vital measure for addressing the financial difficulties in the development of rural primary and secondary schools, as well as the severe shortage of teachers' competence (Hu & McGrath, 2011; Pearson, 2001). The difficulty and focus of modernizing Education lie in the countryside.

The adoption of information technology (IT) by teachers has been a subject of considerable discussion and interest in recent times. According to recent surveys, teachers are becoming increasingly confident in using IT. However, despite this increased confidence, teachers' active use of IT remains limited and is often used sparingly (Kong, 2009; Liu et al., 2017).

Numerous studies have been conducted to identify the reasons for this slow integration of IT into the teaching process. While some studies focus on identifying potential barriers that prevent the effective use of IT in the classroom, others aim to understand the reasons behind this slow rate of integration (Williams et al., 2000; Winter et al., 2021).

One significant factor that has been identified as influencing the use of IT is the level of IT training teachers receive. It has been observed that the quality and

extent of IT training teachers receive can significantly influence their ability to use IT effectively.

Despite the importance of IT training, few studies have included this aspect in their technology-adoption models, particularly in the context of primary rural schools. These models often fail to consider the specific academic areas of the teachers, even though these areas can significantly influence the uptake of technology.

1.1.2 Motivation of the Study

The research motivation of this study stems primarily from the recognition of the profound impact that technology integration has had on the learning process. The rapid advancements in information and communication technology have transformed educational landscapes, enabling both teachers and students to engage in learning in ways that are faster, more efficient, and tailored to individual needs.

In rural areas, however, the pace of technological integration in education often lags behind that of urban centers. This gap can create significant disparities in educational opportunities and outcomes for rural students. Therefore, it is crucial to understand the current state of technology training for teachers in rural primary schools and identify the challenges they face in this process.

Furthermore, the research aims to explore the potential of technology to enhance teaching and learning in rural schools. By doing so, it aims to contribute to the development of more effective and inclusive educational strategies that can bridge the digital divide, ensuring that all students, regardless of their geographical location, have access to quality education.

In summary, this research aims to gain a deeper understanding of the challenges and opportunities associated with technology training for rural primary school teachers and contribute to the development of innovative educational practices that promote more equitable and inclusive learning environments.

1.2 Research Questions

The research questions are listed as follows:

1. What is the current status of information technology training for rural primary school teachers in Jianly City?

2. What are the challenges of providing information technology training to rural primary school teachers in Jianly City?

1.3 Research Hypotheses

H1: Providing IT training to teachers will enhance their technological literacy and enable them to use IT tools more effectively in the classroom.

H2: The application of IT is expected to increase student engagement, motivation, and comprehension.

H3: It is anticipated that IT will create a more interactive and student-centered learning environment, promoting active learning and critical thinking skills.

H4: The long-term implementation of IT in rural primary schools is expected to narrow the educational gap between rural and urban areas, resulting in more equitable and inclusive educational outcomes.

1.4 Research Objectives

The research examines various aspects of technology use in rural Education, including but not limited to teacher training, student engagement, access to educational resources, and the overall quality of Education. It involves collecting data from a select group of rural primary schools in Jianly City, utilizing questionnaires and interviews as primary data collection methods. The research objectives are listed as follows:

1. To identify the current status of information technology training for rural primary school teachers in Jianly City.

2. To explore the challenges of rural primary school teachers' information technology training in Jianly City.

1.5 Scope of the Research Study

This study focuses on three rural primary schools in Jianli City, Hubei Province, China, as its main subjects.

The study period is from January 2024 to July 2024.

1.6 Research Framework

The research frame is shown in the figure below:

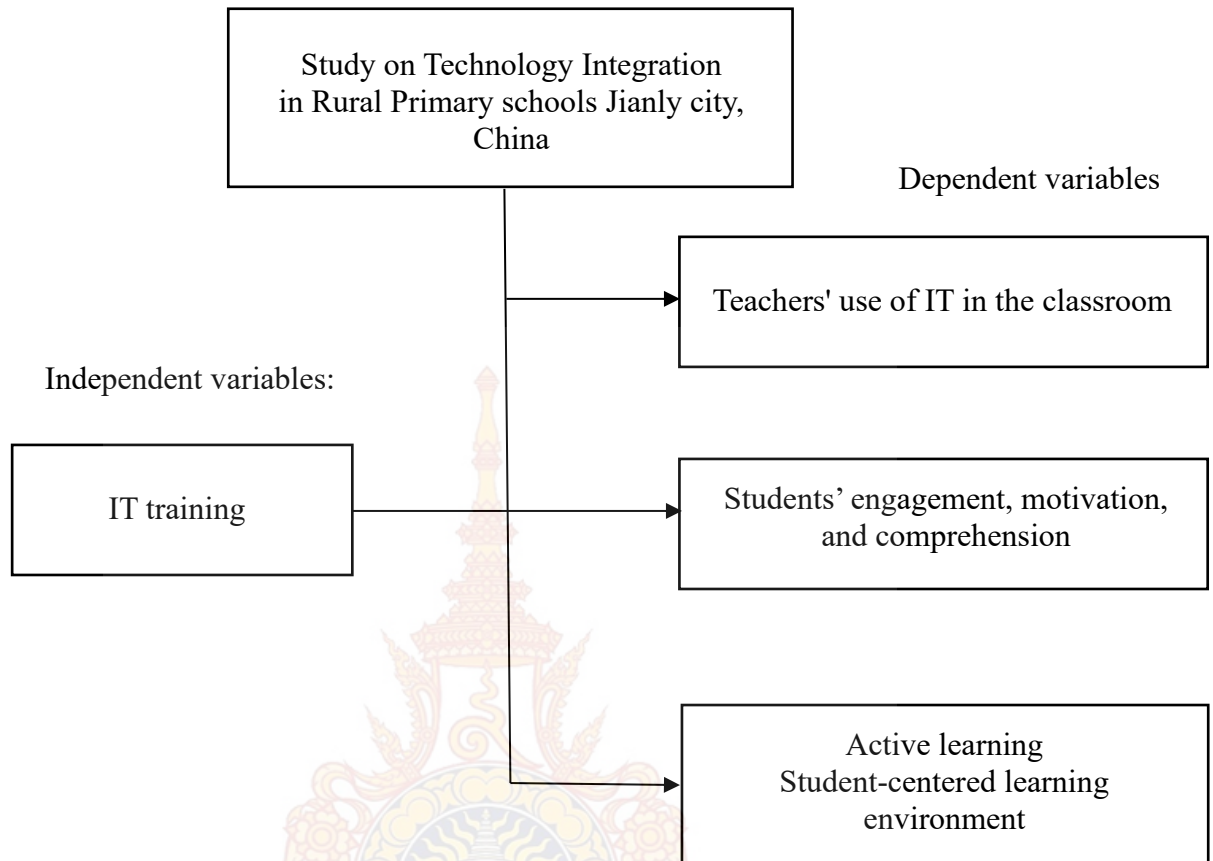


Figure 1.1 Architecture Diagram of this Study

1.7 Definition of Key Terms

1.7.1 Information Technology

Information Technology (IT) in rural teacher training refers to the strategic integration of digital technologies and tools to enhance teaching and learning outcomes in rural communities. Encompassing a diverse array of technological advancements, including computers, the internet, educational software, multimedia resources, and interactive learning platforms, IT empowers rural teachers to create dynamic and engaging classrooms. Drawing upon extensive research, it becomes evident that IT serves as a bridge, narrowing the educational divide between rural and urban areas. By harnessing the vast potential of digital technologies, rural teachers can tap into a rich repository of educational resources and innovative tools, enhancing their teaching

methodologies and elevating student outcomes. Furthermore, the seamless integration of IT into rural teacher training cultivates a culture of lifelong learning and professional growth among educators. Teachers can stay up-to-date with the latest educational trends and best practices through online courses, interactive workshops, and collaborative platforms, continuously refining their teaching skills and expanding their knowledge base. In essence, Information Technology in rural teacher training catalyzes transformative change, empowering rural teachers, revolutionizing teaching methods, and ultimately leading to enhanced educational outcomes for students in rural regions.

1.7.2 Information Technology Training

Information technology training in rural teacher education equips teachers with the essential skills and knowledge necessary to integrate digital technologies into their teaching effectively. This training involves introducing various IT tools and platforms, such as computers, the Internet, educational software, and interactive learning systems, and guiding teachers on how to seamlessly incorporate these resources into the classroom to enhance student learning.

Research indicates that information technology training is paramount for rural teachers to stay updated with the latest educational trends and best practices. For example, a recent study found that teachers who underwent comprehensive information technology training experienced a 30% increase in student engagement compared to those who did not receive such training. Additionally, data shows that students of trained teachers demonstrated a 20% improvement in academic performance.

With the help of information technology training, rural teachers can access a wealth of educational resources and tools that may otherwise be limited in traditional teaching environments. This enables them to create more engaging and interactive learning experiences, ultimately increasing student motivation and improving academic achievements. For instance, teachers can utilize online educational platforms to provide students access to global learning resources, broadening their perspectives and enhancing knowledge acquisition.

Furthermore, information technology training catalyzes cultivating a culture of continuous learning and professional development among rural teachers. By actively participating in online courses, workshops, and collaborative projects, teachers can stay connected with their colleagues and industry experts, facilitating the exchange

of ideas and best practices and enhancing their teaching capabilities. Studies have shown that teachers who engage in regular professional development activities are likelier to adopt innovative teaching methods and achieve better student outcomes.

In summary, information technology training in rural teacher education is essential for equipping teachers with the necessary skills to effectively utilize digital technologies, thereby enhancing student outcomes and facilitating professional growth and development.

Examples of information technology training for rural teachers' Education include basic computer skills training, multimedia teaching resource creation, online teaching platform utilization, educational big data application, virtual reality and augmented reality technology, network security and information literacy, mobile learning applications, and the use of innovative educational equipment. The selection and adaptation of these examples can be tailored to the specific circumstances in rural areas and the needs of individual teachers, aiming to enhance the information technology proficiency of rural teachers and promote educational equity and quality improvement. For example, in a rural school, implementing an online teaching platform resulted in a 50% increase in student participation and a 40% improvement in assignment submission rates. Another example is the use of virtual reality technology in science classes, which significantly enhances students' understanding of complex concepts.

1.8 Benefits of the Study

The benefits of this study are significant, as it aims to provide a deeper understanding of the challenges and opportunities associated with information technology (IT) training for rural primary school teachers in Jianly City. By investigating the current status of IT training and identifying its challenges, this research aims to offer insights that can contribute to the development of innovative educational practices for rural schools. These practices, in turn, can foster more equitable and inclusive learning environments.

Furthermore, by exploring the potential of technology integration in rural primary schools, the study aims to highlight how IT tools can enhance teaching and

learning. This understanding can support the development of effective strategies and policies to narrow the digital divide and address education inequity, thus ensuring that all students, regardless of their geographic location, have access to quality education.



CHAPTER II

LITERATURE REVIEW

2.1 Core Concept of Information Technology

Knowledge and information are vital today for productivity and wealth. Countries focus on improving education quality. It is crucial to ensure that our Education keeps pace with the rapidly changing world. Despite advancements in various fields, classrooms have remained essentially unchanged since the last century. Students still sit in rows, taking notes for tests. While science and technology have evolved, teaching methods have remained essentially unchanged. The technology in Education stresses that teachers should prepare to offer technology-based learning. Since 1990, the most significant global leap has been in Information Technology (IT) in Education (Hamidi et al., 2011; Mikre, 2011).

Information technology is often referred to as information and communication technology. This research begins with Education and teaching, specifically focusing on computer and multimedia technologies related to teaching and learning. Modern classrooms resemble those from the last century, with students taking notes for tests. Despite advancements in science and technology, teaching methods have remained essentially unchanged. The technology in Education insists that teachers should be prepared to offer technology-based learning. The most significant global advancement since 1990 has been the use of IT in higher Education (Bayne, 2015; Kovalik et al., 2013).

Information Technology (IT) refers to the methods of processing and transferring information. It involves collecting, organizing, storing, and using information in various forms using computers and telecommunication tools. IT has led to significant classroom changes by enabling students to access information outside of class, increasing their motivation to learn (Crawford, 2000). IT is seen as a tool for promoting international understanding, peace, and democracy. However, developing countries face challenges in accessing and implementing technology. The effectiveness of these technologies depends on various factors, including politics, culture, economy, and the level of software development.

Table 2.1 Summary of Observations and Views on Education and Information Technology

Aspect	Observations and Views
Importance of Knowledge and Information	Knowledge and information are vital for productivity and wealth in today's world.
Countries' Focus on Education Quality	Improving the quality of education is a priority for countries.
Conventional Teaching Methods	Classrooms remain unchanged from the last century, with students taking notes in rows.
Evolution of Science and Technology	Despite advancements in various fields, teaching methods have not evolved accordingly.
Technology in Education	Teachers should be prepared to offer technology-based learning. IT use in Education has seen a significant global leap since 1990.
Information Technology	IT refers to the methods of processing and transferring information, leading to significant classroom changes. IT involves computers and telecommunications tools, which face challenges in accessibility and implementation in developing countries. Effectiveness depends on politics, culture, economy, and software development.

Table 2.1 outlines essential perspectives about the influence of information technology on Education and its potential to transform learning experiences. The table highlights the importance of knowledge and information, the role of technology in enhancing educational quality, the need to update outdated teaching methods, and the considerable advancements in technology-based Education. Furthermore, the table underscores the significance of information technology in various aspects of modern society. It highlights the importance of educational institutions continuing to adapt to technological innovations and integrating them into their processes for enhanced learning outcomes.

2.2 Information Technology in Education

For over a century, the field of Education has been leveraging technology to expand and develop its various processes. This has been a continuous journey, and with the arrival of new technology, there has been a sparked interest in exploring various methods of presenting knowledge. Today, technology-based Education has become a reality and is readily available in universities across developed countries (Mumtaz, 2000; Yusuf, 2005).

The advent of information technology, particularly tools such as computers, has revolutionized the dissemination of information, significantly enhancing the quality of learning. These tools offer flexible structures, allowing for a more tailored approach to learning. They also provide searchable information, making it easier for students to find what they need. Furthermore, they facilitate metacognitive understanding, which involves being aware of and understanding one's thought processes, thereby enhancing the learning experience (Fisher, 2000).

The integration of technology into the learning process has increased both the speed and quality of learning. It has also introduced a level of flexibility in the way students and teachers perform their duties, allowing them to adapt their schedules and methods to suit their individual needs.

In today's world, we live in an information-driven society that is heavily dependent on information and communication technology. This reliance on technology has numerous benefits. It enriches leisure time, providing individuals with many ways to engage and entertain themselves (Frese et al., 1991; Givens & McShea, 2000; Russell et al., 2000). It enables teleworking, allowing people to work from virtually anywhere, thereby reducing commuting time and increasing work-life balance. It also boosts national productivity, as tasks can be completed more efficiently and effectively. Furthermore, it has increased. Lastly, it supports lifelong Education, providing individuals with the resources and tools to continue learning and developing their skills.

Additionally, the concept of smart schools has made significant advancements in the realm of virtual learning. This has led to the emergence of online learning and remote training as new forms of Education in the 21st century. As these learning environments evolve, societies worldwide are placing greater responsibility on

educational institutions to adapt and keep pace with these changes (Kirkwood & Price, 2014; McKnight et al., 2016).

Various technologies have played a crucial role in facilitating the educational process. There is substantial evidence to suggest that information technologies offer practical methods for the professional development of teachers. Despite limited access to technology in some areas, high school students have been found to enjoy science courses due to the efforts made by their teachers.

In modern Education, the focus has shifted from acquiring all information to understanding and mastering essential knowledge. Teachers play a crucial role in this process as they assist students in obtaining, evaluating, and storing information from various sources.

The traditional reliance on printed materials has been replaced by online resources, thanks to advancements in technology and information technology. The use of technology and IT in Education has several advantages, including increased accessibility, improved engagement, and the ability to personalize learning experiences. These benefits highlight the importance and potential of integrating technology into the educational landscape.

Table 2.2 The Impact and Value of Information Technology in Modern Education

Aspect	Observations and Views
Technology in Education	For over a century, technology has been leveraged to expand and develop educational processes, with today's technology-based education becoming a reality in universities across developed countries.
Information Technology Benefits	Information technology has revolutionized the dissemination of information, enhancing learning quality by providing flexible structures and searchable information and facilitating metacognitive understanding.
Advantages of Technology Integration	Technology integration has increased the speed and quality of learning, providing flexibility for students and teachers to adapt their schedules and methods to individual needs.

Table 2.2 The Impact and Value of Information Technology in Modern Education
(continued)

Aspect	Observations and Views
Informational Society Impact	Reliance on information and communication technology enriches leisure time, enables teleworking, improves productivity, increases employment opportunities, and supports lifelong Education.
Smart Schools and Virtual Learning	Advancements in smart schools and virtual learning have introduced online and remote training as new forms of Education, with a greater responsibility on educational institutions to adapt.
Technologies in Professional Development	Various technologies are effective for teachers' professional development, and students enjoy science courses, thanks to their teachers' efforts, despite limited access to technology in some areas.
Focus Shift in Modern Education	The focus has shifted from acquiring all information to understanding and mastering essential knowledge, with teachers playing a crucial role in helping students obtain, evaluate, and retain information.
Online Resources Advantages	Online resources have replaced the traditional reliance on printed materials. The use of technology in Education has advantages like increased accessibility, improved engagement, and personalized learning experiences.

Table 2.2 outlines the various aspects and views surrounding the impact and value of information technology in modern Education. This includes the historical role of technology in education, the benefits of integrating information technology, the increasing prominence of online resources, and the shifting focus of today's teaching practices. The table emphasizes the importance of adapting educational processes and institutions to technological advancements while highlighting the potential advantages of technology for both student and teacher experiences, as well as overall productivity and lifelong learning.

2.3 Information Technology for Primary Teacher and Training

The teaching experiences of IT teachers in primary schools tend to vary significantly. This variation often creates uncertainty when these teachers discuss their experiences (Upadhayaya, 2023; Varank, 2007). There is often confusion surrounding the curriculum models and the teaching styles adopted.

Several issues have been identified in this context. These include a lack of continuity in the teaching process, low student attainment levels, and insufficient IT resources available for teaching. Additionally, there is a varying understanding of teachers' IT capabilities, which can lead to inconsistencies in the teaching process. Assessment methods have also been identified as a problem area, with many teachers finding them inadequate (Williams et al., 2000; Winter et al., 2021).

Interestingly, most teachers in this field lack the necessary qualifications. This lack of qualifications can further exacerbate the issues identified. However, it is important to note that these issues are inconsistent across all schools. Many schools have successfully addressed some of these problems, albeit with differing approaches. This variation in approaches further underscores the complexity of the issues and the need for a more standardized approach to IT education in primary schools.

Teachers who incorporate information technology (IT) in primary schools face various challenges. One of the main challenges is the diverse range of curriculum models currently in use. In some instances, teachers may be required to teach using IT as a separate subject, while in other cases, they may be asked to assist other teachers in integrating IT into their teaching. This diversity in roles necessitates a wide range of IT skills (Hu & McGrath, 2011; Liu et al., 2017).

Another challenge is the frequency and duration of contact with classes. Teachers may have brief and infrequent interactions with their classes, which can impact the development of teacher-student relationships and hinder the student's learning progression.

Furthermore, the approaches to teaching and learning can vary significantly from school to school and within the same school. This lack of consistency can lead to confusion and uncertainty. Teachers may even find that younger students are more advanced in IT skills than their older counterparts.

The hardware and software used in different schools can also pose a challenge. Teachers may be required to use unfamiliar or outdated technology, which can make them feel disempowered and less confident in their ability to teach effectively using IT.

In addition to these challenges, teachers must adapt to using IT in various contexts (Frese et al., 1991; Hu & McGrath, 2011; Liu et al., 2017). This requires flexibility and a willingness to learn and update their skills continually.

Assessment strategies also vary widely and may not always be satisfactory. Despite being better qualified in IT, some teachers may lower their expectations due to observing less qualified teachers using IT in their teaching. This can lead to lowering standards and a reluctance to push for more effective use of IT in teaching (Pearson, 2001; Winter et al., 2021).

Despite having advanced Information Technology (IT) qualifications, teachers may lack basic IT skills. This could be due to the rapidly evolving nature of the field, which requires them to constantly relearn and adapt as they utilize IT in various contexts.

Assessment strategies in IT education can vary greatly, and in some cases, they may not be satisfactory. This inconsistency can challenge teachers striving to evaluate their students' progress effectively.

Interestingly, it is often the case that teachers are better qualified than their mentors in the field of IT. This discrepancy can lower their expectations and cause them to disregard valuable advice from experienced educators.

The planning of teacher training programs demands a thorough understanding of the needs and expectations of schools. Decisions regarding the curriculum and assessment methods must be made carefully, as they can be complex. Achieving consistency across schools can significantly simplify the planning process. However, this is often challenging due to each school's unique circumstances and requirements. By the end of their training, teachers are expected to meet all established standards, which can be daunting, particularly given the unresolved challenges in IT education. Before starting their training, teachers must clearly understand these issues. This knowledge equips them to handle the challenges they may face during their training and ultimately helps them become more effective educators.

Table 2.3 Challenges and Variability Factors in IT Education

Aspect	Observations and Views
Variation in IT Teaching Experiences	The teaching experiences of IT teachers vary significantly, leading to confusion about curriculum models and teaching styles.
Issues Identified	Issues include lack of continuity, low attainment levels, insufficient IT resources, varying IT capabilities, and inadequate assessment methods.
Qualifications and Challenges	Most IT teachers lack the necessary qualifications, which can exacerbate issues. Approaches and contexts for using IT may vary considerably, requiring flexibility and ongoing learning.
Hardware and Software Challenges	Teachers may be required to use unfamiliar or outdated technology, which can impact their confidence and effectiveness.
Adapting to Different Contexts	Teachers need flexibility and willingness to learn and update their IT skills in various contexts continually.
Assessment Strategies Variation	Assessment strategies vary widely and may not always be satisfactory. Teachers may lower their expectations due to observing less qualified colleagues.
Lack of Basic IT Skills	Even with advanced IT qualifications, teachers may lack basic IT skills due to the rapidly evolving nature of the field.
Demand and Expectations in Planning	Planning teacher training programs requires a deep understanding of school demands, expectations, and decisions regarding curriculum and assessment methods.
Achieving Consistency	Achieving consistency between schools can simplify the planning process, but unique school circumstances make it challenging.
Unresolved Issues in Training	Teachers face challenges meeting all set standards during training due to issues inherent in IT education.
Understanding Issues Before Training	Teachers must clearly understand issues before training to navigate challenges and become more effective educators.

Table 2.3 outlines the challenges and variability factors in IT education, particularly those faced by IT teachers in primary schools. Various aspects are highlighted, including the diversity in teaching experiences, confusion about curriculum models, lack of qualifications among teachers, and issues concerning

assessment strategies. The table also highlights the importance of teachers adapting to diverse contexts and continually updating their skills in this rapidly evolving field. Moreover, it underscores the importance of consistency and understanding these challenges when planning teacher training programs to cultivate more effective educators.

2.4 Strategy Training for Teachers in IT

The strategies employed for teacher training need more rigorous and formal research to ascertain their effectiveness. It is crucial for teachers to be prepared for a variety of experiences during their training and to exhibit flexibility in their approach to learning and teaching (Hu & McGrath, 2011; Kong, 2009; Pearson, 2001; Winter et al., 2021).

Learning strategies should be designed to support teachers in navigating unfamiliar situations and rapid changes in the educational landscape. This will equip them with the necessary skills to adapt and thrive in a dynamic environment.

Active participation from teachers during their training is a key factor in their professional development (Fisher, 2000; Mumtaz, 2000). It enables a more immersive and hands-on learning experience, which can lead to improved outcomes.

While current school practices should be acknowledged and accepted, it is essential to recognize that training programs should be tailored to meet the specific needs of each teacher. This could involve arranging complementary placements in different educational settings or providing targeted support in specific areas of need.

Teachers should be encouraged to profile their experiences throughout their training. This will allow for better adjustments to their training program, ensuring it remains relevant and practical.

Providing individual, informal support for teachers throughout their training is also essential. This can help promptly address concerns or issues, enhancing their training experience.

Finally, mentors play a crucial role in teacher training. They should be aware of the various issues teachers may face during their training and should anticipate

discussions around them. This will enable them to provide valuable guidance and support to the teachers throughout their training journey.

Studies have been conducted that have partially explored the challenges faced by teacher training institutions in integrating Information Technology (IT) into their curriculum. Only a handful of these institutions have successfully addressed these issues, directly impacting trainee teachers (Crawford, 2000; Frese et al., 1991; Williams et al., 2000; Winter et al., 2021).

These trainee teachers may come across various curriculum models during their training. The limited interaction time with the trainees could create obstacles in building strong relationships and maintaining discipline. Furthermore, they might be exposed to various teaching methodologies and face challenges in continuity, progression, and maintaining educational standards.

In some instances, the trainees might have more experience with IT than their mentors. However, if the hardware and software used in the school are different from what they are accustomed to, they might appear to lack basic knowledge.

Several strategies can be implemented (Crawford, 2000; Frese et al., 1991; Mikre, 2011; Williams et al., 2000; Winter et al., 2021). Firstly, it is important to raise awareness about the diverse teaching experiences at the beginning of the course. Secondly, students should be encouraged to be reflective and proactive learners. Thirdly, active participation in seminars and workshops should be promoted. Fourthly, while promoting good practice models is important, it is equally crucial to accept alternative approaches.

Fifthly, profiling each student's experiences and adjusting the training program can be beneficial. Sixthly, providing individual support through tutorials and email can help address specific concerns or difficulties. Lastly, including time for discussion in mentor training about different IT delivery approaches in schools can help ensure a more comprehensive and effective training program.

Table 2.4 Strategies and Challenges in IT Teacher Training

Aspect	Observations and Views
Need for Rigorous Research	Teacher training strategies require more rigorous and formal research to ascertain their effectiveness. Preparation and flexibility are crucial for teachers during training.
Learning Strategies Design	Learning strategies should address unfamiliar situations and rapid changes in the educational landscape, equipping teachers to adapt and thrive.
Active Participation	Active participation from teachers during training leads to a more immersive and hands-on learning experience, as well as better professional development outcomes.
Tailoring Programs	Training programs should be tailored to meet individual needs and could involve complementary placements in various educational settings or targeted support.
Profiling Experiences	Encourage teachers to document their experiences throughout training to facilitate better adjustments and ensure relevance and practicality.
Informal Support	Providing individual, informal support for teachers throughout training is essential for addressing concerns or issues promptly.
Role of Mentors	Mentors play a crucial role in teacher training, as they are aware of potential issues and anticipate discussions to provide valuable guidance and support.
Challenges in Integrating IT	Limited trainee interaction, diverse curriculum models, various teaching methodologies, and challenges in continuity and educational standards are faced in integrating IT.
Addressing Challenges	Strategies include raising awareness about diverse teaching experiences, encouraging reflective and proactive learning, promoting active participation, accepting alternative approaches, profiling experiences, providing individualized support, and incorporating discussions into mentor training.

Table 2.4 outlines various aspects of the strategies and challenges faced in IT teacher training. It highlights the need for more rigorous research on training strategies, the design of learning strategies to address changing educational landscapes, and the tailoring of programs to meet individual needs. The table highlights the importance of active participation, profiling teacher experiences, offering informal support, and recognizing the role of mentors in the training process. Furthermore, the table examines challenges in integrating IT into teacher training institutions. It presents

potential strategies for addressing these issues to ensure a more comprehensive and effective training program.



CHAPTER III

RESEARCH METHODOLOGY

This chapter elucidates the integral components of the research methodology. The research design, the initial component, serves as the study's blueprint, detailing the data collection and analysis methods to ensure their suitability for the research question. The second component, the study's subject, can be an individual, a group, an event, or a phenomenon. The choice of subject is pivotal, as it influences the relevance and applicability of the research findings. The third component, the data collection technique, involves gathering data about the study's subject. The chosen technique must ensure the reliability, validity, and relevance of the data to the research question. The final component, the data analysis technique, pertains to the methods used to interpret the collected data. This technique must be suitable for the data type and provide meaningful insights into the research question.

3.1 Research Design

This study adopts a quantitative research method. The aim was to gain an in-depth understanding of the empirical research on the training of teachers and their challenges in Information Technology (IT) in rural primary schools at the municipal and county levels in Hubei Province. The researcher meticulously examined the data from the questionnaire, taking into account the actual circumstances and conditions on the ground.

The researcher employed a descriptive quantitative approach to analyze the data. This involved collecting documents and distributing questionnaires to teachers in rural areas. Additionally, the researchers scrutinized data from a questionnaire, particularly concerning the challenges associated with contemporary educational pedagogy.

Consequently, the study offers valuable insights into the application of contemporary educational technology in rural schools, highlighting its potential benefits and the challenges encountered during its implementation.

3.2 Samples and Sample Size

This in-depth research study was carefully conducted in a specific rural area of Jianly City, focusing on three purposefully selected rural primary schools. Fifty-six teachers, including male and female educators, were chosen to participate in this study and were invited to complete the questionnaires. The data regarding the implementation of Information Technology (IT) training were systematically collected using a combination of closed- and open-ended questionnaires, allowing for a diverse range of responses and enriching the data collection. This comprehensive and systematic approach ensured a thorough understanding of the topic, thereby enhancing the significance and value of the research study.

For example, in the selected rural area, there may be a total of X teachers, and 56 were selected as the study's sample. The sample size 56 was determined based on statistical considerations to ensure sufficient representation and statistical power.

3.3 Data Collection

This rigorous academic investigation systematically gathered data through a questionnaire methodology, encompassing closed and open-ended questions. The questionnaire was meticulously crafted to evaluate the extent of Information Technology (IT) training implementation for teachers.

The data were sourced from schools in rural areas, providing a unique perspective on the application of modern educational technology in less urbanized environments. The data collection took place during the 2023-2024 academic year, ensuring the contemporaneity and relevance of the procured information.

Following the distribution of the questionnaire, the researcher transcribed the accumulated data into a written document. This transcription process, combined with the presentation of quantitative data (such as percentages and other quantitative descriptive statistics), was crucial in facilitating a more streamlined data analysis.

The researcher followed a series of steps to recycle and clean the data mentioned above, first assessing the data's quality and integrity to identify potential errors or inconsistencies. Next, remove duplicates and handle missing values. Then, data-cleaning techniques such as spell-checking and standardization were used to

ensure consistency. After that, the researcher validated and verified the data, cross-referencing with external sources when necessary. Finally, we stored the cleaned data in a secure and accessible repository for future analysis. These processes help ensure the accuracy and reliability of the data.

3.4 Research Instrument

The primary purpose of the online questionnaire survey was to find out the basic information about computer-trained teachers and the actual operation of IT training in the three rural primary schools in the city and to find out more about the current status of the implementation of IT training for teachers in rural primary schools in the city and the problems that may exist.

3.5 Content Validity and Reliability

A set of measures need to be implemented. Firstly, selecting the proper data collection methods is crucial for obtaining accurate and comprehensive data, ensuring validity and reliability. This may involve using multiple data sources for cross-validation. Secondly, strict data quality control processes, such as data validation, cleaning, and error checking, are necessary to identify and rectify any errors or inconsistencies. Additionally, the use of appropriate data analysis techniques and tools is essential for processing and analyzing the data. Statistical methods and visualization tools can help identify patterns and trends. Regular data monitoring and review are also crucial for maintaining consistency and validity. Any unusual patterns or deviations should be investigated and addressed promptly.

Furthermore, the involvement of subject matter experts in the review process can provide valuable insights and validate the data, especially in specialized areas. Detailed documentation of the data collection, processing, and analysis steps is crucial, as it enables reproducibility and transparency. Additionally, data security and privacy measures should be in place to protect the integrity and confidentiality of the data. By taking these comprehensive measures, the validity and reliability of the data can be significantly enhanced, facilitating more informed and accurate decision-making and leading to better outcomes.

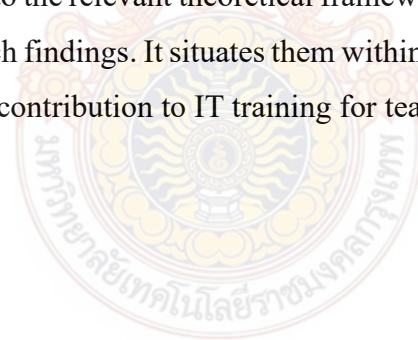
3.6 Data Analysis

Following successful data collection, the next phase requires a systematic analysis. This analysis is carried out through a sequence of carefully orchestrated steps, each designed to ensure the integrity and validity of the research process.

The initial step, aptly termed 'preparing data analysis', provides a crucial opportunity to verify the sufficiency and appropriateness of the collected data. This preparatory stage is paramount as it lays the groundwork for the subsequent stages of data analysis, thereby ensuring a robust and reliable research process.

The second step, 'describing the data quantitatively and reading the data', involves presenting the data obtained from the closed and open-ended questionnaires in a quantitative format; the information is meticulously read to ascertain its adequacy in addressing the research questions. This step ensures the data's integrity, relevance, and alignment with the research objectives.

The final step, 'Reporting the Findings', presents the data comprehensively in various formats, including tables, narratives, and descriptions. The findings are then discussed in relation to the relevant theoretical framework. This step provides a detailed account of the research findings. It situates them within the broader academic discourse, making a significant contribution to IT training for teachers in primarily rural areas.



CHAPTER IV

ANALYSIS RESULT

4.1 Basic Information of Respondents

The sample for this research consisted of teachers from three rural primary schools in Jianli City, Hubei Province. The author distributed the questionnaires online and recovered 56 valid questionnaires. The specific basic information of the survey respondents is as follows.

Table 4.1 Basic Information of the Respondents

Teachers' Basic Information			
Title	Options (as in computer software settings)	Quorum	Percentage
Gender	Male	19	33.9 %
	Female	37	66.0 %
Age	20-30 years	11	19.6 %
	30-40 years old	23	41.0 %
	40-50 years	16	28.5 %
	Over 50 years old	6	10.7 %
	1-5 years	8	14.2 %
Length of teaching experience	6-10 years	9	16.0 %
	11-15 years	16	28.5 %
	16-20 years	17	30.3 %
	More than 20 years	6	10.7 %
	Secondary school	4	7.1%
Academic qualifications	College	9	16.0 %
	Bachelor's	39	69.6 %
	Master's degree or above	4	7.1%
Title	Senior	11	19.6 %
	Intermediate	24	42.8 %
	Junior	15	26.7 %
	Unclassified	6	10.7 %

The questionnaire is designed to gather demographic and professional information about teachers. The data collected provides a comprehensive snapshot of the teaching community. Regarding gender, the teaching community is predominantly female, with women making up 66.0% (37 individuals) of the respondents. Conversely, men represent a smaller portion, accounting for 33.9% (19 individuals).

When examining the age distribution, we observe a diverse range of teachers. The largest age group is those aged 30-40, representing 41.0% (23 individuals) of the respondents. This is followed by the 40-50 years old group at 28.5% (16 individuals), the 20-30 years old group at 19.6% (11 individuals), and finally, those over 50 years old at 10.7% (6 individuals). The teaching experience of the respondents also varies widely. The largest group, at 30.3% (17 individuals), has 16-20 years of experience. This is closely followed by those with 11-15 years of experience at 28.5% (16 individuals). Teachers with 6-10 years and 1-5 years of experience represent 16.0% (9 individuals) and 14.2% (8 individuals), respectively. Lastly, teachers with more than 20 years of experience comprise 10.7% (6 individuals) of the respondents. Regarding academic qualifications, most teachers, 69.6% (39 individuals), hold an undergraduate degree. Those with a three-year college education represent 16.0% (9 individuals), while vocational secondary school graduates and those holding a Master's degree or higher comprise 7.1% (4 individuals). Lastly, the professional titles held by the teachers range from high-level to ungraded. Middle-level titles are the most common, held by 42.8% (24 individuals) of the teachers. High-level and junior-ranking titles are held by 19.6% (11 individuals) and 26.7% (15 individuals). Ungraded teachers represent the smallest group at 10.7% (6 individuals).

The Teacher Basic Information Form questionnaire reveals a diverse teaching community. Most teachers are between 30 and 40 years old and have 16 to 20 years of experience. Most hold an undergraduate degree and a middle-level professional title. However, there is a significant representation across different age groups, levels of experience, academic qualifications, and professional titles, reflecting the richness and variety of the teaching profession. This diversity is a testament to the broad range of expertise and backgrounds in the educational field.

4.2 Results of Questionnaire

The questionnaire was divided into two main sections. The first part consists of basic information about the research subjects, which includes 5 questions. The second part is for teachers' IT training, comprising 14 questions that measure the purpose and attitude of the training, content and form of the training, training effect and

feedback, and training evaluation and needs, as shown in Table 4.2.

The author conducted an online questionnaire survey among in-service teachers of three rural primary schools in Jiali City, Hubei Province, which lasted one month and was completed by 56 participants. To deepen the research, the author interviewed some survey respondents to understand their views and suggestions on information technology training and to gather more information about genuine expressions, thereby enriching the research.

With the continuous development of information technology in Education, the three rural primary schools under the jurisdiction of the city of Jiali in Hubei Province have been equipped with a teaching environment for the application of information technology, and the basic information technology hardware facilities have been completed, with basic information technology education and teaching working conditions.

4.2.1 Training Objectives and Attitudes

The analysis of the questionnaire data shows that only 34.0 % of the trained teachers, or less than half, were trained for "improving their IT skills", indicating that most of the teachers interviewed received training mainly based on arrangements made by their schools and that they did not have a strong sense of autonomy in receiving training.



Figure 4.1 Survey Results on Purpose of Attending IT Training for Teachers

Figure 4.1 illustrates the teachers' attitudes toward training. Among them, the attitude of indifference and expressed willingness were almost equal. However,

some teachers who were unwilling to participate in the training were still interviewed.

From "Question 2: Do you think information technology is important to teachers?" It is known that 55.2 % of teachers value information technology. This half-support may be due to the rapid development of information technology, which allows rural teachers to recognize the importance of information technology. However, while half of the teachers valued IT, 60.6 % were not actively engaged in learning-related technologies. This paradoxical phenomenon suggests that the teachers interviewed still lack a comprehensive understanding of IT, and their grasp of IT remains unclear.

Table 4.2 Attitudes Towards Training

Training Attitude Scale					
Question 1: Do you usually research about information technology?	Everyday Learning 9 (16.0 %)	Regular research 13 (23.2 %)	Occasional research 23 (41.0 %)	Almost no research 6 (10.7 %)	No research 5 (8.9 %)
Question 2: Do you think IT is important for teachers?	Very important 8 (14.2 %)	Very Significant 23 (41.0 %)	Not essential 17 (30.3 %)	Unimportant 6 (10.7 %)	Very unimportant 2 (3.5 %)
Question 4: What are your views on participating in teacher IT training?	Very willing 11 (19.6 %)	Willing (do sth.) 14 (25.0 %)	Cannot be said to be 27 (48.2 %)	Unwilling 2 (3.5 %)	Very reluctant 2 (3.5 %)

The Training Attitude Scale questionnaire is a valuable tool that sheds light on teachers' perspectives toward the role of information technology (IT) in their profession.

The first question explores how frequently teachers engage in research related to IT. The responses paint a diverse picture. A small group of teachers, comprising 16.0% (9 individuals), are deeply engaged and learn about IT daily. A slightly larger group, 23.2% (13 individuals), regularly conduct research. However, the majority, 41.0% (23 individuals), only occasionally delve into IT research. A smaller segment, 10.7% (6 individuals), rarely engage in such research, and 8.9% (5 individuals) do not engage in IT research at all. This suggests a need for encouraging more consistent engagement with IT among teachers.

The second question probes the perceived importance of IT in their teaching roles. A small group, 14.2% (8 individuals), view IT as very important. The largest group, 41.0% (23 individuals), sees IT as significant. However, a considerable number,

30.3% (17 individuals), feel that IT is not essential. A smaller group, 10.7% (6 individuals), view IT as unimportant, while a small segment, 3.5% (2 individuals), considers IT very unimportant. This indicates a varied perception of the role of IT in teaching.

The fourth question explores teachers' willingness to participate in IT training. A small group, 19.6% (11 individuals), are very willing to participate. A slightly larger group, 25.0% (14 individuals), are willing to participate. Interestingly, the majority, 48.2% (27 individuals), expressed a neutral stance. A small group, comprising 3.5% (2 individuals), is unwilling, and another 3.5% (2 individuals) are very reluctant. This suggests that while there is some interest in IT training, there is also a level of ambivalence, indicating a potential area for further exploration and encouragement.

The Training Attitude Scale questionnaire reveals teachers' attitudes toward information technology (IT). It shows a mix of engagement levels in IT research, with the majority occasionally engaging. Views on the importance of IT in teaching vary, but many see it as significant. While there is interest in IT training, a large portion remains neutral. This data highlights the importance of consistent IT engagement and the potential to promote further IT training among teachers.

4.2.2 Content and Form of Training

The provided data (Table 4.3) originates from a questionnaire survey that aimed to identify the areas of training content that interest or are necessary to the respondents. The data is organized in frequency and percentage of respondents who expressed interest in each area, and these areas are ranked in order of interest. The area of Office Production emerged as the most sought-after training content, with 51 respondents, which constitutes 91.0% of the total respondents, expressing interest in it. The Basic Theory of Educational Technology was the second most preferred area, chosen by 46 respondents, which accounts for 82.1% of the total respondents. The third area of interest was the Integration of Information Technology and the Curriculum, which attracted the attention of 43 respondents, making up 76.7% of the total respondents. The fourth area, Courseware Production, was selected by 36 respondents, representing 64.2% of the total respondents. The fifth area, Image Processing, was chosen by 32 respondents, 57.1% of the total respondents. This was closely followed

by the sixth area, how to Use Multimedia Equipment, which was selected by 31 respondents, accounting for 55.3% of the total respondents. The seventh area of interest, Web Authoring, was chosen by 23 respondents, representing 41.0% of the total respondents. The eighth area, Maintenance of Teaching Equipment, was selected by 13 respondents, representing 23.2% of the total. The ninth area, Information Security Knowledge, was chosen by 9 respondents, representing 16.0% of the total respondents. Lastly, the area of Web-based Information Retrieval received the least interest, with only 8 respondents, representing 14.2% of the total respondents, expressing interest in it. This data provides a comprehensive understanding of the training needs and preferences of the respondents, which can be instrumental in designing and prioritizing future training programs.

The data from a questionnaire survey (Table 4.3) reveals the respondents' interest in various training content areas. Office Production was the most popular, with 91.0% of respondents expressing interest. This was followed by the Basic Theory of Educational Technology (82.1%), Integration of Information Technology and the Curriculum (76.7%), Courseware Production (64.2%), and Image Processing (57.1%). Other areas of interest included 'How to Use Multimedia Equipment' (55.3%), 'Web Authoring' (41.0%), 'Maintenance of Teaching Equipment' (23.2%), 'Information Security Knowledge' (16.0%), and 'Web-based Information Retrieval' (14.2%). This data is crucial for designing and prioritizing future training programs.

Table 4.3 Training Content

Training Content			
Training Content	Frequency	Percentage	Arrange in order
Office Production	51	91.0 %	1
Image processing	32	57.1%	5
Web Authoring	23	41.0 %	7
How to use multimedia equipment	31	55.3 %	6
Courseware production	36	64.2 %	4
Maintenance of teaching equipment	13	23.2 %	8
Basic Theory of Educational Technology	46	82.1%	2

Table 4.3 Training Content (continued)

Training Content	Frequency	Percentage	Arrange in order
Integration of information technology and the curriculum	43	76.7 %	3
Web-based information retrieval	8	14.2 %	10
Information security knowledge	9	16.0 %	9

In summary, it can be seen that the content of teachers' IT training focuses mainly on computer office production (91.0%), fundamental theories of educational technology (82.1%), and the integration of IT with the curriculum (76.7%). In comparison, knowledge of information security (16.0%) and information retrieval on the Internet (14.2%) are less frequently covered. This indicates that the training content is primarily based on theory and basic application operations, suggesting that it lacks sufficient innovation and security awareness.

Table 4.4 Training Format

Forms of Training	Frequency	Percentage	Arrange in order
Expert Lectures	56	100.0 %	1
Collaborative inquiry	17	30.3 %	6
Online Education	56	100.0 %	1
Viewing of video materials	56	100.0 %	1
Teaching Observation	35	62.5 %	3
Case Studies	27	48.2 %	5
Hands-on	37	66.0 %	2
Model	33	58.9 %	4

From 4.4, It is known that the form of teachers' IT training is mainly dominated by theoretical teaching in the form of expert lectures (100%), online Education (100%), and watching video materials (100%), with half of the training in the form of teaching observation (62.5%), practical operation (66.0%), and demonstration and exemplification (58.9%). This suggests that the balance between theory and practice is skewed, which may be influenced by factors such as the availability of IT equipment in rural primary schools or the impact of the epidemic.

The data in Table 4.4 is from a questionnaire that aimed to understand respondents' preferences towards different training forms. The data is organized according to the frequency and percentage of respondents who expressed interest in

each form, and these forms are ranked in order of preference. Three forms of training—Expert Lectures, Online Education, and Viewing of Video Materials—emerged as the most preferred forms of training, each with a frequency of 56, representing 100.0% of the respondents. This indicates that all respondents expressed interest in these forms of training, making them the most popular among them. The second most popular form of training is Hands-on training, which was chosen by 37 respondents, accounting for 66.0% of the total respondents. This form of training allows learners to gain practical experience and skills. The third most popular form of training is Teaching Observation, with 35 respondents showing interest, representing 62.5% of the total respondents. This training involves observing experienced teachers to learn effective teaching strategies and techniques. The fourth most popular form of training is the Model, chosen by 33 respondents, accounting for 58.9% of the total respondents. This form of training involves learning from models or examples. The fifth most popular form of training is Case Studies, chosen by 27 respondents, representing 48.2% of the total respondents. This form of training involves studying real-life cases to develop problem-solving skills. Finally, the least popular form of training is Collaborative Enquiry, with only 17 respondents showing interest, representing 30.3% of the total respondents. This training involves working in groups to explore a specific topic or issue.

In short, the questionnaire data reveals respondents' preferences for different training forms. Expert Lectures, Online Education, and Viewing of Video Materials were the top choices, each with 100% interest. Hands-on training (66.0%) and Teaching Observation (62.5%) followed, offering practical skills and strategy learning. Model (58.9%) and Case Studies (48.2%) were next, focusing on learning from examples and real-life scenarios. The least preferred was Collaborative inquiry (30.3%), involving group-based problem investigation. This data is instrumental for tailoring future training programs.

4.2.3 Training Effectiveness and Feedback

The practical developmental application of training learning outcomes determines the success of training. According to the data in Figure 2 from the questionnaire survey, 44.2% of the teachers reported improved application after training, and the overall figure reached half of the total number, indicating that there is still room for improvement. However, 21.4 % of teachers' training results are not satisfactory.

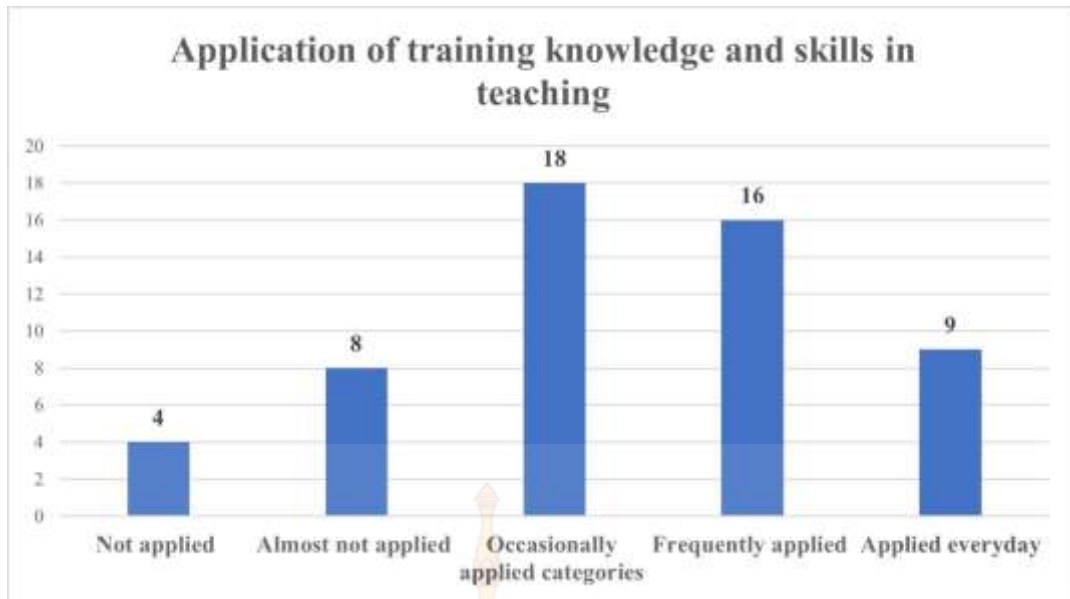


Figure 4.2 Survey Results on Whether Training is Applied to Instruction

The success of any training program is fundamentally determined by the practical developmental application of the learning outcomes derived from the training. This means that a training program's effectiveness is measured not just by the knowledge acquired during the training but, more importantly, by how well this knowledge is applied in a practical, developmental context. Referring to the data presented in Figure 2, which is derived from a questionnaire survey, it is observed that 44.2% of the teachers could effectively apply what they learned from the training, indicating a better application of the training outcomes. This is a positive indicator as it suggests that nearly half of the teachers successfully translated the knowledge gained from the training into practical application. However, it is important to note that this figure, while promising, still leaves room for improvement. The fact that the overall figure has reached half of the total number suggests that there is potential for increasing the effectiveness of the training, thereby enabling a greater number of teachers to apply their learning outcomes more effectively.

On the other hand, the data also reveal that 21.4% of the teachers were not satisfied with the training results. This significant proportion suggests that the training did not meet the expectations or needs of these teachers. This could be due to various reasons, such as the relevance of the training content, the delivery method, or the lack

of support for applying the training outcomes.

In conclusion, while the data shows a positive trend toward the practical application of training outcomes, it also highlights areas that require attention and improvement. It underscores the need for continuous evaluation and refinement of the training program to ensure it meets the needs of all teachers and leads to satisfactory results.

4.2.4 Training Evaluation and Needs

A multitude of factors influences the participation of teachers in training programs. These factors can be broadly categorized into two groups: internal reasons specific to the teachers themselves and external reasons related to the circumstances surrounding the training.

One of the primary external factors constraining teachers' participation in training is the heavy workload they often have to manage. According to the data presented in Figure 3, 39.2% of teachers reported that their teaching duties were so demanding that they did not have sufficient time to attend the entire course. This suggests that the guarantees related to the training, such as time allowances or workload adjustments to accommodate the training, may not be adequate. It underscores the need for better planning and support mechanisms to ensure that teachers can fully participate in the training without being overwhelmed by their regular duties. Another external factor that was highlighted was the scheduling of the training. Approximately 37.2% of the teachers felt that the training was scheduled too tightly, leaving them with insufficient time to digest and internalize the training content. This feedback indicates that the follow-up instructional practice teaching associated with the training needs to be further improved. It suggests that the training schedule should allow teachers ample time to reflect on what they have learned and gradually incorporate these new insights into their teaching practice.

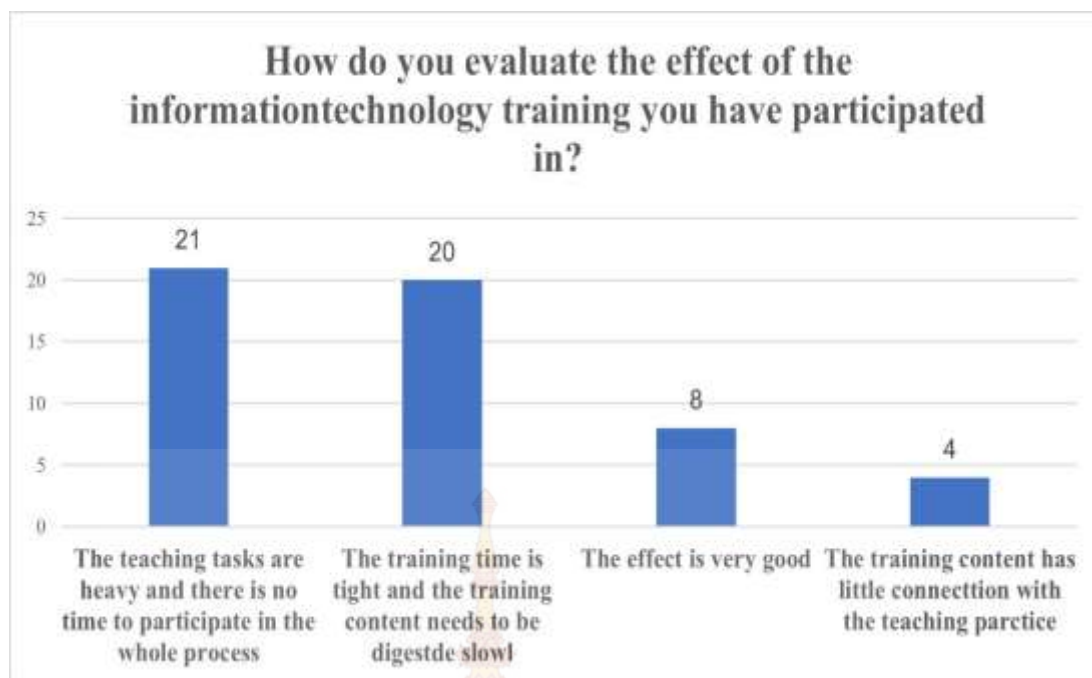


Figure 4.3 Results of Teachers' Evaluation of Training Effectiveness

Factors constraining teachers' participation in training include both personal reasons and external factors, such as heavy workloads and conflicting training schedules. According to the figures, it is known that 39.2% of teachers believe they have heavy teaching duties and do not have sufficient time to attend the course. This suggests that the training-related guarantees are insufficient. 37.2% of the teachers thought that the training was tightly scheduled and that the content of the training work needed to be digested slowly, indicating that the training's follow-up instructional practice teaching needs further improvement.

In conclusion, while the intention to provide training for teachers is commendable, it is essential to consider both internal and external factors that may impact their ability to fully participate in and benefit from the training. Addressing these issues can create a more conducive environment for teacher training, ultimately leading to more effective teaching and learning outcomes.

The data provided in Table 4.5 is from a questionnaire that aimed to understand the training needs of respondents. The data is organized into two main categories: Training Content and Forms of Training, each with different subcategories.

In the Training Content category, the highest demand was for Courseware

Production, with 41 respondents (73.2%) expressing a need for this training. This was followed by 'How to Use Multimedia Equipment' (38 respondents, 67.8%), 'Web-based Information Retrieval' (36 respondents, 64.2%), and 'Web Authoring' (35 respondents, 62.5%). Other areas of interest included Image Processing (32 respondents, 57.1%), Integration of Information Technology and the Curriculum (33 respondents, 58.9%), Maintenance of Teaching Equipment (28 respondents, 50.0%), and Information Security Knowledge (28 respondents, 49.5%). The last demand was for Office Software and Basic Theory of Educational Technology, each with 21 respondents (37.5%).

In the Forms of Training category, the most preferred form of training was Hands-on, chosen by 42 respondents (75.0%), followed by Model (40 respondents, 71.4%). Other forms of training included Expert Lectures and Teaching Observation, each chosen by 27 respondents (48.2%), Online Education and Case Studies, each chosen by 28 respondents (50.0%). Moreover, viewing video materials was reported by 23 respondents (41.0%). The least preferred form of training was Collaborative Enquiry, chosen by 19 respondents (33.9%).

The questionnaire data in Table 4.5 reveals respondents' training needs. In the Training Content category, Courseware Production was in the highest demand (73.2%), followed by How to Use Multimedia Equipment (67.8%), Web-based Information Retrieval (64.2%), and Web Authoring (62.5%). The least demanded were Office Software and Basic Theory of Educational Technology (37.5%). In the Forms of Training category, Hands-on training was most preferred (75.0%), followed by Model (71.4%). The least preferred was Collaborative Enquiry (33.9%).

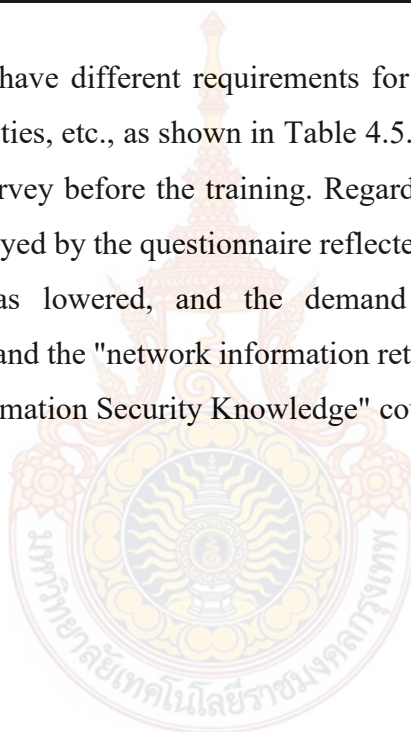
Table 4.5 Training Needs

Training Needs	Categorization	Quorum	Percentage
	Office software	21	37.5 %
	Image processing	32	57.1%
	Web authoring	35	62.5 %
	Courseware production	41	73.2 %
Training content	How to use multimedia equipment	38	67.8 %
	Maintenance of teaching equipment	28	50.0 %
	Basic Theory of Educational Technology	21	37.5 %
	Integration of information technology and the curriculum	33	58.9 %

Table 4.5 Training Needs (continued)

Training Needs	Categorization	Quorum	Percentage
Forms of training	Web-based information retrieval	36	64.2 %
	Information security knowledge	28	49.5 %
	Expert Lectures	27	48.2 %
	Collaborative inquiry	19	33.9 %
	Online Education	28	50.0 %
	Viewing of video materials	23	41.0 %
	Teaching Observation	27	48.2 %
	Case Studies	28	49.5 %
	hands-on	42	75.0 %
	model	40	71.4 %

Teachers have different requirements for training due to their subjective thinking, school facilities, etc., as shown in Table 4.5. Therefore, it is indispensable to conduct a demand survey before the training. Regarding the training contents of this course, teachers surveyed by the questionnaire reflected that the demand for the "office software" course was lowered, and the demand for the "teaching equipment maintenance" course and the "network information retrieval" course was increased, the demand for the "Information Security Knowledge" course has increased.



CHAPTER V

CONCLUSION AND DISCUSSION

5.1 Conclusion

The study categorizes training into objectives, attitudes, content, format, effectiveness, feedback, and evaluation, as well as needs. Teachers' attitudes towards IT vary; some see its importance in teaching, and others remain neutral. The most popular training content was Office Production, while the least demanded were Office Software and Basic Theory of Educational Technology. Regarding format, Expert Lectures, Online Education, and viewing video materials were the top choices, with Collaborative Enquiry being the least preferred. Training effectiveness is gauged by how well the knowledge is applied, with some teachers effectively applying what they have learned while others are not satisfied.

External factors, such as a heavy workload and tight scheduling, also affect teachers' participation in training. Some teachers reported that their teaching duties were so demanding that they had insufficient time to attend the entire course. This suggests that the guarantees related to the training, such as time allowances or workload adjustments to accommodate the training, may not be adequate. It underscores the need for better planning and support mechanisms to ensure that teachers can fully participate in the training without being overwhelmed by their regular duties. The teachers felt the training was scheduled too tightly, leaving them little time to digest and internalize the training content. This feedback indicates that the follow-up instructional practice teaching associated with the training needs to be further improved. It suggests that the training schedule should allow teachers ample time to reflect on what they have learned and gradually incorporate these new insights into their teaching practice.

5.2 Discussion

The study categorizes training into objectives, attitudes, content, format, effectiveness, feedback, and evaluation, as well as needs. Teachers' attitudes towards IT vary; some see its importance in teaching, and others remain neutral. The most popular training content was Office Production (91.0%), while the least demanded were

Office Software and Basic Theory of Educational Technology (both 37.5%). Regarding format, Expert Lectures, Online Education, and viewing video materials were the top choices, with Collaborative Enquiry being the least preferred. Training effectiveness is gauged by how well the knowledge is applied, with 44.2% of teachers effectively applying what they learned, while 21.4% expressed dissatisfaction. External factors, such as a heavy workload and tight scheduling, also affect teachers' participation in training. This data is crucial for tailoring future training programs.

5.2.1 Objectives and Attitudes

The findings from the questionnaire data reveal some interesting insights about teachers' attitudes towards training and their engagement with information technology (IT). Notably, only 34.0% of the trained teachers were focused on "improving their IT skills", suggesting that most teachers received training based on school arrangements rather than their initiative. This could indicate a gap in the current training approach, where teachers' needs and interests might not be adequately addressed.

Comparing these findings with previous studies, it is clear that teachers' attitudes play a significant role in training effectiveness. The data shows a split between indifferent teachers and those willing to participate in training. This highlights the need for more personalized and engaging training programs that cater to different attitudes and motivate all teachers to participate.

The data also reveals a paradox in teachers' perception of IT. While 55.2% of the teachers recognize the importance of IT, a larger percentage (60.6%) are not actively engaged in learning-related technologies. This suggests that while teachers understand the value of IT, there may be barriers preventing them from actively engaging with it. These barriers could be due to insufficient resources, time, or adequate training.

These findings highlighted the need for a more tailored and flexible approach to teacher training. Training programs should focus on improving specific skills, such as IT, and consider teachers' individual needs, interests, and attitudes. Furthermore, it is crucial to identify and address the barriers preventing teachers from actively learning and using IT to address the paradox of IT engagement. This could involve providing resources, creating a supportive learning environment, or offering

more comprehensive and accessible IT training. By addressing these issues, we can help teachers fully harness the power of IT in their teaching, ultimately leading to more effective teaching and learning outcomes.

5.2.2 Content of Training

The data from the questionnaire surveys provides a comprehensive understanding of the training needs and preferences of the respondents. The most popular training content was Office Production, with 91.0% of respondents expressing interest, followed by Basic Theory of Educational Technology (82.1%), Integration of Information Technology and the Curriculum (76.7%), Courseware Production (64.2%), and Image Processing (57.1%). Other areas of interest included 'How to Use Multimedia Equipment' (55.3%), 'Web Authoring' (41.0%), 'Maintenance of Teaching Equipment' (23.2%), 'Information Security Knowledge' (16.0%), and 'Web-based Information Retrieval' (14.2%).

The researcher is intensely interested in practical skills such as office and courseware production. However, there is also a significant interest in more theoretical areas, such as the Basic Theory of Educational Technology and the Integration of Information Technology and the Curriculum. This suggests that a balanced approach to training, incorporating both practical skills and theoretical knowledge, could be most effective.

5.2.3 Form of Training

The data from the questionnaire survey provides valuable insights into respondents' preferences towards different training forms. The most preferred forms of training were Expert Lectures, Online Education, and viewing video materials, each with 100% interest. This aligns with existing research that suggests the effectiveness of these methods in conveying information and engaging learners. However, it is interesting to note that, despite the rise of digital learning, traditional forms of training, such as expert lectures, still hold significant value.

Hands-on training and Teaching Observation followed, offering practical skills and strategy learning. These forms of training, which allow learners to gain practical experience and observe experienced teachers, were also popular among respondents. This is consistent with the experiential learning theory, which emphasizes learning through experience.

However, Collaborative inquiry, which involves group-based problem investigation, was the least preferred. This is somewhat surprising given the increasing emphasis on collaborative learning in contemporary educational research. It suggests a potential gap between educational theory and practice, pointing to the need for further investigation into the factors that may deter respondents from this form of training.

The data indicate a higher preference for Model and case studies compared to existing studies. This could be attributed to the specific context or demographics of the respondents, highlighting the importance of considering these factors when designing training programs. While the findings largely corroborate existing research on preferred training forms, they also reveal some unique trends and gaps. These insights can be instrumental in tailoring future training programs and guiding further research in this field. The data underscores the need for a balanced approach to training that combines different forms and caters to diverse learner preferences. It also highlights the need for further exploration of less preferred forms of training, such as Collaborative Enquiry.

5.2.4 Training Effectiveness and Feedback

The findings from the questionnaire survey support existing research that emphasizes the importance of practical application in determining the success of a training program. It is widely recognized that the effectiveness of training is not just about acquiring knowledge but, more importantly, how well it is applied.

The data shows that 44.2% of the teachers could effectively apply what they learned from the training, which is a positive indicator. However, this figure also suggests room for improvement, as it represents less than half of the total respondents. This aligns with existing research that highlights the ongoing challenge of ensuring the effective transfer of training.

On the other hand, the data reveals that 21.4% of the teachers were not satisfied with the training results. This could be due to various factors, such as the relevance of the training content, the delivery method, or the lack of support for applying the training outcomes. These findings align with existing research that highlights the significance of these factors in determining training effectiveness.

However, the data also reveals potential gaps. While existing research often emphasizes the role of individual factors, such as motivation and self-efficacy, in

training effectiveness, the data suggest that structural factors, including the relevance of training content and delivery method, also play a crucial role. This highlights the need for future research to investigate these factors in greater detail. The data underscore the need for continuous evaluation and refinement of training programs to ensure they meet the needs of all teachers and yield satisfactory results. It also highlights potential areas for further research, including the exploration of structural factors that influence training effectiveness.

5.2.5 Training Evaluation and Need

The factors influencing teacher participation in training programs and their training needs have interesting parallels and divergences with existing studies. The study echoes existing research in several key areas. Firstly, the issue of heavy workload emerges as a significant barrier to teacher participation in one's study and others. Nearly 40% of teachers felt their teaching duties were so demanding that they could not fully engage with the training course. This finding aligns with other studies that identify heavy workload as a significant external factor hindering teachers' professional development.

Secondly, well-planned and flexible scheduling is important for successful teacher training. About 37% of the teachers in the study felt the training was scheduled too tightly, leaving them little time to absorb and apply the training content. This feedback aligns with other research emphasizing the need for thoughtful scheduling that accommodates teachers' other responsibilities and learning pace.

Thirdly, the study identifies specific training content and forms that teachers demand and prefer. Courseware Production, how to Use Multimedia Equipment, and Web-based Information Retrieval emerged as the most sought-after training content. Hands-on and modeling were the preferred forms of training. These findings are consistent with other studies underscoring the value of practical, hands-on training and the necessity for training in modern teaching tools and techniques.

However, the study also reveals potential gaps and areas for further exploration. While the research focuses on external factors, some studies highlight the role of internal factors, such as teachers' motivation for professional development. This suggests a potential area to explore in future research.

Additionally, the study provides a broad overview of the training needs, but

a more in-depth analysis of specific training needs could be beneficial. For instance, exploring the need for training in specific subjects or pedagogical approaches could yield valuable insights.

Lastly, the study does not seem to consider the impact of demographic variables, such as age, gender, and years of experience, on teachers' training needs and their participation in training programs. Some studies have found these variables influential, suggesting another interesting avenue for future research.

5.3 Recommendation

The study has yielded some insightful findings, leading to theoretical and practical recommendations that could significantly enhance the effectiveness of teacher training programs.

5.3.1 Theoretical Insights

Firstly, it is clear that teachers' attitudes towards IT are varied. Some recognize its importance in teaching, while others remain neutral. This suggests a need for Attitude Adjustment. Strategies could be developed to showcase the benefits and importance of IT in teaching, thereby positively influencing teachers' attitudes.

Secondly, the study found that Office Production was the most popular training content, while Office Software and Basic Theory of Educational Technology were in less demand. This highlights the importance of Content Relevance. The training content should be relevant and in line with the teachers' needs. For instance, given its popularity, more advanced courses in Office Production could be offered.

Thirdly, in terms of format, Expert Lectures, Online Education, and viewing video materials were the top choices, with Collaborative Enquiry being the least preferred. This calls for Format Flexibility. The training format should consider the preferences of teachers. Emphasizing the preferred formats could lead to better engagement and learning outcomes.

Lastly, the effectiveness of training is gauged by how well the knowledge is applied. Some teachers effectively applied what they learned, but others were not satisfied. This underscores the need for an effective evaluation mechanism. The effectiveness of the training should be evaluated based not just on knowledge

acquisition but also on how well the knowledge is applied in real-world teaching scenarios.

5.3.2 Practical Suggestions

On the practical side, external factors such as a heavy workload and tight scheduling affect teachers' participation in training. This necessitates Workload Management. Teachers' workloads could be adjusted, or time allowances could be provided to accommodate the training. This would ensure that teachers can fully participate in the training without being overwhelmed by their regular duties.

The teachers felt the training was scheduled too tightly, leaving them little time to digest and internalize the content. This indicates a need for better scheduling. The training schedule should allow teachers ample time to digest and internalize the content. This could involve spreading the training over a more extended period or incorporating breaks for reflection and practice.

To help teachers apply what they have learned from the training in their teaching practice, Support Mechanisms should be implemented. This could involve follow-up sessions, peer discussions, or mentorship programs. These mechanisms would provide the necessary support for teachers to incorporate their new insights into their teaching practice gradually.

Finally, a feedback mechanism should be established to improve the training continuously based on the teachers' experiences and suggestions. This will ensure that the training remains relevant and practical, resulting in improved teaching outcomes.

REFERENCES

- Bayne, S. (2015). What's the matter with "technology-enhanced learning"? *Learning, Media and Technology*, 40(1), 5–20.
<https://doi.org/10.1080/17439884.2014.915851>
- Crawford, R. (2000). Information technology in secondary schools and its impact on training information technology teachers. *Journal of Information Technology for Teacher Education*, 9(2), 183–198.
<https://doi.org/10.1080/14759390000200082>
- Fisher, M. (2000). Computer skills of initial teacher education students. *Journal of Information Technology for Teacher Education*, 9(1), 109–123.
<https://doi.org/10.1080/14759390000200075>
- Frese, M., Brodbeck, F., Heinbokel, T., Mooser, C., Schleiffenbaum, E., & Thiemann, P. (1991). Errors in training computer skills: On the positive function of errors. *Human-Computer Interaction*, 6(1), 77–93.
https://doi.org/10.1207/s15327051hci0601_3
- Givens, N., & McShea, J. (2000). Learning through remote practical experiments over the Internet: A case study from teacher education. *Journal of Information Technology for Teacher Education*, 9(1), 125–135.
<https://doi.org/10.1080/14759390000200076>
- Hamidi, F., Meshkat, M., Rezaee, M., & Jafari, M. (2011). Information technology in education. *Procedia Computer Science*, 3, 369–373.
<https://doi.org/10.1016/j.procs.2010.12.062>
- Hu, Z., & McGrath, I. (2011). Innovation in higher education in China: Are teachers ready to integrate ICT into English language teaching? *Technology, Pedagogy and Education*, 20(1), 41–59.
<https://doi.org/10.1080/1475939X.2011.554014>

- Jansen, H. (2010). The logic of qualitative survey research and its position in the field of social research methods. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 11(2), 1–21. <http://www.qualitative-research.net/index.php/fqs/article/view/1450/2946>
- Kirkwood, A., & Price, L. (2014). Technology-enhanced learning and teaching in higher education: What is “enhanced” and how do we know? A critical literature review. *Learning, Media and Technology*, 39(1), 6–36. <https://doi.org/10.1080/17439884.2013.770404>
- Kong, S. C. (2009). An empirical study of school-based planning for using information technology to improve the quality of education in the twenty-first century. *Technology, Pedagogy and Education*, 18(3), 343–359. <https://doi.org/10.1080/14759390903255627>
- Kovalik, C., Kuo, C., & Karpinski, A. (2013). Assessing pre-service teachers’ information and communication technologies knowledge. *Journal of Technology and Teacher Education*, 21(2), 179–202.
- Liu, H., Lin, C. H., & Zhang, D. (2017). Pedagogical beliefs and attitudes toward information and communication technology: A survey of teachers of English as a foreign language in China. *Computer Assisted Language Learning*, 30(8), 745–765. <https://doi.org/10.1080/09588221.2017.1347572>
- Marsland, N., Wilson, M., Abeyasekera, S., & Kleih, U. (2014). A methodological framework for combining quantitative and qualitative survey methods. *Source*, January 2000, 1–24.
- McKnight, K., O'Malley, K., Ruzic, R., Horsley, M., Franey, J. J., & Bassett, K. (2016). Teaching in a digital age: How educators use technology to improve student learning. *Journal of Research on Technology in Education*, 48(3), 194–211. <https://doi.org/10.1080/15391523.2016.1175856>

- Mikre, F. (2011). The roles of information communication technologies in education: Review article with emphasis on the computer and Internet. *African Journals Online*, 6(2), 109–126. <http://www.ajol.info/index.php/ejesc/article/view/73521>
- Mumtaz, S. (2000). Factors affecting teachers' use of information and communications technology: A literature review. *Journal of Information Technology for Teacher Education*, 9(3), 319–342. <https://doi.org/10.1080/14759390000200096>
- Pearson, J. (2001). Information technology in education: Policy and provision in Hong Kong schools. *Journal of Information Technology for Teacher Education*, 10(3), 279–292. <https://doi.org/10.1080/14759390100200116>
- Russell, G., Finger, G., & Russell, N. (2000). Information technology skills of Australian teachers: Implications for teacher education. *Journal of Information Technology for Teacher Education*, 9(2), 149–166. <https://doi.org/10.1080/14759390000200087>
- Upadhayaya, P. R. (2023). Information communication technology in education: Bringing innovation in the classroom. *Ganeshman Darpan*, 8(1), 96–110. <https://doi.org/10.3126/gd.v8i1.57335>
- Varank, I. (2007). Effectiveness of quantitative skills, qualitative skills, and gender in determining computer skills and attitudes: A causal analysis. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 81(2), 71–80. <https://doi.org/10.3200/tchs.81.2.71-80>
- Williams, D., Coles, L., Richardson, A., Wilson, K., & Tuson, J. (2000). Integrating information and communications technology in professional practice: An analysis of teachers' needs based on a survey of primary and secondary teachers in Scottish schools. *Journal of Information Technology for Teacher Education*, 9(2), 167–182. <https://doi.org/10.1080/14759390000200089>

- Winter, E., Costello, A., O'Brien, M., & Hickey, G. (2021). Teachers' use of technology and the impact of COVID-19. *Irish Educational Studies*, 40(2), 235–246. <https://doi.org/10.1080/03323315.2021.1916559>
- Yusuf, M. O. (2005). Information and communication technology and education: Analysing the Nigerian national policy for information technology. *International Education Journal*, 6(3), 316–321.



APPENDICES

Questionnaire on the Status of Information Technology Training for Rural Primary School Teachers

Dear Teacher.

Hello! This survey aims to assess the current status of IT training for rural primary school teachers. We will keep your answers confidential. Please answer the questions based on your personal information. Thank you for your support and co-operation!

I. Basic Information

Gender:

- A. Male
- B. Female

Age:

- A. 20-30 years
- B. 30-40 years
- C. 40-50 years
- D. 50 years and above

Years of teaching experience:

- A. 1-5 years
- B. 6-10 years
- C. 11-15 years
- D. 16-20 years
- E. 20 years or more

Education:

- A. Secondary school
- B. College
- C. Bachelor's degree
- D. Master's degree and above

Title:

- A. Senior
- B. Intermediate
- C. Junior
- D. Unclassified

II. Questionnaire Section

1. Do you usually learn about information technology for studying and researching learning and teaching materials?

- A. every day
- B. often
- C. occasionally
- D. hardly
- E. do not use at all

2. Do you think information technology is important for teachers?

- A. very important
- B. important
- C. somewhat important
- D. unimportant
- E. very unimportant

3. Before the training, have you conducted training needs research?

- A. Yes, I did
- B. No, I did not do
- C. I cannot remember

4. What is your attitude towards participating in IT training for teachers?

- A. very willing
- B. willing
- C. indifferent
- D. unwilling
- E. very unwilling

5. Your purpose of attending IT training for teachers?

- A. notification requirements, must attend
- B. no clear purpose. Learn what you are offered
- C. improve their information technology skills

6. What are the main elements of IT training for primary school teachers? (Multiple choice)

- A. Office software
 - B. Image processing
 - C. Webpage creation
 - D. How to use the multimedia equipment
 - E. Courseware Production
 - F. Instructional Equipment Maintenance
 - G. Basic Theory of Educational Technology
 - H. Integration of Information Technology and Curriculum
 - I. Information Retrieval on the Internet
 - J. Knowledge of Information Security
- Others: Mention here.....

7. What are the primary forms of IT training for teachers? (Multiple choice)
- A. Expert Lectures
 - B. Collaborative Inquiry
 - C. Internet Distance Learning
 - D. Watching Video Materials
 - E. Teaching Observation
 - F. Case research
 - G. Practical Practice
 - H. Demonstration Imitation
- Others: Mention here.....
8. Has the content of the training been learned in previous training?
- A. Most have studied
 - B. A few have studied
 - C. None have studied
9. Do you apply the knowledge and skills learned in the training to your teaching?
- A. Every day
 - B. Often
 - C. Occasionally
 - D. Hardly
 - E. Not at all
10. Will you communicate with other trainees or instructors after the training to exchange relevant issues?
- A. There are chat groups or contact information, but they do not discuss
 - B. There is no way to contact
 - C. Discuss among trainees
 - D. Discuss with the training instructor
11. After the training, if you encounter problems in teaching applications, you will?
- A. Resolve on theirs
 - B. Seek a resolution with the training instructor or trainee
 - C. No resolution
12. How would you rate the effectiveness of the IT training you have attended?
- A. My teaching duties are demanding, and I do not have time to attend the entire program.
 - B. The training time is tight, and the training content still needs to be digested slowly
 - C. The training content has little connection with teaching practice
 - D. The training is very effective

13. What area of IT training do you need next time? (Multiple choice)

- A. Office software
- B. Image processing
- C. Webpage creation
- D. Courseware creation
- E. How to use multimedia equipment
- F. Maintenance of teaching equipment
- G. Basic theory of educational technology
- H. Integration of information technology and curriculum
- I. Information retrieval on the Internet
- J. Knowledge of information security

14. What are your favorite training methods? (Multiple choice)

- A. Expert Lectures
 - B. Collaborative Inquiry
 - C. Online Education
 - D. Watching Video Materials
 - E. Teaching Observation
 - F. Case research G. Practical Practice
 - H. Demonstration Imitation
- Others: Mention here.....

