

**A STUDY ON ATTITUDE OF PRE-SERVICE TEACHERS TOWARDS  
E-LEARNING**

**A DISSERTATION SUBMITTED TO  
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## **CERTIFICATE**

This is to certify that **Saswati Nayak**, student of Integrated B.Ed.-M.Ed. program is enrolled for the academic year 2022-2025 in the Regional Institute of Education, Bhopal has worked under my guidance and supervision for dissertation work entitled “**A Study on Attitude of Pre-service Teachers towards e-learning**”. I further certify that this work is original and worthy of submission of the requirement of degree of Three-Year. integrated B.Ed.-M.Ed. programme of Barkatullah University, Bhopal (M.P.).

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## **DECLARATION**

I hereby declare that the dissertation entitled “**A Study on Attitude of Pre-service Teachers towards e-learning**” has been carried out by me during academic year 2022-2025 in partial fulfilment of the requirement for the Degree of Three-year Integrated B.Ed.-M.Ed. program of Barkatullah University, Bhopal (M.P.).

This study has been conducted under the guidance and supervision of **Dr. Pavan Kumar**, Assistant Professor, Department of Education, Regional Institute of Education (NCERT), Bhopal (M.P.).

I also declare that the research work done by me is original. This dissertation work has not been submitted by me for the award of any degree or diploma in this and any other University or Institution.

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## Table of Content

<b>Chapter-1</b>	<b>Introduction</b>	<b>Page No</b>
1.1	Introduction.....	2
1.2	Background of the study.....	3
1.3	Significance of the study.....	3
1.4	Rationale of the study.....	3
1.5	Need and justification.....	4
1.6	Statement of the problem.....	4
1.7	Objectives of the Study.....	4
1.8	Hypothesis of the study.....	5
1.9	Delimitation of the study.....	5
1.10	Operational definition of key terms.....	5
<b>Chapter-2 Review of related Literature.....</b>		<b>7</b>
2.1	Introduction.....	8
2.2	Review related literature on attitude towards e-learning.....	8
2.3	Research Gap.....	13
<b>Chapter-3 Research Methodology.....</b>		<b>14</b>
3.1	Introduction.....	16
3.2	Methodology.....	17
3.2.1	Population.....	17
3.2.2	Sample.....	18
3.2.3	Tools and Technique.....	18
3.2.4	Description of Tool.....	19
3.2.5	Procedure of data collection.....	19
3.3	Data Analysis.....	19
<b>Chapter-4 Data Analysis and Interpretation.....</b>		<b>21</b>
4.1	Introduction.....	22

4.2 Objective wise analysis and interpretation of data Objectives.....	22
4.3 Conclusion.....	26
 <b>Chapter-5 Findings, Conclusion and Suggestions.....</b>	<b>27</b>
5.1 Introduction.....	28
5.2 Statement of the problem.....	28
5.3 Delimitation of the study.....	28
5.4 Objectives of the study.....	28
5.5 Hypothesis of the Study.....	29
5.6 Research Methods.....	29
5.7 Sample of the study.....	29
5.8 Tools used for data Collection.....	30
5.9 Procedure for data analysis.....	30
5.10 Findings of the study.....	30
5.11 Suggestion for further research studies.....	30
5.12 Educational Implications.....	31
5.13 Conclusion.....	31
 <b>Bibliography.....</b>	<b>34</b>
 <b>Appendix.....</b>	<b>36</b>

### **List of tables**

<b>TABLE NO.</b>	<b>CONTENT</b>	<b>PAGE NO.</b>
3.1	Shows total number of male and female pre-service teachers present in the study	18
3.2	Shows total number of central government and state government pre-service teachers	18
4.1	Shows percentage of the attitude pre-service teachers towards E-learning	23
4.2	Shows mean, SD and t-value of male and female pre-service teachers	24
4.3	Shows mean, SD and t-value of government and private pre-service teachers	25

### **List of graphs**

<b>S.NO</b>	<b>CONTENT</b>	<b>PAGE NO.</b>
4.1	Shows percentage of the attitude of pre-service teachers towards E-learning.	23
4.2	Shows graphical representation of mean of male and female pre-service teachers	24
4.3	Shows graphical representation of mean of central government and state government pre-service teachers	26

# **CHAPTER-1**

## **INTRODUCTION**



# **Introduction**

## **1.Introduction:**

The rapid advancement of information and communication technology (ICT) has significantly transformed the global educational landscape. Among these technological developments, e-learning has emerged as a central mode of instruction, offering flexible, accessible, and personalized learning experiences. E-learning encompasses a range of digital tools and platforms that support teaching and learning, from fully online courses to blended learning environments. As educational institutions increasingly integrate e-learning into teacher education programmes, understanding the attitudes of pre-service teachers toward this mode of learning becomes crucial.

Pre-service teachers, who are individuals undergoing formal training before entering the teaching profession, are a vital component of educational reform and innovation. Their attitudes, beliefs, and competencies regarding e-learning can influence not only their learning outcomes but also their future classroom practices. If pre-service teachers hold positive attitudes towards e-learning, they are more likely to engage with digital technologies effectively and adopt them in their teaching practices. Conversely, negative attitudes may hinder their willingness to integrate technology into their future classrooms, potentially limiting the educational opportunities available to their students. Therefore, we can say that attitude has a significant role in modifying the traditional learning methods towards e-learning. Due to the power to communicate across the world and the explosion of information, education will need to shift.

The COVID-19 pandemic has further underscored the importance of e-learning by forcing educational institutions worldwide to shift to remote instruction almost overnight. This abrupt transition has provided both challenges and opportunities for pre-service teacher education. It highlighted issues such as the digital divide, lack of training, and resistance to change. It also accelerated the adoption of e-learning tools and methodologies, offering valuable insights into how technology can be harnessed for education. In this context, the need to assess and understand pre-service teachers' attitudes towards e-learning has become more pertinent than ever.

## **1.1 Background of the Study:**

"Education is the most powerful weapon we can use to change the world" (Mandela, 2003 quoted in Agarwal, 2020). Learning is a need for the forward advancement of a person as well as society. Not only does education make a person equipped with knowledge and abilities, but also gives confidence to live in this competitive world full of completions.

The previous education system followed the conventional face-to-face instruction and learning but with the evolution of technology, the education system globally has been computerized. Now online education is taking the front-line position in imparting knowledge at all stages, either primary or secondary. Technology has played a significant role in making education a global good. The application of the internet now has stretched from distance education to normal education most of the educational centres across the globe have initiated E-learning since it is adaptable and learner-friendly.

## **1.2 Significance of the study:**

E-learning is becoming an increasingly popular mode for studies and it is very important to judge Whether E-learning is a complete learning solution in itself or not. The study is significant as it will help the teachers in understanding the various virtues of E-learning for the student. It will help in understanding what areas need investment to improve the learning effectiveness through E-learning Mode. The study is based on teacher's attitudes toward E-learning. Understanding the attitude of teachers will help to identify the barriers in challenges in E-learning. Thus, the study will help in improving the existing E-learning technologies and practices. Furthermore, it will emphasize the development of teachers as well as student skills to make learning successful. E-learning in India is an innovative and major leap towards enhancing learning, structural development, and acquiring knowledge using digital services and technology.

## **1.3 Rationale of the study**

The study on "Attitude of Pre-service Teachers Towards E-learning" focuses on understanding and studying the attitude of pre-service teachers towards E-learning.

As future educators, their perceptions and openness to digital learning tools significantly influence how effectively they will integrate technology into their teaching practices. By examining these attitudes, the study aims to uncover factors that shape their views, such as digital literacy, accessibility, and institutional support. The findings will inform teacher education programs, helping to design more effective training that fosters positive attitudes towards e-learning and prepares pre-service teachers to thrive in technology-driven educational environments.

### **1.4 Need and Justification:**

- A positive attitude allows one to relax, recall, concentrate, and absorb information as one learns.
- For current teachers, the biggest challenge is a shift in educational trends and technology.
- E-learning provides knowledge by using digital materials.
- As a good teacher having a positive attitude towards everything about learning is quite significant in effective learning.
- A teacher must be willing to embrace new experiences with a healthy and positive attitude so that it may assist in noticing many different types of learning opportunities.
- Thus, a teacher's attitude towards learning is a highly significant factor in teaching effectively during the learning process.

### **1.5 Statement of the Problem:**

A Study on Attitude of Pre-Service Teachers towards e-learning.

### **1.6 Objectives of the Study:**

The following objectives were formulated for present study;

- To study the attitude of pre-service teachers towards E-learning.
- To study the attitude of male and female pre-service teachers towards E-learning.

- To study the attitude of Central Government and State Government pre-service teachers towards E-learning.

## **1.7 Hypothesis of the study:**

**Ho1:** There is no significant difference in attitude between male and female secondary school teachers towards e-learning.

**Ho2:** There is no significant difference in attitude between Central Government and state government pre-service teachers towards E-learning.

## **1.8 Delimitation of the Study:**

- This study is restricted to Koraput District Only.
- Pre-service teachers were included in the present study.
- One of each from Central Government and State Government teacher education institution were included in this study.

## **1.9 Operational definition of key terms:**

The following terms have been used in this study and provided the operational definition to the reader for a full understanding of the study.

### **E-learning:**

“E-learning can be defined as the use of digital technologies and media to deliver, support and enhance teaching, learning, assessment and evaluation.” (Armitage and O’Leary, 2003).

### **Attitude**

“A mental and neural states of readiness, organised through experience, and exerting a directive or dynamic influence upon the individual’s response to all objects and situations with which it is related.” (Allport, 1935)

Attitude for this study is defined as the inclinations and perspective of the pre-service teachers towards e-learning.

## **Teacher's attitude**

The set of beliefs, values, and feelings that a teacher holds about teaching, learning, students, and the educational environment, which significantly influence their behaviour, instructional decisions, and interactions in the classroom.

## **CHAPTER-2**

### **REVIEW OF RELATED LITERATURE**

# **Review of Related Literature**

## **2.1 Introduction:**

The compound word review of literature has two words review and literature. The word "review" signifies to see thoroughly over and over, and the word "Literature" signifies the knowledge information pertaining to that subject or knowledge pertaining to that topic. Education research reviews of literature help us achieve the means of acquiring the information in our specific area of knowledge. Until the researcher knows what the studies are already conducted and what is still left to be studied. Therefore, literature in any field forms the basis upon which all future work must be built. Review of the related literature is one of the most significant steps involved in the research design. It provides an insight into the work that has already been conducted. It forms a perspective for the researcher that he must translate his provisional research questions into concrete ones. The related literature review gave the researcher an opportunity for an understanding of the methods, measures, subjects, and approaches employed by others. This will consequently result in an improved research design significantly.

## **2.2 Review of related literature on attitude towards e-learning:**

Literature was first consulted in order to get an idea about the term E-learning, the history of E-learning how E-learning came into existence, and know about the latest trends, challenges, obstacles, and innovations in the area of E-learning. If the design of an E-learning program is user-friendly and can make the student feel accomplished, the student as E-learning is learner-centered, employs more than one instructional strategy, and offers opportunities for teamwork. To this end, some significant researches are as follows.

- **Alasmari (2022)**, published an article "Attitudes of Public-School Teachers Towards E-Learning in Saudi Arabia," investigates how teachers perceive e-learning during the COVID-19 pandemic. The study aims to assess teachers' readiness, confidence, and acceptance of digital education tools. Using a

quantitative approach, it surveyed public-school teachers to identify factors influencing their attitudes. The findings reveal a generally positive outlook toward e-learning, especially in terms of flexibility and future potential, though challenges related to training and infrastructure persist. The study concludes by emphasizing the need for continuous professional development and better support systems to enhance the effective integration of e-learning in schools.

- **Chandwani, Sharma, and Kumar (2021)** Conducted a study on titled "Attitude of Faculty Towards Online Teaching and Learning in Relation to Certain Variables: A Study During COVID-19 Pandemic in India," explore faculty perceptions of online education amid the pandemic. The study's objective is to examine how variables such as gender, age, and teaching experience influence attitudes toward online teaching. Utilizing a quantitative survey approach, the research reveals that faculty generally held a moderate to positive attitude, with younger and more tech-savvy educators showing greater acceptance. The study concludes that institutional support and targeted training are essential for improving faculty engagement in online teaching.
- **Doley(2020)**, conducted research on "A study on B.Ed. trainees' attitude towards e-learning". It is found that there is no significant difference in the attitudes of B.Ed. students towards e-learning between male and female members. The data revealed that the attitude of B.Ed. students of male and female students have positive attitudes towards e-learning as the mean scores of male and female students are 229.1 and 224.3 respectively. It is also interpreted that the urban B.Ed. trainees have a more positive attitude towards e-learning than rural trainees.
- **Ishmirekha (2017)** conducted research on "A study of college students' attitude towards E-learning with special reference to North Lakhimpur, Assam". The Attitude Towards e-learning Scale by Dimpal Rani was used to collect the data. The study revealed that the attitude of college students towards e-learning is independent with regard to gender and locality.
- **Priyanto, Wibowo, and Nugroho (2017)**, Conducted a study on titled "The Effects of Social Environment and Mechanisms on E-Learning Acceptance Through TAM Variables," examine how social factors influence the



acceptance of e-learning using the Technology Acceptance Model (TAM). The study aims to analyse the impact of subjective norms, peer influence, and institutional mechanisms on perceived usefulness and ease of use, which in turn affect users' intention to adopt e-learning. Findings indicate that social environment and institutional support significantly shape users' attitudes and behavioural intentions. The study concludes that integrating social and organizational elements into e-learning strategies can enhance acceptance and successful implementation.

- **Thakkar and Joshi (2017)**, Conducted a study on titled “Teachers' Perception about E-Learning and Its Impact on Students,” investigate how instructors view e-learning and the effects they believe it has on learners. The study aims to assess teachers' attitudes—including perceived usefulness, ease of integration, and motivational aspects—and their observations on student engagement and academic performance. Through a structured survey of educators, the research finds generally positive teacher attitudes toward e-learning, noting increased flexibility and resource access. However, it highlights concerns about diminished interpersonal interaction and varying levels of student engagement. The authors conclude that bolstering teacher training and fostering effective interactive strategies are essential to maximize e-learning's positive impact.
- **Kisanga (2016)**, conducted a study on titled “Determinants of Teachers' Attitudes Towards E-Learning in Tanzanian Higher Learning Institutions,” explores the factors shaping educators' perceptions of digital learning. The study aims to identify how demographics, computer exposure, and infrastructure influence attitudes toward e-learning. By surveying 258 teachers across four institutions through questionnaires and documentary analysis, it evaluates associations using SPSS and chi-square tests. Findings reveal predominantly positive attitudes, with computer exposure significantly enhancing receptivity. However, barriers—including poor infrastructure, financial constraints, limited technical support, and resistance to change—impede adoption. The study concludes that sustained e-learning success requires targeted training, improved infrastructure, and strategic support to strengthen positive factors and address obstacles.

- **Sebnmen (2015)** Conducted a study on titled “Gender Differences in Student Attitudes Towards E-Learning,” examining how male and female students vary in perceived usefulness, ease of use, engagement, satisfaction, and computer self-efficacy. Using survey data and statistical analysis, the study finds that while both genders hold generally positive attitudes toward e-learning, males often report greater self-efficacy and task-oriented perspectives, whereas females show higher satisfaction and social engagement. Conclusions highlight that gender plays a nuanced role—some variables differ significantly, while others remain similar. The authors recommend integrating gender-sensitive design elements—like social interaction features, supportive feedback, and customizable interfaces—to enhance e-learning inclusivity and effectiveness.
- **Suri and Sharma (2013)**, Conducted a study on titled “Gender Differences in Attitudes Towards E-Learning Among College Students,” examine how male and female students perceive e-learning in Indian higher education. The study aims to identify whether gender plays a significant role in shaping attitudes toward e-learning, focusing on aspects like ease of use, usefulness, motivation, and interaction. Through a comparative analysis of survey data, the study found that while both genders displayed positive attitudes, male students were more confident in using technology, whereas female students preferred collaborative and supportive environments. The authors conclude that gender-responsive e-learning strategies are essential for equitable and effective digital education.
- **Bhuvaneswari and Padmanaban (2012)**, Conducted a study on titled “Attitude towards E-Learning of Secondary Students of Delhi,” investigate secondary school learners’ perceptions of online education in Delhi. The study aims to evaluate students’ attitudes in terms of usability, flexibility, motivation, and engagement. Utilizing a structured questionnaire administered across diverse Delhi schools, results indicate generally positive attitudes, with students appreciating the convenience, multimodal learning resources, and self-paced opportunities offered by e-learning. However, challenges like inconsistent access to technology, limited teacher facilitation, and lack of interaction occasionally hinder full engagement. The study concludes that

bolstering infrastructure, enhancing teacher support, and integrating interactive features are key to realizing e-learning's potential.

- **Salmon (2011)**, in her influential book "E-Moderating: The Key to Teaching and Learning Online," presents a structured framework for effective online teaching through the role of the e-moderator. The objective is to guide educators in facilitating active and meaningful online learning by using the Five-Stage Model, which includes access, motivation, online socialization, information exchange, knowledge construction, and development. Drawing from extensive research and practice, Salmon emphasizes the importance of learner support, scaffolding, and interactivity in virtual environments. The book concludes that successful online learning hinges on skilled e-moderation, combining pedagogical expertise with digital fluency to foster student engagement and learning outcomes.
- **Clarke (2008)**, Conducted a study on titled "E-learning as an Alternative to Managing Constraints in Accessing Education," explores how digital learning addresses barriers like distance, fixed schedules, and scarce resources. The study aims to assess whether e-learning can democratize access by overcoming geographic, temporal, and infrastructural limitations. Drawing on global case studies and theoretical insights, Clarke finds that e-learning expands educational reach, increases convenience, and accommodates diverse learner needs. However, its success hinges on positive attitudes from educators and learners, effective ICT infrastructure, and supportive institutional policies. The study concludes that while e-learning is a viable solution to access constraints, it requires comprehensive support systems to thrive.
- **Elina and Erkki (2007)**, Conducted a study on titled "Students' Attitudes on E-Learning, Learning Skills and Institutional Support: A Study at the University of Joensuu, Finland," investigate how students' digital competencies and university backing shape attitudes toward e-learning. The study aims to assess relationships among prior experience, learning skills, quality of institutional support, and satisfaction with e-learning. Using survey data, it finds that higher levels of training and support significantly correlate with more positive student perceptions. Additionally, students with stronger learning skills appreciate e-learning more, even if they find it demanding. The

authors conclude that effective institutional training and robust support systems are essential to enhance digital learning receptivity.

- **Selim (2007)**, Conducted a study on titled “Critical Success Factors for E-learning Acceptance: Confirmatory Factor Models,”. It aims to identify key factors influencing students’ acceptance of e-learning systems. Using confirmatory factor analysis, the study validates a model comprising factors like instructor characteristics, technology quality, course content, and learner attitudes. The objective is to provide empirical evidence for designing effective e-learning environments. The findings confirm that instructor quality, interactivity, and technology infrastructure significantly affect user acceptance. The study concludes that recognizing these critical factors is essential for successful e-learning implementation, offering a valuable framework for institutions aiming to enhance online education effectiveness and learner satisfaction.
- **Huang and Liaw (2005)**, Conducted a study on titled “Exploring Users’ Attitudes and Intentions Toward E-learning,” investigate the psychological and perceptual factors influencing learners’ acceptance of e-learning. The primary objective is to examine how users’ attitudes, perceived usefulness, and ease of use impact their intention to adopt e-learning systems. Through empirical analysis, the study finds that positive attitudes and perceptions significantly correlate with the intention to use e-learning technologies. The authors conclude that successful e-learning adoption depends on enhancing users’ motivation and system usability. Their research offers important insights for educators and developers aiming to design user-centred and engaging e-learning environments.

## 2.3 Research Gap

While numerous studies examine attitudes toward e-learning, gaps remain in understanding long-term attitude shifts post-pandemic, cross-cultural variations, and the role of emerging technologies like AI in shaping perceptions. Few studies use

mixed methods or longitudinal designs, limiting comprehensive insights into the evolving dynamics of e-learning acceptance and effectiveness.

# **CHAPTER-3**

## **RESEARCH METHODOLOGY**

# Research Methodology

## 3.1 Introduction:

Research design sets up a framework for the methodology and procedure to be followed by a researcher in order to achieve the objectives of the study. It is the first step that is planned before the research commences and executed at the time of actual research work.

“Design of the study is a way to systematically investigate the research problem. It bites various steps in the conduct of the research in a systematic and logical way. It provides details regarding what, where, when, how much, and which means of inquiry were concerned in the study” (Best and Kahn, 1997).

According to Kerlinger (1964), “Research Design is the plan, the structure, and the strategy of investigation conceived so as to obtain answers to research questions and to control variance. It includes an outline of everything the investigator will do from writing the hypotheses and their operational implications to the final analysis of data. Research designs are invented to enable the researcher to answer research questions as validly, objectively, accurately, and economically as possible. Any research plan is deliberately and specifically conceived and executed to bring empirical evidence to bear on research problems”.

Teacher's Attitude toward E-learning depends upon knowledge, values, physical characteristics, and environmental influences. Lack of awareness of personal characteristics, knowledge, and limited experience combined to produce a negative attitude and less interest. Knowledge of information and communication technology is only one of the requirements for a positive attitude toward E-learning. Nowadays online learning is playing a major role in delivering knowledge at all levels whether primary, secondary, vocational, or higher education. The main purpose of this study is to know the attitude of secondary school teachers towards E-learning.

### **3.2 Methodology:**

The purpose of any research methodology is to provide a maximum amount of information relevant to the problem under investigation at a minimum cost. In fact, methodology is the prerequisite of any research. Although there are several methods of conducting research the selection of research method depends on the nature of the research problem after the analysis of the nature of the study and a detailed review of the related literature, the researcher ascertained that the Survey method is most suitable for the present study whose nature is descriptive.

The descriptive method of research has been employed for the study as this method is concerned with surveys. The Descriptive survey research method was adopted primarily due to the fact that it is one of the most commonly used means of investigation that attempts to describe and interpret what exists in the present phenomena in terms of practices, beliefs, attitudes, conditions, processes, trends, or relationships.

According to Agarwal, Y.D. (2008), “Descriptive research is devoted to the gathering of information about prevailing conditions or situations for the purpose of description and interpretation. This type of research method is not simply collecting and tabulating facts but includes proper analyses, interpretation, comparisons, identification of trends and relationships.”

#### **3.2.1 Population:**

According to Lindquist (1953), “A population may be defined as any identifiable group of individuals or as any collection or aggregate of comparable measures. Population may be either finite or infinite, either real or hypothetical. A finite population is one, all members of which may be counted. An infinite population is one of unlimited size. For example, all possible weights of eight-year-old children in this country would constitute an infinite population. While the actual weights of the eight-year-old children now living in this country would constitute a finite population”.

The population used for the study comprised the Pre-service Teachers of the Central Government as well as State Government institutes of Koraput District.



### 3.2.2 Sample:

According to Kaul, (1984), “Sampling is the process by which a relatively small number of individuals or measures of individuals, objects or events is selected and analysed in order to find out something about the entire population from which it was selected”.

The representative proportion of the population is called a **sample**. A researcher selects a sample of units from the sampling frame; the process of such selection is called **sampling**. In order to serve a useful purpose, sampling should be unbiased or representative. A random sampling technique was used for this study. A total of 55 pre-service teachers from two institutes were selected for the study.

**Table 3.1 Shows total number of male and female selected pre-service teachers**

SI. No.	Gender	No. of Pre-service Teachers
1	Male	N=27
2	Female	N=28

**Table 3.2 Shows total number of pre-service teachers selected from Central & State Government Institute**

Types of Institutes	No. of Pre-service Teachers
Central Government Institute	N=28
State Government Institute	N=27

### 3.2.3 Tools and Techniques:

For the collection of data, the researcher may choose different types of devices as per the requirement of the study, these devices are called ‘Tools’ or ‘Instruments’. The tools may be standardized or self-developed. The researcher has to select tools and techniques for data collection, carefully and judiciously.

A researcher might make use of standardized readymade tools or may develop his/her own tools, ensuring that the tools developed are reliable and valid so that the data obtained through these tools is also reliable and valid.

Tools of data collection are instruments like rating scales, checklists, questionnaires, attitude scales, etc. Whereas, the techniques of data collection are the process, through which the data are obtained.

### **3.2.3.1 Description of Tool-**

The tool was prepared by the investigator to know the attitude of the pre-service teachers towards E-learning. In the present study Attitude scale towards E-learning was used for this study. The researcher used self-developed tools for the study. A quantitative method was used to collect data. The attitude scale was divided into two sections. Section- 1 was used to know the background information of the pre-service teachers, and Section - 2 was related to the attitude toward E-learning consisting of 24 statements. Each was rated on a five-point Likert scale. Whereas, for positive statements 5 =Strongly Agree, 4 = Agree, 3 = Neutral, 2= Disagree and 1= Strongly Disagree.

### **3.2.4 Procedure of Data Collection:**

In the process of data collection, the investigator distributed the Likert scale which is the attitude towards E-learning individually to the respondents (Pre-Service Teachers). Person-to-person contacts were made and each individual was separately asked to understand the instruction carefully, and if necessary, by asking the investigator in case he/she felt difficulty in answering the written material. A diary was maintained for noting the names of pre-service teachers and their institutions. Pre-service teachers were generally contacted during the working hours of the institutions.

### **3.2.5 Data analysis**

Statistical techniques used in research are methods for collecting, analyzing, interpreting, and presenting numerical data. This helps researcher draw valid conclusions and make informed decisions based on data. The collected data were analyzed by statistical techniques mean and standard deviation (SD) and t-test.

**Mean:** The mean is the average of a set of values, calculated by dividing the sum of all values by the number of values.

**Standard Deviation:** Standard deviation is a measure of the amount of variation or dispersion in a set of values.

**T-test:** T-test is a statistical test used to compare the means of two groups to determine if they are significantly different from each other.

## **CHAPTER-4**

# **DATA ANALYSIS AND INTERPRETATION**

# **Data Analysis and Interpretation**

## **4.1 Introduction**

The present chapter deals with the analysis and interpretation of the collected data. Analysis of the data means studying the organized material in order to discover the inherent facts in the research work. The analysis and interpretation of the collected data for a study are more important in order to draw a conclusion. The data as such has no meaning unless it is analysed and interpreted by suitable methods. Analysis of data means studying the tabulated material in order to determine the inherent facts or meaning. It involves breaking up complex facts into simpler parts and putting them into new arrangements for the purpose of interpretation. The analysis and interpretation of data collected is a process that would make a research study significant and of great value to be mentioned. The findings of the study help in deciding and implementing the further course of action. Data interpretation is the application of the statistical procedure to analyse specific observed or assumed facts from a study. For the data interpretation, it is crucial to understand the measurement of scale and decide which statistical approach is required to be followed by the researcher based on the research objective set.

The present study entitled, “Attitude of Pre-Service Teachers Towards E-Learning” is based on descriptive method. The major aim of the study is to assess the attitude of pre-service teachers towards E-learning. The relevant statistical techniques like mean, standard deviation, and t-test were worked out for the testing of hypotheses pertaining to all the objectives. The hypothesis was tested at a significant level of 0.05.

## **4.2 Objective wise analysis and interpretation of data**

In this study, the researcher has formulated objectives and to achieve these objectives two hypotheses were framed.

### **Objective-1**

To study the attitude of pre-service teachers towards E-learning.

**Table No. 4.1 shows analysed data of the attitude of pre-service teachers towards e-learning.**

Interpretation	No. of pre-service teachers	Percentage (%)
<b>High attitude towards e-learning</b>	46	83.63
<b>Moderate attitude towards e-learning</b>	08	14.54
<b>Low attitude towards e-learning</b>	01	01.81

**Figure 4.1 shows analyzed data of the attitude of pre-service teachers towards e-learning**

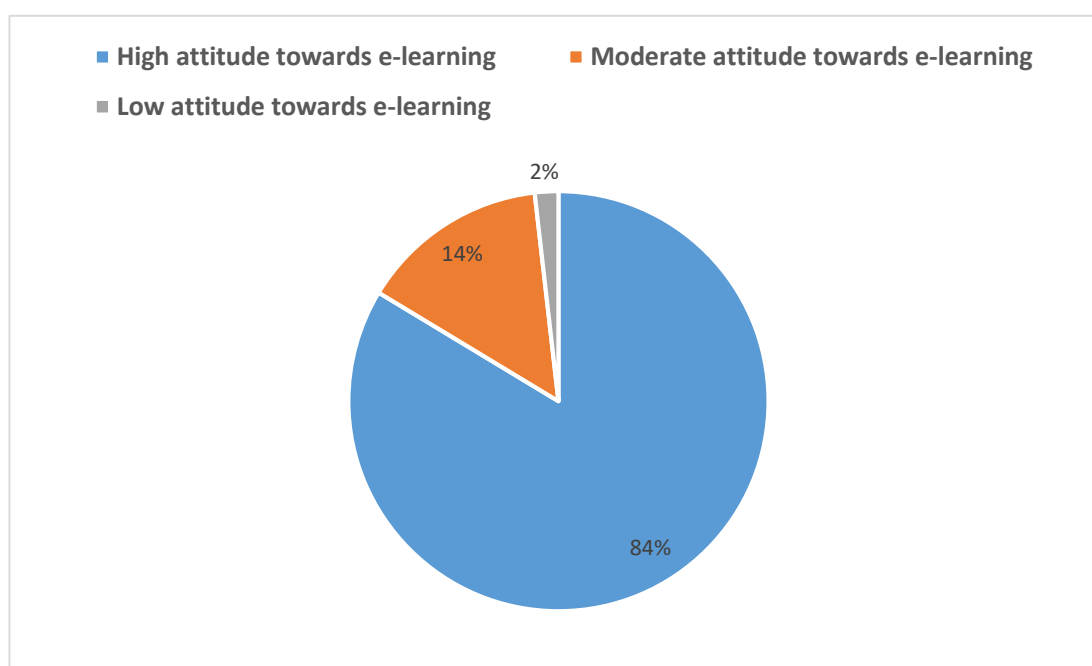


Table and figure 4.1 depict the attitude of pre-service teachers towards e-learning. After analysis of sampled data of 55 pre-service teachers, researcher was found that 83.6 percent pre-service teachers show high attitude towards E-learning, while 14.54 percent pre-service teachers show moderate attitude towards E-learning and 01.81% pre-service teachers showed low attitude towards e-learning. If, we analyses data on the basis overall responses then it can be concluded that there is a high attitude of pre-service teachers towards E-learning.

## Objective-2

To study the attitude of male and female pre-service teachers towards e-learning.

### Hypothesis-1

There is no significant difference in attitude between male and female pre-service teachers towards e-learning.

**Table 4.2: Represents Mean, SD and t-value of Male and female pre-service teachers' attitude towards E-learning.**

Groups	N	Mean	SD	df	Confidence Level	p-value	t-value	Remark
Male	27	87.18	12.53	53	95%	.005	-2.939	Significant
Female	28	94.78	5.39					

**Figure 4.2 Shows graphical representation of Mean of male and female pre-service teachers towards e-learning**

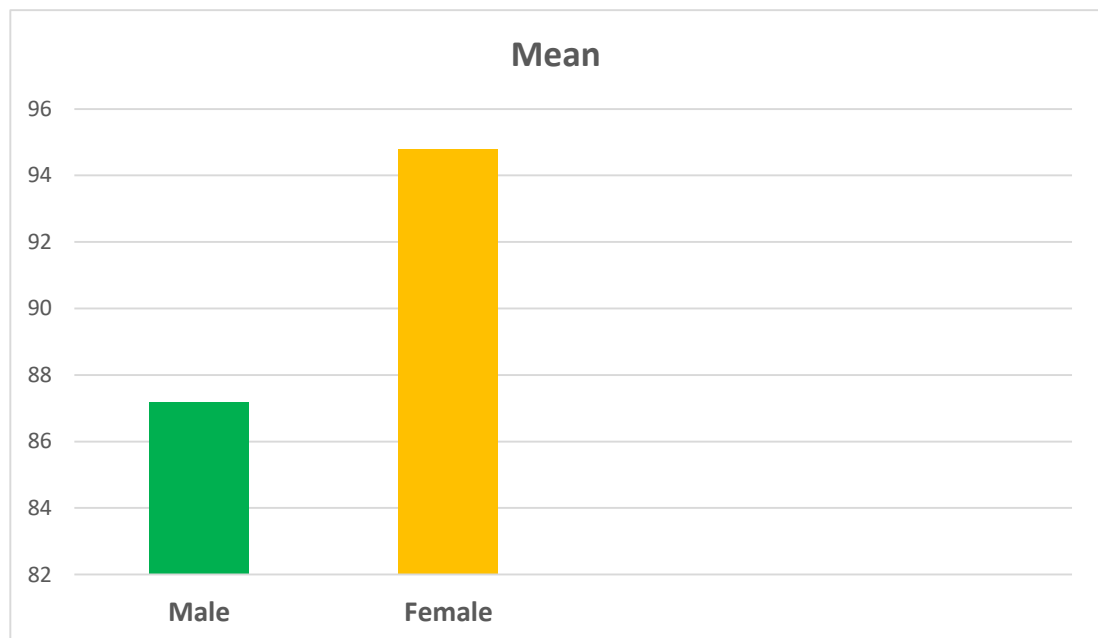


Table 4.2 depicts, SD, and t value regarding the attitude toward E-learning of Pre-Service Teachers. On the basis of the above-tabulated data, we analyzed that, the male

and female teachers have mean values 87.18 and 94.78 respectively. Whereas, the standard deviation of male and female pre-service teachers is 12.53 and 5.39 respectively. It is evident that the calculated t-value at 53 degrees of freedom is -2.939 and the tabulated t-value at the same df and 0.05 level of significance is 1.674. As we observed that the calculated t-value exceeds from tabulated t-value, therefore, we can say that the calculated t-value is significant at a 0.05 level of significance. So, the null hypothesis, that there is no significant difference in attitude between male and female pre-service teachers towards e-learning is not accepted. So, it can be concluded that male pre-service teachers having less positive attitude toward e-learning as compared to their counterpart female pre-service teachers.

### **Objective-3**

To study the attitude of central government and state government pre-service teachers towards E- learning.

### **Hypothesis-2**

There is no significant difference in attitude between Central Government and state government pre-service teachers towards E-learning.

**Table 4.3: Shows Mean, SD and t-value of Central Government and State Government pre-service teachers with reference to E-learning attitude.**

<b>Groups</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>df</b>	<b>Confidence Level</b>	<b>p-value</b>	<b>t-value</b>	<b>Remark</b>
<b>Central Government</b>	<b>28</b>	<b>93.32</b>	<b>7.363</b>	<b>53</b>	<b>95%</b>	<b>.095</b>	<b>1.700</b>	<b>Not Significant</b>
<b>State Government</b>	<b>27</b>	<b>88.70</b>	<b>12.262</b>					



**Figure 4.3 Shows graphical representation of Mean of Central government and State Government Pre-service teachers towards e-learning**

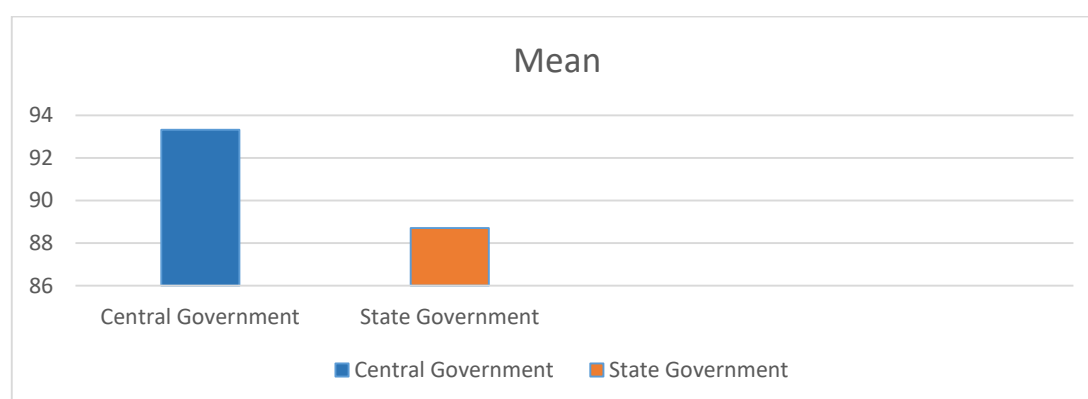


Table and graph 4.3 depicts the mean, SD, and t value regarding the attitude toward E-learning of Pre-Service Teachers. On the basis of the above-tabulated data, we analyzed that, the central government and state government institutes' pre-service teachers had mean values 93.32 and 88.70 respectively. Whereas, the standard deviation of central government and state government pre-service teachers is 7.36 and 12.26 respectively. It is evident that the calculated t-value at 53 degrees of freedom is 1.70 and the tabulated t-value at the same df and 0.05 level of significance is 1.96. As we observed that the calculated t-value is less than the tabulated t-value, therefore, we can say that the calculated t-value is not significant at a 0.05 level of significance. So, the null hypothesis is accepted, that there is no significant difference in attitude between central government and state government institutes' pre-service teachers towards e-learning is accepted.

### 4.3 Conclusion:

The following conclusions are drawn from the above analysis and interpretation of the data:

- There is a high attitude of pre-service teachers towards e-learning.
- The male pre-service teachers having less positive attitude toward e-learning as compared to female pre-service teachers.
- The Central Government Institutes' pre-service teachers and State Government Institutes' pre-service teachers having a difference in attitudes but it is evident that there is no significant difference in both types of Institutes.

**CHAPTER 5**  
**FINDINGS, CONCLUSION AND**  
**SUGGESTIONS**

# **Findings, Conclusion and Suggestions**

## **5.1 Introduction:**

This chapter provides a concise overview of the research, its findings, and the conclusions derived from various analyses. It is succeeded by the educational implications derived from the results of the current study. Suggestions for future research in related fields are also included. In recent years, e-learning has gained prominence and is increasingly accepted as an alternative method for pursuing higher education (UNESCO 2009). Educators are crucial to the successful incorporation of e-learning in education. This significantly influence students' perceptions and the overall transformation of educational practices. The primary objective is to make the teaching and learning experience both enjoyable and memorable. The contemporary education system promotes the cultivation of diverse learning strategies to enhance learners' potential. There is a pressing need for a more structured and systematic approach to instruction to achieve this educational objective.

## **5.2 Statement of the Problem:**

**“A STUDY ON ATTITUDE OF PRE-SERVICE TEACHERS TOWARDS E-LEARNING”**

## **5.3 Delimitation of the Study:**

- This study is restricted to Koraput District Only.
- Pre-service teachers were included in the present study.
- One of each from Central Government and State Government teacher education institution were included in this study.

## **5.4 Objectives of the Study:**

For the successful completion of the study, the following objectives were formulated.

1. To study the attitude of pre-service teachers towards E-learning.
2. To study the attitude of male and female pre-service teachers towards E-learning.

3. To study the attitude of Central Government and State Government pre-service teachers towards E-learning.

## 5.5 Hypothesis of the Study:

**Ho1:** There is no significant difference in attitude between male and female pre-service teachers towards e-learning.

**Ho2:** There is no significant difference in attitude between Central Government and state government pre-service teachers towards E-learning.

## 5.6 Research Methods:

The descriptive method of research will be employed for the study. The Descriptive survey research method was adopted primarily due to the fact that it is one of the most commonly used means of investigation that attempts to describe and interpret what exists in the present phenomena in terms of practices, beliefs, attitudes, conditions, processes, trends, or relationships.

## 5.7 Sample of the Study:

A random sampling technique was used for this study. The sample includes two teacher education institutes. A total of 55 pre-service teachers from two different institutes were selected for the study in which both male and female pre-service teachers were selected.

S.I. No.	Gender	No. of Pre-service teachers
1	Male	27
2	Female	28

Types of Institutes	Central Government	State Government
No. of Pre-service teachers	N=28	N=27

## **5.8 Tools used for data collection:**

In the present study, the **E-learning Attitude Scale** was used for this study. The researcher used self-developed tools for the study. A quantitative method was used to collect data. The tool was prepared, and statements were constructed by the investigator to know the attitude of the pre-service teachers towards E-learning.

## **5.9 Procedure for Data Analysis:**

To know the attitude of pre-service teachers towards E-learning, the data were analyzed with the help of sources of data collected from the teacher education institutes. For testing of hypothesis Mean, Standard deviation, and t-test are drawn.

## **5.10 Findings of the Study:**

- There is a high attitude of pre-service teachers towards E-learning.
- The male pre-service teachers having less positive attitude toward e-learning as compared to female pre-service teachers.
- The Central Government Institutes' pre-service teachers and State Government Institutes' pre-service teachers having a difference in attitudes but it is evident that there is no significant difference in both types of Institutes.

## **5.11 Suggestions for further research studies:**

- This study may further be extended by increasing the sample size.
- This study may further extended to college students from different courses.
- This study may further be extended by taking variables like age, and subject.
- This study may further extend to measure the influence of E-learning on students' achievement.
- This study may further extend to teachers or lectures.
- This study may further extend to school students.
- This study may further extended by examining how e-learning affects the teaching learning process.
- This study may further extended to examine how e-learning affects students' metacognition.

## **5.12 Educational Implications:**

Educational implications of the present study are as following:

Education is facing the challenge of technological advancement and educational innovations. E- Learning has shown great potential in bridging the gap between these two ends. The findings of this study show that the attitude of pre-service teachers towards e-learning is positive. E-learning development is not just about the technology. It is also about supporting the learner's journey. Paradigms such as "just-in-time" and "at own pace" learning, student-centred, and collaborative approaches have emerged and are supported by technological advancement.

- E-learning enables pre-service teachers to represent information using several different media in meaningful ways.
- E-learning can help pre-service teachers to take into account different learning styles, because some students learn by interpreting text, while others require more graphical representation.
- E-learning and multimedia helps in the development of higher-order thinking skills.
- Interactive multimedia encourages learners to seek information, apply knowledge, and re-attempt tasks that are associated with higher-order thinking skills.
- E-learning can bridge language barriers since audio is not the only means of communication.
- E-learning allows for self-pacing and discovery.
- E-learning provides learners the flexibility of anywhere-anytime learning.
- E-learning helps learners to learn the content in a given discipline. It helps learners to think effectively and practice problem-solving and decision-making.

## **5.13 Conclusion:**

The present study investigated the attitudes of pre-service teachers towards e-learning, a critical component of modern education. The analysis revealed that pre-service

teachers generally held a positive attitude towards e-learning, recognizing its potential to enhance accessibility, flexibility, and self-paced learning. Many participants appreciated the role of technology in making learning more interactive and convenient, especially during disruptions like the COVID-19 pandemic.

However, the study also highlighted a few reservations. Some pre-service teachers expressed concerns about reduced personal interaction, technical difficulties, and lack of digital infrastructure, especially in rural or under-resourced areas. The findings showed that gender and type of institution had minimal but notable influences on attitudes, indicating the need for inclusive training that addresses diverse backgrounds and learning contexts.

Overall, the study underscores the importance of integrating e-learning tools and strategies into teacher education programs. Building digital competency, offering hands-on experience, and ensuring infrastructure support can enhance the preparedness of future teachers to adopt e-learning confidently and effectively. The positive inclination of pre-service teachers suggests a readiness to embrace digital education, provided they are equipped with the right skills and support.

In conclusion, while e-learning is not without its challenges, its benefits are widely acknowledged. As education continues to evolve in the digital age, fostering favourable attitudes and practical competence among pre-service teachers is essential. Future research could focus on longitudinal studies and the impact of real-time e-learning experiences on teaching practices and student outcomes.

## **BIBLIOGRAPHY**



## Bibliography

Alasmari, A. (2022). Attitudes of public-school teachers towards e-learning in Saudi Arabia. *Arab World English Journal, (2nd Special Issue on COVID-19 Challenges, 2)*, 245–257. <https://doi.org/10.24093/awej/covid2.16>

Chandwani, H., Sharma, N., & Kumar, V. (2021). Attitude of faculty towards online teaching and learning in relation to certain variables: A study during COVID-19 pandemic in India. *International Journal of Multidisciplinary Educational Research, 10*(1), 1–11.

Doley, P.D., (2020). A study on B.Ed. Trainee's attitude towards E-learning. *Quest Journals Journal of Research in Humanities and Social Science. 8*(12) (2020) pp: 25-29. B2601121014-libre.pdf

Ishmirekha, K.H., (2017). A study of college students towards e-learning with special reference to North Lakhimpur of Lakhimpur district, Assam. *International Journal of Information and Science and Education. Volume 4. No. 1*(2017) pp 1-9. ijisev4n1\_01-libre.pdf

Priyanto, S. H., Wibowo, A., & Nugroho, H. (2017). The effects of social environment and mechanisms on e-learning acceptance through TAM variables. *Journal of Theoretical and Applied Information Technology, 95*(20), 5422–5430.

Thakkar, V., & Joshi, H. (2017). Teachers' perception about e-learning and its impact on students. *International Journal for Research in Engineering Application & Management, 3*(4), 61–65.

Kisanga, D. (2016). Factors influencing teachers' attitudes towards e-learning in Tanzanian higher learning institutions. *International Review of Research in Open and Distributed Learning, 17*(5), 109–125. <https://doi.org/10.19173/irrodl.v17i5.2726>

- Sebnmen, Z. (2015). Gender differences in student attitudes towards e-learning. *Procedia - Social and Behavioral Sciences*, 176, 735–740.
- Suri, G., & Sharma, S. (2013). Gender differences in attitudes towards e-learning among college students. *Indian Journal of Educational Studies*, 1(1), 14–19.
- Bhuvaneswari, K., & Padmanaban, T. (2012). Attitude towards e-learning of secondary students of Delhi. *Journal of Educational Technology*, 9(3), 35–42.
- Krishnakumar, R., & Rajesh, M. (2011). Attitude of teachers of higher education towards e-learning. *Journal of Education and Practice*, 2(4), 48–53.
- Liaw, S. S., & Huang, H. M. (2011). A study of investigating learners' attitudes toward e-learning. *Proceedings of the 5th International Conference on Distance Learning and Education*, 12, 28–32.
- Salmon, G. (2011). *E-moderating: The key to teaching and learning online* (3rd ed.). Routledge.
- Clarke, T. (2008). E-learning as an alternative to managing constraints in accessing education. *Teaching and Teacher Education*, 24(6), 1465–1476.  
<https://doi.org/10.1016/j.tate.2007.11.011>
- Elina, M., & Erkki, K. (2007). Students' attitudes on e-learning, learning skills and institutional support: A study at the University of Joensuu, Finland. *Educational Technology & Society*, 10(2), 134–146.
- Selim, H. M. (2007). Critical success factors for e-learning acceptance: Confirmatory factor models. *Computers & Education*, 49(2), 396–413.  
<https://doi.org/10.1016/j.compedu.2005.09.004>

## **APPENDIX**

# E-learning Attitude Scale

## Attitude of Pre-service teacher 's towards E-learning



Kindly fill up the following information.

Name of the Student-Teacher: .....

Gender: Male/Female: .....

Programme of Study: .....

Name of Educational Institute: .....

### Instructions

The objective of the scale is to know the attitude of the Pre-service teachers towards E-learning. There are 5 options for each statement i.e. Strongly Agree (SA), Agree(A), Neutral(N), Disagree(D), Strongly Disagree (SD). You are requested to tick mark the appropriate one according to your own view. No answer is right or wrong. This is purely personal opinion. Your answer will be kept confidential and will be used for research purpose only.

**Regional Institute of Education, Bhopal**

**(National Council of Educational Research and Training)**

**Shyamla Hills, Bhopal-462013, Madhya Pradesh**

SI No	Statements	Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)
1	E-learning helps me improve my teaching skills.					
2	E-learning enhances my learning experience.					
3	E-learning can play an important role in the classroom.					
4	I believe e-learning will be useful for my future teaching career.					
5	E-learning allows for better understanding of concepts.					
6	I find e-learning platform easy to use.					
7	I find it easy to submit assignments and complete activities on e-learning platforms.					
8	E-learning is best used for drill, remediation or					

	reinforcement of facts.					
9	I feel motivated to learn using e-learning tools.					
10	E-learning makes learning more enjoyable and engaging.					
11	I actively participate in discussions and activities on e-learning platforms.					
12	I prefer e-learning over traditional face-to-face learning.					
13	I am confident in using learning tools effectively.					
14	I have the necessary digital skills to use e-learning platforms.					
15	E-learning is best used in the classroom to promote student's analytical, creative					

	and other higher order thinking skills.					
16	E-learning can be used in the classroom to provide alternative learning approaches for students who are having difficulty in learning.					
17	Through e-learning it is easy to access to study materials. (Open Educational Resources)					
18	Poor internet connectivity affects my e-learning experience.					
19	Lack of access to device (Computer/Smart Phone) limits my e-learning participation.					
20	I find it difficult to stay focused					

	during e-learning sessions.					
21	I feel that technical issues discourage me from using e-learning.					
22	I have positive attitude towards e-learning.					
23.	I believe e-learning is an effective way of learning.					
24	I would recommend e-learning for future teacher training programmes.					