

**EFFECTIVENESS OF E-LEARNING STRATEGIES
USED AT HIGHER EDUCATION LEVEL**

BY

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By

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NATIONAL UNIVERSITY OF MODERN LANGUAGES FACULTY OF SOCIAL SCIENCES

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The undersigned certify that they have read the following thesis, examined the defense, are satisfied with the overall exam performance, and recommend the thesis to the Faculty of Social Sciences for acceptance.

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Candidate of **Master of Philosophy** at the National University of Modern Languages do hereby declare that the thesis "**Effectiveness of E-learning Strategies used at Higher Education level**" submitted by me in partial fulfillment of M.Phil degree, is my original work, and has not been submitted or published earlier. I also solemnly declare that it shall not, in future, be submitted by me for obtaining any other degree from this or any other university or institution.

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ABSTRACT

Thesis Title: “Effectiveness of E-learning Strategies used at Higher Education level”

Current research was conducted to check out the effectiveness of e-learning teaching strategies used at higher education level and also to check out the effect of e-learning teaching strategies on teaching learning experience of teachers at higher education level. In current study quantitative research approach and descriptive research design was used. Population of the study was 319 teachers in common departments (Education, Economics and Masters in Business Administration) in public sector universities of Rawalpindi and Islamabad. Sample of the study was selected according to the Krejcie and Morgan (1970) table for sampling that was 175 teachers. Two tools were adapted for data collection. First one was related to e-learning teaching strategy Seven principles of good practice were given by the Chickering and Gamson (2016) have seven dimensions and second one was related to teaching learning experience, community of inquiry and it was given by Garrison, Anderson and Archer (2008) have three dimensions. Proportionate stratified random sampling technique was used for data collection. Data analyzed through statistical tests first one was Mean and second one was linear regression test. According to the major findings, results shown that teachers were agreed with seven dimensions of the e-learning teaching strategies. According to the findings of the study “Emphasizes time on task” was the most effective e-learning teaching strategy. Results shown that “teaching presence” was the most important factor for effective teaching learning experience of teachers. The result also has shown that e-learning teaching strategies had significance effect on teaching learning experience of teachers. According to the teachers of economics department e-learning teaching strategies 36.6 % effect on teaching learning experience of teachers at higher education level. It is recommended that administration may conduct the workshops for their faculty members and also teach them about effective e-learning teaching strategies like “emphasize time on task” and “communication high expectations” and also give them awareness about e-learning teaching strategies have significance effect on teaching learning experience of teachers.

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LIST OF ABBREVIATIONS

HEC	Higher education commission
SP	Social presence
CP	Cognitive presence
TP	Teaching presence
EIST	Encouraging Interaction Between Students and Teaching Staff
DRCS	Developing Reciprocity and Cooperation Among Student
EACML	Encouraging Active, Contextual and Meaningful Learning
GPF	Giving Prompt Feedback
ETT	Emphasizing Time on Task
CHE	Communicating High Expectations
RDTWL	Respecting Diverse Talents and Ways of Learning
NU2	National university of modern languages
IU1	International Islamic university Islamabad
FU1	Fatima Jinnah women university
AU2	Arid Agriculture university Rawalpindi

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DEDICATION

I dedicate my work to my mother

Safia Mukhtar

My father

Mukhtar Ahmad (Late)

My husband

Imran Farooq

And my beloved daughter

Mehar Fatima

She always gives me positive motivation in my life.

CHAPTER 1

INTRODUCTION

1.1 Background of the Research

There are different professions existing in the world. Among all those, the most respectable and noble profession is teaching at all over the world. Teaching profession needs certain methods, skills, and strategies for teaching like other professions in the world. For an effective teaching it is more important to select some effective methods, strategies, and techniques of teaching. In the teaching profession, there is no any fix method, skill, technique and strategy. It varies teacher to teacher and also every teacher selects his/her strategy for teaching (Anderson, 2004). Day by day the teachers use different strategies for teaching especially in e-learning. In these days, teaching-learning processes have changed from face-to-face teaching into the online teaching. In online teaching, medium of instruction involves in teaching is electronic and it is used as way of communication in teaching-learning process. In 21st century, there is need to learn new skills and technologies especially for educational technologies (Onyema & Deborah, 2019). After introducing different and new electronic educational technology as well as different teaching strategies, the teaching-learning process becomes more effective in all over the world.

Most of the time the term e-learning is used for information about the network and technology related to communication. E-learning is a broader term than the online learning, distributed learning and virtual learning. In e-learning, “E” word referred to the “electronic” and it shows that all educational activities those have link with electronic devices for example computer and internet comes under the umbrella term of e-learning. Different terms have been used to explain the mode of education through the technology for example virtual learning, blended learning and online learning (Selim, 2007). These all terms are explained in the educational process through the educational technology. These all terms are divided into two parts: first one is synchronous and second is asynchronous. These terms are not used at the same time and also do not have the same meanings. Electronic learning has synchronously as well as asynchronously. In these terms, instructions can be delivered individually or can be delivered into the group. In electronic learning, teacher and student interaction held at the same time that is called synchronous

learning. However, on the other hand interaction of instructor and learner that do not held at the same time called asynchronous learning. In asynchronous process teacher uploads the lectures or reading materials even assessments on 'Learning Management System (LMS) or any other electronic source. By the use of any asynchronous tool, students can check their lectures and recordings according to their convenience. In e-learning computer and other electronic devices are used to complete the online educational processes (Ghirardini,2011). Through e-learning, different skills can be learnt for example cognitive skills, psychomotor skills and interpersonal skills. In cognitive skills, knowledge and comprehension skills along and methods for solving the problems are part of it. In e-learning these skills can be improved through the uses of technology. Interactive cognitive learning is possible in e-learning mode. Instructor and learner both can use their cognitive skills with the help of technology to improve their learning. In e-learning different psychomotor skills can be used for improvement in any activity. Instructor gives instructions to their students, and they do those activities to improve their different skills. Interpersonal skills are also used to improve in e-learning for example teacher gives any activity of role playing to the students. Students do activities and then send to the teachers through the e-learning process. Teachers send feedback to the learners in reply. This is important for learner that teacher or instructor gives the feedback on time, and that on time feedback improves the skills of the learner. Different online activities improve different skills of the learners and as well as of the instructors. Instructor plays an important role of facilitator and guideline provider to the students in e-learning process (Ghirardini, 2011).

Education sector faces many problems during the pandemic situation of Covid-19 across the world, especially in under developing as well as undeveloped countries (World Health Organization, 2020). Education sector in Pakistan faced many problems related to online education. All educational institutes were closed just because of Covid-19. Higher education commission tried to continue the educational process and shifted it from face-to-face learning towards the online learning mode. Online education has many positive as well as some lacks in developing countries for example in a country like Pakistan. In pandemic situation it is very difficult for any country to shift the whole educational system from face-to-face learning to online learning especially in undeveloped countries or under developing countries like Pakistan. Undeveloped and under developing countries are not

well planned and well trained for the shifting of educational system from one mode to another especially in short time of period (Mahmood, 2020). One of the problems was the lack of technological information and also use of the modern technology was another big issue. Teachers and other staff were also not well trained in IT (information technology). In Pakistan there are 177 different institutes of higher education and universities were working in 2020. From the 177, 58% of institutes are belonging from public sector and 42% are from private sector (Khattak, 2020). In Pakistan, all higher educational institutes are working under Higher Education Commission (HEC) After the pandemic situation of covid-19, affected all around the world. Lockdown was the only solution to stop spread of virus. Educational sector faced problems and issues in that situation. In March 2020 government of Pakistan and HEC (Higher Education Commission) took steps to stop the spreading of virus in the country especially related to education sector (Xinhua, 2020). All educational institutes were closed immediately and trying to stop spread of virus. HEC advised to educational institutes to start online education for the students' benefits (Mahmood, 2020). Teachers played an important role in this pandemic situation. They face many challenges related to their teaching. Teachers tried to use different teaching strategies for effective teaching learning process through e-learning. Teaching effectiveness can be judge through different teaching strategies and methods. If the learner achieves something related to the learning and become satisfied from the acquired knowledge at the end, teaching learning process become effective. In traditional methods, there are certain ways to check the effectiveness of teaching but when the situation changes, in e-learning teaching process these methods are not effective. New ways as well as some old methods can be used to check the effectiveness of teaching learning process (Gorsky & Caspi, 2005).

In educational sector, situation was totally changed after the Covid-19. Education sector shifted their mood of education from face to face to online education. Teachers and institutions faced major changes in situation especially after the shifting of online education at higher level. In face-to-face education, teachers have direct interaction with students but in online education teacher student interaction comes possible through the medium of communication mostly technology involved into it. Teachers as well as students must have command on the uses of the technology, especially related to the field of education.

Teaching strategies are somehow different but some of them are same in e-learning mode. Some strategies are effective and some others are less effective. Effective teaching strategies are helpful for the learner to understand better and apply their knowledge effectively. Day by day new researches come at front related to online education and also for the improvement in the e-learning sector. In e-learning, new skills and techniques are requirement of the time. Role of the teacher also was affected after the shifting of educational mode on e-learning and teacher think differently (Bennett & Lockyer, 2004). In new researches the relationship between teacher and student is also in discussion currently. E-learning is student centered system of education. Teacher provides guideline to the students in e-learning mode. Teacher tries to facilitate the students as much as he/she can. Teacher gives the guide line to the students and also facilitates them in uncertain situations during their work. In e-learning, the instructor creates and facilitates the learner to improve the learning capacity also the learners take some different initiatives about their learning experience. In e-learning process teacher helps the students when they need or demand. Teachers facilitate the students through different strategies, through proper communication and effective feedback. Through different ways teacher and, student interact effectively with each other (Baran, Correia, & Thompson, 2013).

E-learning is technology-based learning through different learning portals like, video conferences, YouTube, LMS, Google drive and, other mobile apps used for learning process. E-learning is a way to enhance the knowledge of students, as well as of teachers, staff and other people those who have links with the field of education. Most of the universities are providing education through technology to their students especially during the situation of COVID-19. Different strategies have been used to convey the proper education towards the students. Just because of this pandemic situation educational institutes use different strategies to improve their educational standards. Electronic learning provides the new methods and strategies for delivering online education. In e-learning, teachers used different teaching strategies for effective teaching and learning experience. Teaching strategies are very important in teaching learning process especially in e-learning.

1.2 Rationale of the Study

E-learning teaching strategies are important in teaching learning process. There are different e-learning teaching strategies used by the instructor during their session. The purpose of the study was to check the effectiveness of e-learning teaching strategies as well as their effect on teaching learning experience of teachers at higher education level. E-learning affects the learning of students as well as teaching strategies used by the teachers for course design. In e-learning information technology played an important role to fulfill the needs of the learners (Means, 2010). According to Herie (2005) teachers use instructional practices, those instructional practices must have strong theoretical background then that will be helpful and effective in e-learning mode. In e-learning, IT (information technology) supports teaching strategies also these strategies have the strong link with the learning mode. Filimban (2008) discussed in his study that teaching strategies were much more improved overall in e-learning mode. Technology changes, day by day that is why teaching-learning processes also change with passage of time. Electronic technology involved in education sector especially in teaching process.

E-learning as medium of communication gives opportunity to the students to study at any time and at any place according to their wish and need. Teachers are free from the time bounding situation, and this is the positive aspect of e-learning process. In e-learning, teachers have the opportunity to teach the students from all around the world (Garrison, 2017). In e-learning students learn more effectively. Student learn positive attitude through e-learning strategies. Performance of the students was improved through the e-learning but some students faced some problems related to communication and technology usage (Kirby, 2007). For effective e-learning, there is strong need to review the old as well as new teaching strategies which were used by the instructors. Face to face and online teaching strategies almost same but the way of implementation of these strategies are different. Demonstration creates difference between these strategies. Teacher played an important role in it (Wakefield 2009).

Present research is conducted to check the “Effectiveness of e-learning teaching strategies used at higher education level. On the other hand, it is used to check out the effect of e-learning in teaching strategies of teachers in teaching learning experiences especially experiences of teachers at higher education level. Researcher find the gap in different

researches and analyze that, mostly checked the effect of teaching strategies on students but in this specific research, researcher checked the most effective teaching strategy as well as effect of e-learning teaching strategies on teaching learning experience of teachers.

1.3 Statement of the Problem

Teachers played an effective roll during the teaching learning process. Teachers use different techniques for effective teaching and learning. Instructional strategies used by the instructor in their classrooms. Teaching strategies are important in teaching learning experience especially in e-learning mode. After the review of literature researcher find out that different researches done in e-learning mode. E-learning is an umbrella term; there are different dimensions of e-learning. There were different researches done in e-learning mode like methods of e-learning and problems in e-learning etc.

There is less researches done in e-learning teaching strategies field especially at higher education level in Pakistani contexts. Present research was conducted to determine the effectiveness of e-learning teaching strategies used at higher education level also checked the effect of e-learning teaching strategies on teaching learning experience of teachers at higher education level. The main objective of the research is to assess the most effective e-learning teaching strategies as well as effect of e-learning teaching strategies on teaching learning experience of teachers.

1.4 Objectives of Study

1. To assess the e-learning teaching strategies of teachers at higher education level.
2. To assess the teaching learning experience of teachers at higher education level.
3. To examine the effect of e-learning teaching of teachers on their teaching learning experience at higher education level.
 - 3a. To examine the effect of e-learning teaching strategies of teachers with reference of encouraging interaction between students and teaching staff on their teaching learning experience at higher education level.
 - 3b. To examine the effect of e-learning teaching strategies of teachers with reference of develops reciprocity and cooperation among students on their teaching learning experience at higher education level.
 - 3c. To examine the effect of e-learning teaching strategies of teachers with reference

- of encourages active, contextual and meaningful learning on their teaching learning experience at higher education level.
- 3d. To examine the effect of e-learning teaching strategies of teachers with reference of gives prompt feedback on their teaching learning experience at higher education level.
 - 3e. To examine the effect of e-learning teaching strategies of teachers with reference of emphasizes time on task on their teaching learning experience at higher education level.
 - 3f. To examine the effect of e-learning teaching strategies of teachers with reference of communicates high expectations on their teaching learning experience at higher education level.
 - 3g. To examine the effect of e-learning teaching strategies of teachers with reference of respects diverse talents and ways of learning on their teaching learning experience at higher education level.
4. To examine the effect of e-learning teaching strategies of teachers on their teaching learning experience based on common departments (Education, Economics and MBA/BBA) at higher education level.
 - 4a. To examine the effect of e-learning teaching strategies of teachers on their teaching learning experience based on Education department at higher education level.
 - 4b. To examine the effect of e-learning teaching strategies of teachers on their teaching learning experience based on Economics department at higher education level.
 - 4c. To examine the effect of e-learning teaching strategies of teachers on their teaching learning experience based on Masters in business Administration department at higher education level.

1.5 Research questions

1. What are the e-learning teaching strategies of teachers at higher education level?
2. What is the teaching learning experience of teachers at higher education level?

1.6 Null Hypotheses

H₀₁. There is no significant effect of e-learning teaching strategies of teachers on their teaching learning experience at higher education level.

H₀₁ (a). There is no significant effect of e-learning teaching strategies of teachers with reference of encouraging interaction between students and teaching staff on their teaching learning experience at higher education level.

H₀₁ (b). There is no significant effect of e-learning teaching strategies of teachers with reference of develops reciprocity and cooperation among students on their teaching learning experience at higher education level.

H₀₁ (c). There is no significant effect of e-learning teaching strategies of teachers with reference of encourages active, contextual and meaningful learning on their teaching learning experience at higher education level.

H₀₁ (d). There is no significant effect of e-learning teaching strategies of teachers with reference of gives prompt feedback on their teaching learning experience at higher education level.

H₀₁ (e). There is no significant effect of e-learning teaching strategies of teachers with reference of emphasizes time on task on their teaching learning experience at higher education level.

H₀₁ (f). There is no significant effect of e-learning teaching strategies of teachers with reference of communicates high expectations on their teaching learning experience at higher education level.

H₀₁ (g). There is no significant effect of e-learning teaching strategies of teachers with reference of respects diverse talents and ways of learning on their teaching learning experience at higher education level.

H₀₂. There is no significant effect of e-learning teaching strategies of teachers on their teaching learning experience based on common departments (Education, economics and MBA/BBA) at higher education level.

H_{02a}. There is no significant effect of e-learning teaching strategies of teachers on their teaching learning experience based on education department at higher education level.

H_{02b}. There is no significant effect of e-learning teaching strategies of teachers on their teaching learning experience based on economics department at higher education level.

H_{02c}. There is no significant effect of e-learning teaching strategies of teachers on their teaching learning experience based on Masters in business Administration departments at higher education level.

1.7 Theoretical Framework

The research work aimed to assess the e-learning teaching strategies used by the instructor at higher education level. There are different e-learning strategies used at different levels like at student, teacher, administration, institution and subject level. In this research researcher, focus is on the instructor level teaching strategies used during the online classes.

Theoretical framework of the research was on two theories. First one is related to e-learning teaching strategies Seven Principles for Good Practice developed by Chickering and Gamson (2016) and second one is related to teaching learning experience, Community of inquiry developed by Garrison, Anderson and Archer (2008). Through these theories, firstly researcher checked the effective e-learning teaching strategy as well as the effectiveness of e-learning teaching strategies on teaching learning experience of teachers.

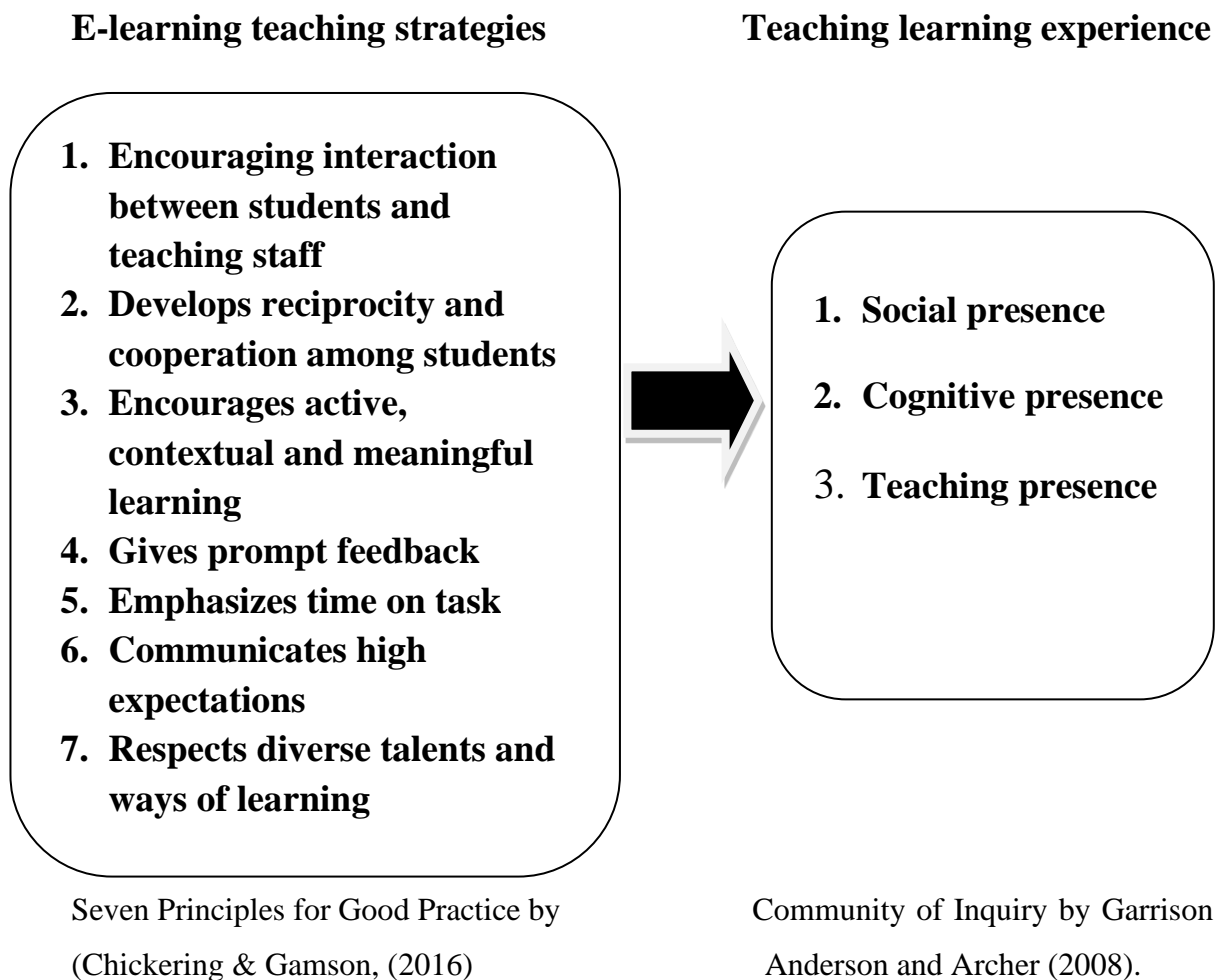


Figure no 1.1 Theoretical framework of Effectiveness of e-learning strategies and teaching learning experience.

1.7.1 E-Learning Teaching Strategies (2016)

The current research is based on the “Effectiveness of e-learning teaching strategies used at higher education level”. E-learning teaching strategies, chickering and Gamson (2016) presented the seven principles for good practice. They explain effective teaching practices for effective teaching learning process at higher level. Through these strategies teaching learning process become more effective. There are seven effective teaching strategies has been selected for this research.

According to the model there are seven most frequently used e-learning teaching practices at higher education level. These are the strategies like, encouraging interaction between students and teaching staff, develop reciprocity and cooperation among students, encourages active contextual and meaningful learning, gives prompt feedback, emphasizes time on task, communicates high expectations and respects diverse talents and ways of learning.

1.7.2 Teaching Learning Experience (2008)

Garrison, Anderson and Archer (2008) presented model related to community of inquiry for teaching learning experience. According to the model there are three important elements for effective teaching-learning experience. Three important elements are social presence, teaching presence and cognitive presence. In effective teaching learning experience, these elements are very important. These three elements are important in the e-learning process where communication and learning happened through electronic devices. In effective teaching-learning experience at higher education level these three elements are very important. These have strong effects on the teaching learning experience at higher level.

According to the model, teaching presence played a vital role in process of effective learning experience. Teachers deliver the knowledge to the learner for that purpose they use different techniques to improve the effectiveness of knowledge. Teaching presence plays a role of bridge between the social and cognitive presence in teaching-learning process.

The main focus of the research was to check out the effectiveness of e-learning teaching strategies used by teachers at the higher level and also checked the effect of e-learning teaching strategies on teaching-learning experience of teachers at higher education level.

1.8 Operational Definitions

1.8.1 Online learning

In online learning, learning happened in real time. Instructor and learner use virtual medium in a set time to teach and learn new knowledge in online mode. In this type of learning, student and teacher have direct interaction through specific medium. There are some common tools are used for this purpose like video

conferences, live stream chatting in real time.

1.8.2 E-learning

In e-learning there is no fixed time for the students as well as for teachers in teaching learning process. Teachers use email and other sources like uploading of lecture and assignments on LMS and other tools with the use of other electronics resources. There is no time bound situation in e-learning mode. Students can see the lecture any time. They can upload their assignments on deadlines also. Teachers as well as students are not that much specific about the time bounding in the process of learning. They can learn any time and through any electronic device related to communication. Different methods are important in use of asynchronous mode like recoded lectures in audio, video and audio video forms.

1.8.3 E-Learning Teaching Strategies

Instructors use different tactics and strategies in teaching learning process for fulfill their objectives of the study. Techniques and tactics used by the teacher for achievement of course objective called strategies. Those teaching strategies were also used in class through the use of electronic mode of communication that is called e-learning teaching strategies. These strategies are helpful for the learner to learn new knowledge as well as for teachers.

1.8.4 Effectiveness

Effectiveness means the result of the work according to the desire and need. Different activities and techniques use for achieving the effective results of the task. In teaching-learning process different objective and goals make and use different techniques and strategies to achieve those objectives. In teaching-learning process if the objectives and goals were successfully achieved then the strategies you chose become effective. In this matter, teacher use teaching strategies for effective teaching learning process.

1.8.5 Encourage Interaction Between Students and Teaching Staff

Proper interaction between the instructor and students means that how both interact with each other. Teachers as well as students feel more motivated to interact with each other properly during the teaching learning process. Teacher is a person who played an important role in interaction between them. Student feels motivated

if teacher motivate and encourage them in classroom and provide them proper guideline.

1.8.6 Develop Reciprocity and Cooperation Among Students

Reciprocity and cooperation among students mean how teacher develop cooperation between their students in class room. Developing ability of team work between the students is important and effective teaching strategy. Teachers use this strategy and increase cooperation and team work between the team members and class fellow. In e-learning, mentioned teaching strategy is important when students as well as teachers share their ideas with each other. This makes strong bonding and gives motivation to others regarding their work.

1.8.7 Encourage Active, Contextual and Meaningful Learning

In teaching-learning process active and meaningful learning is important. Only listing the lecture of teacher and memorizing the lesson is not learning. Teacher must use teaching strategy that build the confidence, linked the knowledge with past experiences. It enhances the usefulness of the knowledge. Learning that have link with experience of practical life has more effective way of learning. Teachers use this technique and provide effective teaching learning process in their online as well as face to face class.

1.8.8 Gives Prompt Feedback

Proper and on time feedback means teachers provide feedback to the students on time for their better learning in online class. Teachers always provide guideline as well as motivate to the student related to their learning in class. They should provide them proper directions in their work in their online classes. Teachers provide them on time guideline regarding their problem and work then they achieve milestone of their lives.

1.8.9 Emphasizes Time on Task

Time is very important for everybody in life especially for students in a class or in a session. Teacher is a person who realized to the problem of the student. Teacher should brief and provide the guideline about the important to complete their tasks on time. Emphasize time on task is very important and effective teaching strategy in face-to-face mode and also in online mode. Teacher must teach their

students that how to manage their time in class as well as in real life.

1.8.10 Communicates High Expectations

Communicate high expectations are important teaching strategy in effective teaching-learning process. Students must learn to communicate their expectation to others especially in their class. Teacher's expectations from the student are very important for the learning of the learner and students also must have high expectations in life.

1.8.11 Respects Diverse Talents and Ways of Learning.

In learning process, every student has different talent and learning abilities. Student comes from different backgrounds and has different talents. Teacher is a person who polishes the student's talent and accepts their divers learning abilities according to their choice and capabilities. Every student has his/her own ability and interests. Teacher must respect the difference of learners in class and respect their divers' talents.

1.8.12 Teaching Learning Experiences of teachers

In teaching learning experience, teachers must have experience with the command on their subject related to their teaching in e-learning. In e-learning, teachers use electronic way of communication for making effective teaching learning experience.

1.8.13 Social Presence

Social presence means all factors those affect the learning and have an influence on the teaching learning experience. In social presence, communication between the people is important. In online learning, relationship or interaction between student and teachers also exists under social presence. Effective learning process involvement of people (teacher and students) is important. Teachers learn from their experience related to teaching learning process.

1.8.14 Cognitive Presence

According to the model, cognitive presence of the participant and teacher is important. Teacher tries to improve the cognitive level of learning of the learner and help them to improve their cognitive learning. Participants in online learning must be able to understand the knowledge deliver during the online session.

1.8.15 Teaching Presence

Teaching presence means teachers must have full grip on the subject matter or topic related knowledge. Teachers have ability to develop the course and strategies for the delivery of subject related knowledge. Teacher can develop strategies to enhance cognitive learning for students as well as for their selves. It plays an important role between cognitive and social presence in teaching learning experience of teachers.

1.9 Significance of the Study

Teaching strategies plays an important role in teaching-learning process. Teachers used different teaching strategies in the class through e-learning. Teaching strategies are helpful in effective teaching learning experience. In present research researcher checked the most effective e-learning teaching strategy at higher education level. Also researcher checked its effects on teaching learning experiences of teachers at higher education level. This research will helpful for the future researchers. It will help to those students who will want to conduct work in the field of e-learning instructional strategies especially in Pakistani context. Researcher also wants to find out the effectiveness of e-learning teaching strategies and their effects on teaching learning experience and also their effects on teachers at higher education level. Students and teachers have new experience of e-learning mode of education during pandemic situation. Students can take benefit from this research and can learn different e-learning strategies. During this pandemic situation, students also learn about the e-learning teaching strategies which were used during the online mode of education.

This study will also helpful to teachers whom are currently working in educational departments and wanted to learn about the new and effective teaching strategies of e-learning. After shifting the mode of education from face to face to e-learning, teachers need more training and should learn new knowledge about this system and instructional strategies especially of e-learning instructional strategies. This research will be very helpful for future studies related to this field.

This research is also helpful for the authorities of different universities those worked in pandemic situation of COVID-19 related to continue the online educational process. It is need of the time is to learn about the different teaching strategies to prepare

the effective e-learning teaching strategies for teachers and students. Effective e-learning teaching strategies especially facilitate students during pandemic situation of COVID-19. Present research is helpful for the institutions for effective e-learning teaching strategy at higher education level.

1.10 Methodology

1.10.1 Research Approach

Quantitative research paradigm used by the researcher. Close ended questionnaires were used for data collection.

1.10.2 Research Design

The research is descriptive in nature. In present study, researcher analyzes the effective e-learning teaching strategies as well as effects of these strategies on teaching learning experiences of the teachers. Close ended questionnaires were used for the data collection. After data collection from the respondents (teachers) researcher analyzed the data through statistical tests. Two statistical tests was applies one was mean test and second one was linear regression test.

1.10.3 Population

Teachers of common departments (Economics, Education and Masters in business administration) in public sector universities of Rawalpindi and Islamabad were contacted for the study. According to HEC there were 23 public sector universities are currently working in Rawalpindi and Islamabad. Three common departments of two faculties, faculty of management sciences and faculty of social sciences were selected as population of the study. There are 319 teachers were working in common departments of Education, Economics and Masters in business administration.

1.10.4 Sample Size

175 teachers of common departments (Economics, Education and Masters in business administration) in public sector universities of Rawalpindi and Islamabad were the sample of the current research. 175 teachers were selected as sample according to the Krejcie and Morgan table for sampling.

1.10.5 Sampling Techniques

In this research, researcher used proportionate stratified random sampling technique for collection of the data. Researcher selected the teachers of common departments of the public sector universities in Rawalpindi and Islamabad in equal proportionate. Every member of the research has equal chance to be selected.

1.10.6 Research Instrument

Researcher used Survey method for data collection. Researcher used two research tools for the collection of data from the respondents. The questionnaire was based on closed ended questions. In first questionnaire, there were 34 items and in second there were 32 items. Tool validation has been finalized through the experts of related field. Through the pilot testing researcher checked out the reliability of these tools.

1.10.6.1 E-learning teaching strategies tool

Questionnaire related to E-learning teaching strategies adapted from the work of Dr. Syaril Izwann Jabar and Prof. Peter R. Albion used in 2016. The questionnaire has closed ended questions. In first questionnaire there are 34 items. Tool validation was done through the experts in related field. Through the pilot testing checked the reliability of the tool.

1.10.6.2 Teaching learning experience research tool

The second questionnaire was related to online teaching learning experience of teachers and it was adapted from the D. Randy Garrison et al used in 2008. The questionnaire was based on closed ended questions. Second questionnaire was based on 32 items with close ended questions. Tool validation has been completed through the experts of relevant field. Through the pilot testing researcher checked out the reliability of that tool.

1.10.7 Sources of Data

Primary source was used for data collection. Researcher personally collected the data along with that online survey forms were used for data collection from the respondents.

1.10.8 Data Collection

Researcher personally collected the data from the respondents. Online survey forms were also used for data collection. In survey form, close ended questions were included.

1.10.9 Data Analysis

175 questionnaires were distributed to the teachers and from those, 169 teachers returned back questionnaires to the researcher. Six teachers did not return the questionnaires. The return rate was 96.5%. Male as well as female teachers were included in this research. Researcher checked the questionnaire before interring the data into SPSS software. 169 questionnaires were used for final research analysis. Two statistical tests were applied for analysis of data first one was Mean and second one was Linear regression.

1.11 Delimitation of the Studies

1. Research delimited the study and selected e-learning teaching strategies only.
2. Researcher delimited the study and selected only public sector universities of Rawalpindi and Islamabad.
3. Researcher selected only common departments (Education, Economics and MBA/BBA) of faculty of management sciences and faculty of social sciences.

CHAPTER 2

REVIEW OF LITERATURE

This chapter is related to the previous researches those are relevant to this topic. This chapter starts with the background of the research, middle section deals with the model's relation to e-learning and end deals with the variables of the research that is related to the e-learning teaching strategies and teaching learning experience.

2.1 Background of the Study

In Pakistan, there are 177 different institutes of higher education and universities were working in 2020. From the total 177, 58% were from the public sector and 42% were from the private sector. All higher educational institutes are working under HEC (Higher Education Commission). After the pandemic situation of COVID-19 in all around the world, every field of life was affected. All over the world lockdown was the only solution to stop the spread of the virus. During this pandemic situation, educational sector also faces many problem and issues. In March 2020, the government of Pakistan, and the HEC also took steps to lockdown at all over the country. All educational institutes were closed to stop the spread of virus. HEC advised to the educational institutes to start online education (Mahmood, 2020). That step was taken to maintain social distancing in the country and also tried to stop the spread of virus (Xinhua, 2020). Educational activities switch to the online system. At that time normal classroom study was not possible. Teachers are also face lack of opportunities to fulfill their educational requirements (Hill, 2021). During the pandemic situation there is a need of effective teaching method and strategy especially in e-learning mood of education. In countries like Pakistan people are less aware about the new technology as well as the use of technology. HEC provided instructions to the higher institutes to train and facilitate their staff for online mode. World Bank also provided help in education field to the undeveloped and under developing countries during pandemic situation (The World Bank, 2020).

2.2 History of E-Learning

In the beginning different organizations use e-learning as instructional way of communication between teacher student for the better and improved learning of their learners but in specifically 21st century the proper work starts on online learning (Wood field, & Harrison 2013; Frydenberg, 2002; Graham, Young 2002). In traditional classrooms the discussions between teachers with students are held in the class and teachers have direct interaction with the students. They discuss the ideas and exchange the knowledge directly in class. Face to face and e-learning interaction have differences. Teachers and students discuss the knowledge through the proper medium of communication. According to the documental proof in 1843 started distance education, slowly and gradually distance education improves with the time. In the starting days personal computers were used for some specific people (Siemens, 2005). E-learning evolves with the passage of time. Most important time in e-learning mode is invention of web. Web development boosts the concept of e-learning in all fields of life, especially in education field. After the web invention new era stated for educational process across the world. According to the need new technologies like computers, laptops and projectors evolved in educational sector and models develop accordingly (Garcia-penalvo & Seoane-pardo, 2015).

Different models and pedagogical approaches developed with the passage of time in e-learning. Improvement in e-learning divided into different stages and the word use for state is generation or timeline for e-learning (Conole, 2013). According to Garrison and Anderson (2003) there was five generation or stages in e-learning models. These stages change with passage of time and innovation in e-learning technology. First three stages have theoretical base but four and fifth have not, first linked with behavioral theory second linked with cognitive theory and third linked with constructive theory. Every generation have their own pedagogical models link with e-learning. New generation or stage link with the learning management system (LMS). Teachers got the hands on experience with the system (Wiely, 2002). In e-learning different forms can be used for communication. Teacher and student interact and share their thoughts through proper medium of communication. Teacher can share the video and charts for the better understanding of the learner. Students can also discuss their queries on e-learning portals, and ask questions

related to their topics. During the e-learning, learners learn the knowledge on their doorsteps. There is no physical presence is needed in online learning. E-learning is different from the traditional system of education (Soper, 2017). Learning is continued and lifelong process. In e-learning learner can learn the knowledge through the proper channel of communication. In e-learning teacher uses different ways to facilitate the learners. Through the mobility of communication equipment like smart mobile phone, tablets, and laptops learning becomes more effective, easy and useful for the learner. Before the new equipment the only computer can use for the e-learning and computer is not easily movable device from one place to another. The inventions of smart devices are easy to carry and handle also movable from one place to another for the educational purposes, for example smart phones and tablets are easily movable and effective in the field of education (Govindasamy, 2001). The learner can take out maximum benefits from the new technology and can learn knowledge from whole world without any barrier. The main elements of e-learning are discussion, element of gamification, brainstorming and clear the doubts of the students on time are main four elements of process. And these elements have their key importance in the field of e-learning. These elements are helpful for effective e-learning in education sector. The first one is discussion between the students and teacher which is helpful for effective learning. Discussion can be held and use asynchronous medium like in the form of text messages and e-mail. The second element is gamification for students. Teacher can use different online games for the better understanding of the learner. The third element is brainstorming of the students, through different ways of brainstorming teacher can use medium of e-learning effectively. The fourth and last element for the effectiveness of e-learning process is to clear the doubts of the students on time. Teacher must answer all the questions of the students in online education system. After that e-learning become more effective in teaching learning process (Vignati et al., 2017). In e-learning students are more motivated for the learning. In online learning students are self-motivated and they want to learn new knowledge. Most of the time self-motivated students took admission and they give their best for their learning (Nagel & Kotze, 2010). In 21st century, the teacher personnel become different and also critical just because of internet. Most of the time knowledge is available online without any specific teacher and students have direct interaction with that that knowledge. In e-learning learner can learn anything at any time

(Johnson et al., 2016). In present time the concept of teacher and teaching is not time bounded. In asynchronous mode accessibility of teacher is possible round the clock. Student can learn anything in any time. In traditional mode teachers are available in specific time, but in e-learning teacher are available round the clock. These days just because of e-learning there is no boundary of learning and there is no specific time for teach (Grove, 2017).

2.3 Learning

There are different ways to learn knowledge. Through learning, learner learns the different attitudes, skill and knowledge. In the matter of learning, experiences played an important role (Vignati, Fois, Melazzini, Pei, & Zurlo, 2017). Learner learns different things through the experiences of their lives. Learning is a continue process. According to the theory of experiential learning, learning is a continue process and this is not an endless process. Learning has no end point in whole life of a person. It is based on continuous process to learn new knowledge. A person learns day by day and new ideas come and old one can be improve with the time. The concept of learning can be change and also improve with the passage of time. In formal learning process instructions and the instructional strategies are essential. Instructions can be design by the instructor, and also instructional designer designs the instructions (Conole, 2013). Instructional designs are helpful for better learning and provide effective ways to learn the knowledge. Instructional designs are helpful for the implementations of efficient learning in institutions especially in the educational institutions (Merrill, 2012). In the learning process instructor as well as instructions played an important role. Instructional designs are helpful to learn in a systematic way, and instructional design is a way to describe the instructions in teaching learning process (Berger & kam, 1996).

2.4 E-teaching and Learning and Traditional Teaching and Learning

Physical interaction is not possible for learner and instructor in online learning mode but interaction or communication is possible. In traditional methods of learning, interaction held face to face or through physical presence. However, in e-learning mode interaction held through the different mediums of communication. In e-learning students can easily interact with the instructor through the electronic devices, teachers also facilitate them, and solve their problems through the same medium of communication. These mediums of

communication are important because the interaction between student and teacher and student to student held possible, fruitful and useful. Through this interaction mutual understanding develops and this is very helpful for learning process (Graham, & Duffy, 2001). In the beginning, the word e-learning was used only for delivering the message or information from one place to another. And now the management of content is also possible through the e-learning process. In traditional methods people interact directly with each other but in e-learning interaction are possible through proper channel of communication (Govindasamy, 2001). E-learning mode is an interactive way to deliver the information from one person to another person. In ancient methods, interaction between the student and teacher is stronger but in e-learning the interaction is more effective and easy to hold through different devices (Soper, 2017). It is easy for the both, the instructor and learner. In this modern age of human history, teacher or instructor convey the content properly towards the learner through these synchronous and asynchronous modes. Teacher facilitates the learner through the e-learning and effective communication is possible through these electronic ways of communication (Garrison & Anderson, 2011).

2.5 E-Learning in Pandemic Situation

Online education plays a vital role in pandemic situation. In 2020, pandemic situation of Covid-19 spread all over the world. In all over the world just because of virus called “corona Virus” people are facing many issues and even massive deaths. World health Organization (WHO) declared pandemic situation in world in March 2020. All fields of life effected from the virus, especially the field of education. After lockdown, almost all over the world education sector need the other ways of teaching and learning. After this worst situation, experts and decision-making bodies decided to restart the educational process through the online system. Developing and under developed countries still face a number of issues relates to online education. These countries are not that much aware about the new technologies, also use and availability of proper technology according to need or demand is not possible because of financial issues of these countries. Pakistan is also developing country and facing a lot more problems during pandemic, especially related to educational sector. Students as well as teachers experienced many issues related to internet and connectivity. Use of electronic devices for online education is also a significant issue. Instructors are trying to use different teaching strategies for better teaching and learning

process. Online education helps in pandemic situation of Covid-19 (Mahmood, 2020). In pandemic, physical presence and interaction is not important. Through the online system and electronic devices, interaction between teacher to students, student to teacher as well as student to student can be possible through the proper channel of communication. In online education internet is a central key of communication between the instructor and learner. On the other side, instructional strategies can also played an important role (Retalis et al., 2006).

According to educationists, in the success of online education ‘student centered curriculum and teaching’ is essential. Teacher must play an important role to provide complete guideline to the learner. Teacher should follow the student-centered teaching strategies and curriculum. Teacher is a motivator and facilitator for the learner according to their needs in online education. Course development has also its importance in online system. Proper course design must be helpful for the teachers as well as for the learners. In online course design, proper instructions are needed. Through these instructions learner can learn in proper way. In face-to-face education, teachers have central position but in online education most of the time students are at central point. In online education, students become more self-motivated, and they learn with passion. Online education is one step forward from face-to-face education. In online education technology and motivational learning both are involved (Simon, 2012). According to Tallent-Runnels and their colleagues talked about some persons those who select online courses and what were the reasons for the selection of those courses? Most of the learner those who did not get proper education in the early age, now they have option to continue their education through online system of education. Age is an important factor in online course selection.-Online education is easy to access and learner can take admission in any course without physical presence from any country.

In online education, teaching strategies as well as their effectiveness both are important. In online learning instructor conveys message through the internet towards the learner and message or lecture should be easy too understandable for the receiver. It shows that teaching strategy is a key factor. Teachers play a role of instructor and facilitator for the students. Instructor helps the student in online education through different techniques. Those techniques are helpful for students, even without the physical presence (Allen, &

seaman, 2015).

According to community of inquire model Garrison Anderson and Archer (2000) there are three presences; those are important in effective teaching learning experience like social presence, teaching presence and cognitive presence. These are the three important factors for effective online teaching learning experience. In critical thinking there are three elements in education and these elements are helpful. First element is exploring, second is integration and third is solution. Firstly, explore the problem and second step is to investigate the problem of the learner. These two steps play significant role initial stage of problem identification and then know about the causes of the problem. The third and the last step is critical thinking that is used to solve the issues. It is necessary to think critically. In the form of solution new knowledge will develop and that is helpful to continue the process of critical thinking.

2.6 E-Learning Teaching and Training for E-Learning

E-learning is important for the government institutions as well as for the private institutions. The concept of learning is different in face to face than e-learning. Student can learn anything beyond the boundaries of four walls of classroom in e-learning In e-learning students are self-motivated and can learn in easy way (Jung & Rha, 2004). In e-learning instructor use different ways for effective learning like video, charts, pictures and other content related things. These all elements are helpful because these are interlinked with the content. In e-learning presentation of the content is essential as well as the different tools of presentation have influence in it (Schnotz, 2005). According to Anglin, Vaez, and Cunningham (2004) in learning process audio as well as video content are effective. Learner learns better with visual content and the learning become long lasting through visual content. In e-learning, there have been many research done especially about the e-learning and visual communication but it is not helpful for designing of visual content for e-learning. E-learning content and teaching strategies designers need a lot more time for the designing a new visual content. In the matter of e-learning visual learning is helpful for that the designer of e-learning content must have knowledge about the different ways of content design with visualization in e-learning (Boling, Eccarius, Smith, & Frick, 2004).

2.7 Effectiveness of E-teaching and Learning

Satisfaction of the learning is essential in e-learning mode. In the result of learning the outcomes shows the effectiveness of the learning. The results of e-learning become effective if the learner become satisfied as well as their results also show the level of learning and satisfaction (Wan, 2010). In the effectiveness of e-learning there are some impactful factors are course content, model of e-learning, teaching strategies for successful learning for the learners. In e-learning mode instructor facilitate the learner. In e-learning the instructor is a guideline provider for the learner and helps the learner when they needed. Most of the time online system is learner centered system. Learner is central point in e-learning system and most of the time learners are self-motivated in this system. In e-learning learners do not relays on one person or one source. On the other hand, they learn from different sources and gain knowledge (Eom & Ashill, 2016).

2.8 Synchronous and Asynchronous

Online education is a combination of two types; first one is synchronous and second one is asynchronous. Before online education synchronous mode was used. In online teaching learning process, it has two ways of communications and it is called synchronous mode. Teacher delivers lecture through technology and at the same time learner learns that knowledge. Electronic Medium of communication is important in online teaching learning process. In the 20th century, synchronous mode was introduced in education sector (Wood field, & Harrison 2013). Learners and instructor have direct interaction through the internet. In asynchronous mode learning is not proceeded at the same time. Internet is also used in asynchronous field of education but not in real time with direct interaction. Teacher and learner use electronic devises to learn new knowledge like audio, video and audio, recordings for LMS. It is used for uploading the instructions about the course.

E-learning is easy way of learning for teacher as well as for the learner's point of view. At any time, a teacher can prepare the lecture with recordings then can upload at LMS and student also listens and see the material according to his/her convenience. Through the emails, universal group made, and they link with each other and learn new knowledge according to the need (Ghirardini, 2011). In online education there are two types of students: first one is those people who take admission in university for the degree and

diploma. Most of the learners take admission at higher level for the sack of degree, diploma or higher studies in online education. The second type is of those learners, who get admission in MOOC (Massive Open Online Course). In this type, learner is self-motivated, and they try to learn specific knowledge or skill. Most of the time, these learners took admissions in online courses before those were involved in face-to-face learning (Sun, &Chen, 2016).

2.9 Communication and Interaction

In distance learning, interaction and communication is vital. In distance education interaction between the instructor and learn as well as learner to learner is main element for a virtual class. In education sector interaction between learner and instructor is possible through technology. Interaction through the technology has many ways for communication like, direct interaction and indirect interaction (Moore & Kearsley, 2005)

2.10 E-Learning Strategy and Technology

In e-learning different teaching strategies and tool use for effective learning. LMS is effective tool related to management of the course in e-learning. It is helpful in teaching-learning process, especially in e-learning but other tools also can be used for to increase the effectiveness of the learning. Personal collaboration is also helpful in e-learning (Couros, 2010). Different software is used as a tool in e-learning. New technology used in learning system can improve the learning process in e-learning. E-learning teaching strategies and techniques are important in learning process (Manikas &Hansen, 2013).

In e-learning, new methods and strategies can be use. Old methods and strategies are also useful in the online teaching and learning process but with some modifications. E-learning is more economical and easier to access. Just because of new methods and use of technology in the field of education in the form of e-learning, the instructor must know the new methods of using technology according to the need of different teaching strategies add. Instructor learns the new technologies and must facilitate the user through this technology (Waldner et al., 2012). E-learning is learner centered process that is way the instructors' tries to facilitate the learner through different strategies. Flexibility is common in e-learning mode and instructors and trainers tries to facilitate the learner as they can do. Adult learners learn knowledge in more effective way as compare to young learners. Adult learners easily learn new technology and methods of learning. For effective online learning

new educational technology is vital. Some organization started mix method in teaching and learning but in online method new education technology plays an vital role (Disch, 2012). There are different ways of instructions those instructors use in e-learning mode. Trainer guided is one of them. In trainer guide approach, the instructor guides the students in the learning activities. In this method, the learner and instructor have direct online interactions. Learner can share the problem with instructor directly and instructor helps the student to solve their problems on time. Instructor use different strategies and techniques to facilitate the learner in their learning process (Gagnon, Desmartis, & Njoya, 2013). In e-learning the course content is available round the clock, and learner open the sources anytime and learn the knowledge. Just because of technology advancement there is no specific time and place for learning. New technologies are helpful in the learning process especially in e-learning. Teachers also use different e-learning strategies for helping the students in their learning process. Different online teaching methods are helpful for the learning of the students as well as for the instructor for future learning. E-learning learning through visuals plays an important role for the learners' knowledge (Gros, 2016).

These days, there is rapid change observed in technology. Through this change in technology, education sector also converts its dimensions. Teachers as well as students face many issues and challenges in the new era of technology. Teacher use different techniques and strategies for better understanding of the students. Teacher tries to improve the education and use different mediums of communication, different synchronous and asynchronous medium are used for the teaching learning process (Stewart, 2008). There are different teaching strategies and these strategies are helpful for the learner. Through such strategies the learner can understand technology and study related material. These strategies are helpful for the learner as well as for the instructor (Mitchell, 2014).

HEC tries to train the staff and teachers to continue the educational process in this pandemic situation (Academia, 2020). According to Allen & Seaman, (2015) e-learning have many benefits in the education field. Through e-learning, time and money can be saved and learning the new knowledge comes at your door steps. Through e-learning the delivery of knowledge become faster and knowledge is accessible for anybody at any time.

2.11 E-learning Through Electronic Devices

In e-learning, students' cognitive abilities are helpful. In this new era of technological learning where instructor must have awareness about the new technology and innovation related to relevant field. In e-learning process, teaching strategies and student involvement both have strong link. E-learning through internet starts in 1900. Different countries started online course in different fields. Online education is helpful for the students in the matter of time saving. In face-to-face education more time is wasted in travelling to reach at the institution and then wait for the class conduction under supervision of an institution. On the other hand, in online education, students can take course from any place where they live and remember students are not bound in the four walls of the campus regularly. In 1950's after the improvement in ways of communication, properly visual online education started in United State of America. Before that visual communication was not that much common but after that it become possible. In 1981, first fully online program was started in United States (Sun, &Chen, 2016).

Distance learning education is related to the electronic-learning. Most of the concepts and content of distance learning education are similar with regular class room education. 'Technology' plays an imperative role in e-learning, without technology e-learning is not possible. Teacher and students are connected with each other from the different areas or places through e-learning. There are many reasons to adopt the new distance education that must have link with the technology. Through the technology, teaching process and learning become easier and more effective. There are no geographical boundaries in this type of learning process or in online education (Simon, 2012). Anybody can take online course from any university even from all over the world. It all become possible just because the use of technology in education. E-learning provides an opportunity to the learners to learn new knowledge and skills without using physical appearance. Face to face education is expensive just because of physical presence of the learner (Wood field, & Harrison 2013). Comparatively in online learning, physical appearance is not that much important. In e-learning cost of education become decreased. In e-learning mode educational system can facilitate more students at the same time and can give them new and advance knowledge (Sun, & Chen, 2016). In pandemic situation of covid-19, online education works effectively. In 2020, Covid-19 was the reason of

lockdown at all over the world. In this pandemic situation education sector shifted their mode of education towards online system (Mahmood, 2020).

According to Gerken & Grohnert, (2015) online education reduces the cost and time of the education. Learner can learn new knowledge from any place of the world. Learner learns new knowledge from the experts from all over the world without physical presence or appearance. In e-learning there is no restriction of time. Learner can learn any time through the use of technology without disturbances and as their convenience or needed. Adjustment and improvement are possible any time and in any course.

2.12 E-Learning and Instructional Strategies

Different teaching strategies have different theoretical background. Teaching strategies and learning techniques have some background that linked with specific theory. Teachers and instructional designers develop instructional strategies according to the need of the students and time. For effective learning there are three important and collectively working components are instructional strategies, teaching tools and teaching strategies. In the combination of three components effective learning process develops (Dabbagh, 2005). Teaching approach is different in face-to-face education mode and in e-learning educational mode. Course designing in face-to-face mode is different in e-learning mode. In e-learning course design technology involves and course design accordingly. Effectiveness of learning depends on the way of delivering knowledge. For checking the effectiveness comparison is more important (Noesgaard & orngreen, 2015). For effective e-learning design of the course is equally significant. E-learning course design by the course designer according to the technology use in e-learning. In e-learning course design, designer should focus on collaboration between the teachers and students and timely completion of task (Siemens, 2014).

Teaching strategies are vital for effective learning process in e-learning. Effective teaching strategies are helpful for the learners in e-learning mode. Teaching strategies in e-learning mode like teachers participation, communication with each other, interaction student to student and teacher to student and monitoring and feedback on time is very vital techniques for effective e-learning process (Darabi et al., 2013). According to Gasevic et al. (2015) teacher is a guideline provider for the students. Students can interact with other

in online class under the supervision of the teacher. Teacher can make the guideline for the students in online class for smoothly running the class. Instructional design played an important and effective role in interaction of the teachers and student in e-learning mode. Theories are important in designing the e-learning course. Different learning theories can be used for designing the online course and through specially design course helpful for the learning of the learner in e-learning (Bozkurt et al. ,2015).

Instructional strategies are essential for teaching learning process especially in online teaching and learning process. Instructors and designers design different strategies for teachers for the effective teaching. Learning is continuing process. It changes with the time and teachers also learn new knowledge with the passage of time. To learn the new strategies in teaching is effective for teaching learning process (Lowyck, 2014). In effective teaching learning process, training of the instructor is also important. Different teaching strategies are designed for effective teaching learning process. Instructional designs are important the learning process (Chimalakonda, & Nori, 2018).

2.13 Teaching Effectiveness

Teaching effectiveness depends on the teacher's ability to facilitate the students especially in their learning. Instructors facilitate the learners as they can in during academic activities. If the learner is satisfied from their instructors' guideline, then the teaching learning process becomes effective. In traditional class rooms there, different researches were conducted to check the effectiveness of instructional strategies.

There are some common factors and these factors have effect on the traditional instructions as well as on online educational system (Seidel, & Shavelson, 2007). Interaction of students with each other, respect the diversity in the class, better communication, complete the work on time, proper and on time feedback, and appreciate the active learning process are the important factors. These factors are vital in teaching and learning process. These factors are significant for students, teachers as well as for the administration. Proper communication between the students and instructor is main element for the online teaching (Chickering, & Gamson 1987). These principles with good practices are also effective in e-learning mode.

In online education the new technology is also included into the educational system and this technology is helpful in the learning process. (Chickering, & Ehrmann, 1996).

2.14 Problem of E-Learning Faced by Teacher and Learner

Students as well as teachers faced many issues related to education during this pandemic situation but students and teachers cooperate with each other. Internet connectivity is big issue in Pakistan. In Pakistan, many students belong from the far areas, where people have not facility of proper internet (Rafiq et al, 2020). Instructors also face many problems during COVID-19 pandemic situation. Teachers faced issues like technology and its uses in e-learning. The use of technology makes effective these teaching strategies. E-learning instructional strategies vary from person to person. Teachers use different teaching strategies and analyze their effectiveness through their results (Mahmood, 2020).

2.15 E-Learning Models

Effective e-learning models are essential. A good model is always helpful in effective learning process. In model of e-learning, it must have the process of learning through electronic ways and devices with different strategies. In model of e-learning, there must be defined the whole process of e-learning and different ways to achieve the success of the learning (Eom & Ashill, 2018). According to the research group of United State of America Babson survey research, in their 13th survey about the online learning, e-learning is a vital factor in the learning through the electronic way. E-learning is a vital factor in learning process especially in modern ways of learning.

Teaching strategies are momentous in regular class room setting as well as in e-learning. E-learning is effective for some people especially for employees. In online learning mode, there is no need of physical presence but in regular face to face learning need physical presence of teachers and students in one regular and specific place. In e-learning, through communication technology, learner learns the knowledge effectively and easily without any physical interaction (Allen, Seaman, Poulin, & Straut, 2016). In e-learning process, learner and his/her performance is at focus point. In face to face learning, physical appearance is more vital. It shows that in online learning mode, the main focus is on the learning of the learner rather than the physical presence from the learning point of view both modes are vital and effective but in the matter of time and learning, e-learning

is more convenient and at some points is more effective (Means, Toyama, Murphy, Bakia, & Jones, 2009).

Some other researchers are not in favor that e-learning is more effective than the traditional method of learning. They think that both modes have their importance and effectiveness (Morgan & Adams, 2009). In e-learning medium of communication has been uses but not in face to face. Both have differences in their modes but not in the matter of learning. Difference is based on the way of communication. In face-to-face learning, instructor and learner have face to face interaction but in e-learning the interaction depends on the ways of communication (Kellogg & Smith, 2009). In e-learning the interaction has different ways. People have interaction with each other in this process like, interaction between the administration, student to student, students and teachers. They all are interdependent. These types of interactions in e-learning are very helpful for the learning point of view (Hillman, Willis, & Gunawardena, 1994).

In e-learning three components are working together. First component is pedagogical model second is instructional strategies and third is online learning technology. These three components are vital in e-learning process. Pedagogical model means how theory turns into practical. Different types of theories have been used in e-learning and their practical use is vital. The second component is instructional strategies. In instructional strategies, instructor use different strategies to facilitate their learner. Instructional strategy is based on the plan of the instructor for the course content and delivery of the knowledge. Instructional strategies are helpful for the learner in the matter of course content and understanding of the course. More effective instructional strategy can provide better understanding for the learner (Lowyck, 2014). Instructional strategies and pedagogical model have direct link. Third vital component of the e-learning is technology. Course content and the delivery of the course content is also another important factor. There are different instructional strategies and these are helpful in e-learning process for example first one is authentic learning activities in online education. Different learning activities use in e-learning instructional strategies and their authenticity is important. Problem solving strategy is also helpful in e-learning process. Student can learn better through problem solving method. Collaborative work is also important in e-learning instructional strategy. Learner can learn with the Collaboration of other students. Role

playing activities are also vital in e-learning instructional strategies.

Teacher can facilitate and teach to the students for their learning through modeling. Students learn through these strategies. In e-learning, different methods can be used to learn the knowledge for example expository, application and collaborative method. In first method, new information absorbs by the learner for improving in their knowledge. The second method is based on the application of new knowledge and in third method collaboration with others is essential and this is the way to learn new knowledge (Ghirardini, 2011).

2.15.1 Five Stage E-Moderating Model

Five stage model for e-learning is presented by the Salmon in 2000. Five stage model express the different stages of learning. It is said that for E-learning, five stages model played an important role. In five stage model there are five steps and stages for learning process. First stage was access and motivation, second stage was online socialization, third stage was information exchange fourth stage of the model is knowledge construction and fifth stage of the model was development. Through these stages learning occurs in online teaching learning mood.

2.15.2 Community of Inquiry model (COI)

This model is related to effective teaching learning experience. It is developed by the Garrison Archer and Anderson in 2000. This model is used for the effectiveness of online learning and also used in different researches from 2000 to onward. The model was used as quantitative research tool. It was used to assess the effectiveness of online learning and their strategies. In some other researches, this model was used for qualitative and mix method study. COI model has three main elements, cognitive presence, teaching presence and social presence.

According to Garrison, Anderson and Archer (2000) in cognitive presence the participant learns the knowledge through proper communication. In teaching presence, the instructor has the knowledge about the subject and other activities related to the subject. Teacher must know about the different and effective teaching strategies. In social presence, group communication with each other is important. In social presence, the interaction of student, teacher and others participants is important (Rourke, Garrison, & Archer, 1999). According to Garrison et al (2000)

the content of the course support the cognitive and teaching presence in learning. In effective teaching learning process, teaching presence and cognitive presence can be essential factors to improve the teaching and learning experiences. This model is used for online education as well.

In social presence, it is important to develop a stronger and purposeful social relation with the students during their education. In social presence proper and effective communication is important. In e-learning, student and teachers should use proper ways of communication. From the students' point of view in online education, proper communication is vital (Richardson and Swan, 2003). In e-learning, electronic ways of communication are useful for learning process. Proper way of communication helps in the development of better socialization between the society, student and teachers. In teaching learning process, positive social presence played an important role (Caspi & Blau, 2008). Social presence does not matter in the result of the students like in their exams and test marks. Social presence is effective communication between the groups in teaching learning process. In e-learning social interaction is improving with the passage of time. Instructor and learner communicate in better way in their teaching learning process (Swan & Shea, 2005). Through the social presence in teaching learning process, the concept of effective community develops. The social presence is relation between the communities can be develop through the proper and effective communication. The use of different activities can enhance it. In online education, mostly the focuses held on the purposeful and proper communication between the communities. Teacher focus on the academic activities and learner also concentrate on their learning (Vaughan, 2004).

Cognitive presence is important factor in teaching learning process especially in community of inquiry model. In cognitive presence, understanding and construction of knowledge held possible through the combined work. In online learning process, the learner learns the knowledge through proper communication and collaboration with others. In teaching learning process, Integration phase plays a bridging role, but it is difficult to diagnose. Teacher uses different ways and ask questions according to different methods to check the effectiveness of the learning.

Teacher uses different probing questions and take feedback from the learners for their effective cognitive development. Teachers use different strategies to know the effectiveness of teaching learning process. In teaching learning process, teaching presence is also very important factor (Garrison et al, 2001).

In community of inquiry model, teaching presence is important. On the other hand, we can say that teaching presence is playing a role of bridge between cognitive and social presence. Teaching presence plays an important and effective role in effective teaching and learning process. In teaching presence, teacher must have full command on subject matter knowledge and teaching strategies in traditional as well as in e-learning processes. Teacher provides a support to the student in their learning process. Teacher provides guideline to the students in teaching learning process (Anderson et al, 2001).

2.15.3 E-learning teaching strategies seven stage model

E-learning teaching strategies, Chickering and Gamson (2016) presented the seven principles for good practice. They explain effective teaching practices for effective teaching learning process at higher level. Through these strategies teaching learning process become more effective. According to the model there are seven most frequently used e-learning teaching practices at higher education level. Encouraging interaction between students and teaching staff, develops reciprocity and cooperation among students, encourages active contextual and meaningful learning, giving prompt feedback, emphasizes time on task, communicates high expectations and respects diverse talents and ways of learning.

2.16 Teacher in Teaching Learning Process

Teachers do not only play only a single role in teaching learning process. Teachers have to play multiple roles like manager, facilitator, organizer, programmer, demonstrator, advisor, educator, and researcher etc. These all roles are being played by the instructor to facilitate the learner. Most importantly teacher organizes the process of learning in the class. Teaching is a backbone of education system especially for teaching learning process. Teacher needs different skills for each class to facilitate the learner. Teacher uses different teaching strategies to facilitate the learner and use different strategies for better

understanding of the learner regarding to the learning material and learning process. Teacher must use different types of learning materials as well as different strategies to facilitate the learner according to their need and interest. Teaching strategies can make learning process more effective, easy and enjoyable. Effective teaching strategy is always helpful for effective teaching learning process (Bangert, 2008). Teaching is a way of facilitating and guiding the student in the learning process. A learner can learn from the teacher and form other ways. In self and natural learning, learners do not have specific teacher. It shows that learning is continuous process and a person learns in whole life. Usually, a learner learns in a formal way and semi-formal way. On the other side self-motivated learning is also important in learning process. Learning can be possible from human as well as from the material (Brown, 2006).

2.17 Teaching Strategies and Its Types

Strategies are important in any field of life. Most of time these strategies refer to the military action taken to achieve some specific objectives. After that the term strategies is use for different fields especially for education. Military, strategies have been used to win the warfare but in education strategies are used for the better learning of the students. Instructor must know about the learner as well as their level of learning. Teachers must try to facilitate their students in teaching learning process. Instructors should keep in mind that students are from different back grounds and their intelligence level is also different from one student to another. It is the duty of the instructor to facilitate the learner according to their needs with different teaching strategies. Strategies are used to achieve planed goals. Teachers use different tactics and methods to achieve their educational goals and objectives (Haidir & salim, 2012).

In education sector, teachers make different plan of action for effective teaching learning. Teacher makes specific goals, plan of action and specific activities as a strategy for educational process. The term strategy explains broadly like approach, and method (Fuller, 2012). In teaching learning process teacher use different ways to facilitate the learner in their learning process. Teacher uses different techniques to change the behavior of the learner. Through different teaching strategies teacher change the behavior, feeling, thinking as well as the action of the learner (Haidir & salim, 2012).

2.18 Teaching Learning Experience

According to the Garrison et al. (2007) there are three elements are used for effective teaching learning experience. Teaching learning experiences depends on these elements. First and important element is social presence. According to Garrison et al. the second important element is cognitive presence and third one is teaching presence. Teaching learning process becomes effective through these elements. These elements work for online as well as in regular learning mode.

2.19 Effective E-Learning Teaching Strategies

In the matter of effective e-learning teaching strategies, different instructors use different teaching strategies. E-learning teaching strategies vary instructor to instructor. There are many e-learning teaching strategies for the effective teaching learning process. Instructors use different strategies in e-learning. These strategies are helpful for the learners to learn new knowledge. According to Kim McMurtry (2016) there are four effective e-learning strategies.

2.19.1 Visible Engagement in Course Activity

In this teaching strategies of e-learning, instructor must use the proper way to engage the learners. In e-learning, student engagement with their course work is important. Teacher uses different methods to develop the interest of students towards the studies (Baran et al., 2013).

2.19.2 On Time Response/ Proper Interaction.

In e-learning medium of instruction, instructor and learner must have proper interaction and on time response for solution of problems faced by students (Walkem, 2014).

2.19.3 Constructive Feed back

Proper and constructive feedback of the instructor in e-learning is can has good impact towards the learner. Teacher facilitates and provide feedback to students on their participation and assignment. In that way students will feel very important at their end and can easily ask questions to the instructor (Bonnell & Boehm, 2011).

2.19.4 Proper Communication

In E-learning, proper communication is significant. Teacher and student belong from different places and only through internet they communicate with each other. On time response and provision of proper feedback is helpful for the learner (Gerken & Grohnert, 2015). In the education field, teachers use different strategies to facilitate the learner.

2.19.5 Cooperative Learning

The word cooperative learning comes from the word cooperative. It means cooperation in teaching learning process. In comparative learning process, students interact and cooperative with each other individually as well as in the form of group. They help each other to learn new knowledge. Teachers also facilitate them in cooperative learning and guide them properly (Trianto,2009). Cooperative learning is a shared experience between the students for their learning. In cooperative learning strategy, two or more than two people learn together and help each other (Amir & Ahmadi, 2010). Cooperative learning is group learning activity. In this teaching strategy teacher guide the learner and give them group tasks for better learning. Cooperative learning strategy is helpful for the learner to learn independently and to share their learning into the group. In this strategy learner is not fully dependent on the teacher, group members and on specific textbook or on notes. In cooperative learning strategy, students individually make an effort for their effective learning (wan, 2010).

2.19.6 Inquiry Based Learning

In this teaching strategy, the interaction between the learner and instructor touches high level. Other factors also matters a lot for example environment and subject matter knowledge. According to Haider and Salim (2012) in inquiry based strategy student and teacher have two way interactions. They both interact and ask questions and also analyze these questions through feedback. Inquiry based learning is based on step by step process to gathering the information, like in first step observation about the knowledge and then classifying the information that has been collected through the observation. In this strategy, time is important. Instructor

as well as learner estimates the information that is taken through different sources.

In inquiry-based learning, operationally define the information and then develops the hypothesis of that information. In the next step is based on the interpretation of information by the researcher. In social science, sometimes controlling the environment is difficult but researcher tries to control the variable. In control environment, experiments are based on the sample of the research. At the end of the inquiry base teaching strategy, the result shows in the form of specific knowledge (Kim McMurtry, 2016).

2.19.7 Graphic Organizer

Graphic organizer is a strategy that is use by teachers for the better learning of the learners especially in e-learning. Teacher uses this strategy for effective teaching learning process. It is effective especially for those learners who have difficulty in achieving their learning out comes. According to Fisher & Schumaker (1995) in graphic organizer, there is a concept note, web content, and mind maps etc. Visual presentation of the content is more essential in teaching learning process. Visual representation of the content is more effective for the learner. Through the graphic organizer, organizes content through the visuals. The learner learns affectively through the visualize content. There are some types of graphic organizers like flow chart, concept notes, diagrams, detail charts, story maps, and attributes. These all form of graphics are helpful for the teaching learning process (Haider and salim, 2012).

2.19.8 Differentiated Instruction

In differentiated learning, teachers try to facilitate the whole class. In a class different students have different learning abilities. Teachers accept their differences and facilitate the learners in the given system according to need. A teacher needs to develop the skills to facilitate the learner. These skills can be learning over the time and experience (Kim McMurtry, 2016).

According to Huss, (2015) there are five teaching strategies according to his classification.

a) Direct Instruction Teaching Strategy

In direct teaching strategy, a teacher directly facilitates the learner. In this teaching strategy, deductive approach is used to convey the information towards the learner. In direct instructional strategy, planned and step by step procedure has been used for conveying the information (Huss,2015).

b) Indirect Instruction Teaching Strategy

Indirect instructional strategy is an inductive approach. This strategy is used for different problem-solving methods also for inquiry methods for the better learning of the learner. Direct teaching strategy is teacher centered process and indirect teaching strategy is student centered process. In this teaching strategy teacher plays a vital role of facilitator. Teacher only provides the learning environment and student itself tries to learn the knowledge. In this teaching strategies, students itself take interest and learn from their efforts. Creative abilities of the students with experience become polished through the indirect teaching strategy (wan, 2010).

c) Interactive Teaching Strategy

This teaching strategy encourages the learner to interact with each other and share their knowledge. Most of the time new ideas and creative work enhance through this strategy. Learner discusses and shares the information with each other (Huss,2015).

d) Experiential or Empirical Teaching Strategy

In this teaching strategy, students are at the central point. They learn the knowledge through their personal experience and achieve their goals. Through this strategy analytical abilities of the students become improve as well as learn through their personal experience motivate them but it is time taking activity and too some extent it is costly (Kim McMurtry, 2016).

e) Independent Teaching Strategy

In this type of teaching strategy, the learner is self-motivated and learn through their practical experience. Student itself takes steps for better learning.

Self-motivation is important for using independent teaching strategy (Wan, 2010).

2.20 Teacher and Student Interaction

Teachers and students are trying to adjust in new situation of online education. High expectation is not that good from this new and experimental system of education. Teachers also try to adjust according to the new needs and demands of technology and techniques. Mostly teachers have face to face experience of teaching but in online education, the situation is totally different. Experience of face-to-face education is perfectly useable in e-learning as well. In e-learning, teachers learn from new and different situation (York & Richardson, 2012). There are new problems in this experimental system of education, and then the solutions will also be new. Different factors affect the learning process. In face-to-face education different type of interaction are needed but in online education, way of communication is more important. Knowledge about the education technology also matters a lot. In e-learning, planning is significant element. If the planning is effective then the course and material related to the course become more effective. Feedback and interaction with students is important in online education (Baran, Correia, & Thompson, 2013).

2.21 Quality of Education

In all over the world, Education through electronic devices and their use is increasing day by day. At all over the world different institutes use different methods of e-learning for their students. Different institutes developed their online courses to improve the learning conditions. Instructor, online course developer and technologies are playing a vital role in e-learning system. Through this proper mechanism education quality has improved (Moore & kearsley, 1996).

In this research entitled “Effectiveness of e-learning strategies used at higher education level”. Researcher access different e-learning instructional strategies and these strategies are more effective for the teaching-learning process. Researcher also found the effects of e-learning on teaching strategies of teachers about the teaching learning experience of teachers. Teachers use different teaching strategies in e-learning. This comes under the synchronous mode as well as in asynchronous mode.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter is based on the process of research like research design, research approach, population of the study, size of the sample, sampling technique, validity and, reliability of the research tool. After the pilot testing, researcher finalized the research instruments. Process of data analysis discussed at the end of this chapter.

3.1 Research Approach

This research followed the quantitative paradigm according to the need and demands of objectives and hypothesis of the research. In quantitative approach results of the research had shown in numerical form and analyze through statistical software. After the collection of data, researcher analyzed the data through statistical tests Mean and Linear regression. In current research, quantitative analysis has been used for the checking the “effectiveness of e-learning teaching strategies used at higher level”. Through quantitative analysis, researcher checked the effectiveness of e-learning teaching strategies used at higher education level as well as effects of these strategies on teaching learning experience of teachers.

The main objectives in current study were “to assess the e-learning teaching strategies of teachers at higher education level”, and “to examine the effect of e-learning teaching strategies of teachers on their teaching learning experience at higher education level”. Last objective was “to examine the effect of e-learning teaching strategies on teaching learning experience of teachers based on common departments (Education ,Economics and Masters in business administration)at higher education level” Objectives and hypothesis of the research needs quantitative data that is why researcher selected the quantitative research approach.

3.2 Research Design

According to Kumar (2011) in descriptive research described and discussed the phenomena. In descriptive research discuss the phenomena in the form of question what, when, where and how. In descriptive study test the hypothesis and collect the data through survey form.

Descriptive research is a type of research that discuss the questions what, when,

where and how about the situation. In current research “effectiveness of e-learning strategies used at higher education level” checked the effectiveness of e-learning teaching strategies through the objectives of the study. Objectives were “to assess the e-learning teaching strategies of teachers at higher education level”, and “to examine the effect of e-learning teaching strategies of teachers on their teaching learning experience at higher education level”. Data of the research was collected through the survey forms. In current research data was collected from the teachers of common departments which included education, economics and Masters in business administration from public sector universities of Rawalpindi and Islamabad.

3.3 Population

In this research, researcher selected all faculty members from the departments of education, economics and Masters in business administration in public sector universities in Rawalpindi and Islamabad. Teachers of three common departments and faculty of social sciences and management sciences were chose for data collection. Researcher selected two faculties bust because of lack of time and resources. According to Higher education commission (HEC), 23 public sector universities were functional in Islamabad and Rawalpindi. 319 teachers were working in common departments of public sector universities of Rawalpindi and Islamabad.

Table 3.1

Population of the research

Sr. #	Common departments of (Social sciences & Management Sciences)	Number of Teachers
1	Education	55
2	Economics	93
3	Master’s in Business Administration	171
	Total population	319

3.4 Sampling Techniques

There are different techniques for selection of the sample for the research. These methods and techniques are important in the selection of the sample. Researchers use sampling techniques according to the need of study. Proportionate stratified random technique is one of the sampling techniques. In proportionate stratified sampling technique researcher firstly make strata's. In proportionate stratified sampling technique, there is equally chance for whole sample for selection for the research. In this technique researcher select member from the sample randomly within the strata but in equal proportion. Every member of the sample has equal chance for selection. Through this sampling technique the data collected from the sample and at the end generalized the result of the sample to whole population (Sekaran, 2003).

In this research, researcher used proportionate stratified random sampling technique for the collection of data. Researcher made sub-groups of common departments in this study. Researcher made strata on the bases of common departments which were Education, Economics, and Masters in Business Administration departments of the public sector universities in Rawalpindi and Islamabad. Researcher took sample in equal proportion from the sub-groups that was common departments. Random number generator software was used for selection of sample from the groups. Objective "to examine the effect of e-learning teaching strategies of teachers on their teaching learning experience based on common departments (Education, Economics and Master's in Business Administration) support the sampling technique. Every member of the research under strata has equal chance to be selected.

3.5 Sample size

Population is an overall group of study and sample is a small part of the population. Researcher selects the sample and the result of the sample generalized to the whole population. In research there are many ways for selection of the sample. There are different types of sample selection in research. Through this collect data and then analyze the result of the sample and then generalized the result of the sample to overall population (Sekaran, 2003).

Sample of the current study was the teachers of common departments. Sample of

the research was selected according to the Krejcie and Morgan table for sampling from common departments in public sector universities in Rawalpindi and Islamabad. According to the table if population was 319 then the sample size should be 175. Researcher distributed 175 questionnaires to the respondents. 169 teachers returned the questionnaires. Six respondents did not return questionnaire just because their personal issues. Researcher visited again and again towards the respondents for collection of data. Return rate was 96.5%.

Table 3.2

Sample of the research

Common Departments	Number of teachers in population	Number of teachers in sample	Rate of return	%
Education	55	30	29	
Economics	93	51	48	
Master's in Business Administration	171	94	92	
Total	319	175	169	96.5%

3.6 Research Instrument

Researcher used Survey method for data collection. In 2016 Prof. Peter R. Albion and Dr. Syaril Izwann Jabar used questionnaire related to e-learning teaching strategies. Researcher adapted questionnaire from their work. The second questionnaire related to teaching learning experience of teachers in e-learning was adapted from the work of Dr. Randy Garrison at al. which was used in 2008. 34 items were included in first questionnaire and 32 were in second questionnaire all were based on close ended questions. Tools validations were done through the experts from related field. Through the pilot testing, researcher checked the reliability of the tool.

3.6.1 Likert Scale

Researcher developed the questionnaire on to the Likert scale. For Likert scale the questions in the form of statements and the responses in the form of agree, disagree and between two points. In this research researcher used Likert scale that

was five points Likert scales. 1 stands for Strongly Disagree (SD), 2 stands for Disagree(D), 3 stands for Neutral(N), 4 stands for Agree(A), 5 stands for Strongly Agree(5). Middle point is neutral.

3.7 Sources of Data

Researcher directly collected the data from the faculty members of department's education, economics and Master's in Business Administration of the public sector universities in Rawalpindi and Islamabad, and online survey form was used.

3.8 Research Instrument

Researcher used Survey method for data collection. Researcher used two research tools for the collection of data from the respondents. Details of this tool are given below.

3.8.1 E-Learning Teaching Strategies Tool

In 2016, Prof. Peter R. Albion used and Dr. Syaril Izwann Jabar used Questionnaire related to e-learning teaching strategies. The questionnaire was based on close ended questions. There are 34 items in first questionnaire. Tool validation has been done by the experts of related field. Through the pilot testing, researcher checked the reliability of the tool. Detail of the research instrument has been given in the table number 3.3.

Table 3.3

E-learning teaching strategies tool (total items =34)

E-learning teaching strategies	Items	Item number
Encourages interaction between students and teaching staff	5	1,2,3,4,5
Develops reciprocity and cooperation among students	5	6,7,8,9,10
Encourages active, contextual and meaningful learning	5	11,12,13,14,15
Gives prompt feedback	5	16,17,18,19,20
Emphasizes time on task	4	21,22,23,24
Communicates high expectations	5	25,26,27,28,29
Respects diverse talents and ways of learning	5	30,31,32,33,34

3.8.2 Teaching Learning Experience Research Instrument

The second questionnaire was related to online teaching learning experience of teachers was adapted from the work of D. Randy Garrison et al. was used in 2008. The questionnaire was based on closed ended questions. In second questionnaire there are 32 items which was based on close ended questions. Tool validation was completed through the experts of related field. Through the pilot testing researcher checked the reliability of that tool. Details of the research instrument is given below in the table number 3.4.

Table 3.4

Teaching learning experience tool (total items =32)

Teaching learning experience	Items	Item number
Social presence	8	1,2,3,4,5,6,7,8
Cognitive presence	12	9,10,11,12,13,14,15,16,17,18,19,20
Teaching presence	12	21,22,23,24,25,26, 27,28,29,30,31,32

3.9 Validation of the Instruments

In the present research, the researcher contacted with the experts of related field for the validation of the research tools. Both tools were adapted. Experts validate the face and content validity. Four experts validated the research instrument for final data collection.

Table 3.5

List of Validation experts

Sr.#	Experts	Universities
1.	Dr.shazia zamir	National university of modern languages Islamabad
2.	Dr. Jameela Ashraf	National university of modern languages Islamabad
3.	Dr. Muhammad Samiullah	Allama Iqbal open university Islamabad.
4.	Dr. Muhammad Tanveer Afzal	Allama Iqbal open university Islamabad.

3.10 Pilot Testing of the Instrument

There were two instruments were used for this research. The first instrument was related to e-learning teaching strategies and second instrument was related to online

teaching learning experience of teachers. Through these instruments, data was collected from the respondents. 70 teachers were selected for pilot testing. 90 questionnaires were distributed to the teachers of public sector university of Islamabad. 77 questionnaires returned by the teachers. Seven questionnaires were not fully filled and those were excluded from the pilot testing. Through pilot testing, researcher checked the reliability of the questionnaires. The data collected for pilot testing was not included in final data.

3.11 Reliability of the Instruments

After the pilot testing, researcher checked the reliability of the tools through the statistical software SPSS. 70 questionnaires were selected for pilot testing. After the collection of data, researcher used SPSS software for analyzing that data. The reliability of questionnaire was checked through the value of Cronbach Alpha.

First instrument was related to the e-learning teaching strategies and its overall reliability was .947. The second instrument was about teaching learning experience and its reliability was checked through Cronbach alpha value was .917. Both tools were highly reliable according to the statistics. According to Devillis (2016) if Cronbach Alpha is more than the .80 then it is highly reliable called excellent reliability, the range of Cronbach Alpha between .70 to .80 it considered good reliability and more .65 to .70 is acceptable below .65 is undesirable and less than .60 is unacceptable. *Table 3.6*

Cronbach Alpha reliability of the e-learning teaching strategies scale (pilot testing)

E-learning teaching strategies	Items	Cronbach Alpha Reliability n=70
Encourages interaction between students and teaching staff	5	.902
Develops reciprocity and cooperation among students	5	.904
Encourages active, contextual and meaningful learning	5	.888
Gives prompt feedback	5	.878
Emphasizes time on task	4	.899
Communicates high expectations	5	.902
Respects diverse talents and ways of learning	5	.897
Overall	34	.947

Table 3.6 shown the overall Cronbach Alpha reliability of the e-learning strategies research tool which was .947. The value of Cronbach Alpha is .947 and has had shown the high reliability of research tool. Cronbach Alpha is more than the .80 then it is highly reliable called excellent reliability, the range of Cronbach Alpha between .70 to .80 it considered good reliability and more .65 to .70 is acceptable below .65 is undesirable and less than .60 is unacceptable (Devillis, 2016).

In e-learning teaching strategies, research tool has 34 items. There were seven sub dimensions of the scale. The first e-learning teaching strategy was “encourages interaction between students and teaching staff” had five items value of Cronbach Alpha was .902. “Develops reciprocity and cooperation among students” was the second e-learning teaching strategy had five item value of Cronbach Alpha was .904. The third e-learning teaching strategy was “encourages active, contextual and meaningful learning” there were five items in it and the Cronbach Alpha value was .888. “Gives Prompt feedback” was the fourth e-learning teaching strategy and there were five items into it, Cronbach Alpha value was .878. Fifth e-learning teaching strategy “emphasizes time on task” and Cronbach Alpha value was .899. There were four items into it. “Communicates with high expectations” was sixth e-learning teaching strategy, there were five items included into it and Cronbach Alpha value was .902. Seventh and last e-learning teaching strategy was respects diverse talents and ways of learning, there were five items included into it and Cronbach Alpha value was .897. E-learning teaching strategies scale has shown high reliability value. The sub dimension of the scale also has shown the high reliability results. E-learning teaching strategy “develops reciprocity and cooperation among students” have highest reliability in sub dimensions that was .904.

Table 3.7

Cronbach Alpha reliability of teaching learning experiences scale

Teaching learning experience	Items	Cronbach Alpha Reliability n=70
Social presence	8	.853
Cognitive presence	12	.687
Teaching presence	12	.696
Overall	32	.917

The table 3.7 has shown teaching-learning experience research tool. 32 items were included into it with three sub dimensions; social presence, the second was the cognitive presence and third was teaching presence. Overall reliability of teaching learning experience tool was .917. The value of Cronbach Alpha was .917. This value shows the high reliability of research tool. The first dimension of this scale is social presence. It has eight items and the value of Cronbach Alpha was .853. The second dimension of this scale is cognitive presence and it has twelve items. Reliability of this dimension is .687. The third and last dimension of this tool is teaching presence. It has twelve items and result of this Cronbach Alpha is .696. All sub dimensions have high reliability but social presence has had highest reliability value from all three sub dimensions which has value of .853. if the value of the Cronbach Alpha is more than the .80 then it is highly reliable called excellent reliability, the range of Cronbach Alpha between .70 to .80 it considered good reliability and more .65 to .70 is acceptable below .65 is undesirable and less than .60 is unacceptable (Devillis, 2016).

3.11.1 Inter Item Correlation of E-Learning Strategies Tool

Table 3.8

Inter item correlation of e-learning strategies research tool

Item no	r	Item no	r
EIST 1	.436**	GPF 3	.417**
EIST 2	.378*	GPF 4	.385*
EIST 3	.443**	GPF 5	.530**
EIST 4	.473**	ETT 1	.421**
EIST 5	.560**	ETT 2	.464**
DRCS 1	.388*	ETT 3	.360*
DRCS 2	.385*	ETT 4	.394*
DRCS 3	.621**	CHE 1	.388*
DRCS 4	.438**	CHE 2	.628**
DRCS 5	.411**	CHE 3	.452**
EACML 1	.475**	CHE 4	.381*
EACML 2	.443**	CHE 5	.442**
EACML 3	.398*	RDTWL 1	.541**
EACML 4	.491**	RDTWL 2	.510**
EACML 5	.639**	RDTWL 3	.395*
GPF 1	.599**	RDTWL 4	.589**
GPF 2	.407**	RDTWL 5	.422**

**Correlation is significance at the level of 0.01 (2-tailed)

* Correlation is significance at the level of 0.05 (2-tailed)

Table 3.8 has shown the inter item correlation of the e-learning strategies tool. 34 items were included in e-learning strategy research tool. The table has shown the result .639**, which was highest correlation among item; EACML5 item and .360* was the lowest value of correlation of the item ETT 3.

3.11.2 Inter Item Correlation of teaching Learning Experience Tool

Table 3.9

Inter item correlation of teaching learning experiences research tool

Item no	r	Item no	r
Sp 1	.460**	Cp 9	.496**
Sp 2	.623**	Cp 10	.436**
Sp 3	.513**	Cp 11	.604**
Sp 4	.407**	Cp 12	.555**
Sp 5	.551**	Tp 1	.497**
Sp 6	.507**	Tp 2	.755**
Sp 7	.386*	Tp 3	.707**
Sp 8	.373*	Tp 4	.530**
Cp 1	.403**	Tp 5	.437**
Cp 2	.486**	Tp 6	.584**
Cp 3	.471**	Tp 7	.532**
Cp 4	.407**	Tp 8	.416**
Cp 5	.430**	Tp 9	.441**
Cp 6	.429**	Tp 10	.461**
Cp 7	.443**	Tp 11	.504**
Cp 8	.571**	Tp 12	.710**

**Correlation is significance at the level of 0.01 (2-tailed)

* Correlation is significance at the level of 0.05 (2-tailed)

Table 3.9 shown the inter item correlation of teaching learning experience. 32 items were included in teaching learning experiences research tool. The table shown results and Tp2 was .755** which was highest correlation among items and .373* was the lowest value of correlation of item Sp 8 among all.

3.11.3 Inter Scale Correlation

Table 3.10

Inter scale correlation of e-learning teaching strategies scale

	EIST	DRCS	EACML	GPF	ETT	CHE	RDTWL
EIST	1.000						
DRCS	.615**	1.000					
EACML	.702**	.699**	1.000				
GPF	.702**	.611**	.789**	1.000			
ETT	.422**	.385*	.537**	.725**	1.000		
CHE	.371*	.392*	.468**	.680**	.781**	1.000	
RDTWL	.485**	.482**	.614**	.681**	.639**	.646**	1.000

**Correlation is significance at the level of 0.01 (2-tailed)

* Correlation is significance at the level of 0.05 (2-tailed)

Table number 3.10 has shown the correlation between the sections of the scale. correlation is significance at the level of 0.01. Gives prompt feedback (GPF) and Encourages active, contextual and meaningful learning (EACML) and it has highest correlation of (.789**). The lowest correlation was between communicating high expectation (CHE) and Encouraging interaction between students and teaching staff (EIST) was (.371*).

Table 3.11

Inter scale correlation of teaching learning experience scale pilot testing (n=70)

	SP	CP	TP
SP	1.000		
CP	.575**	1.000	
TP	.572**	.744**	1.000

**Correlation is significance at the level of 0.01 (2-tailed)

* Correlation is significance at the level of 0.05 (2-tailed)

Table number 3.11 has shown the correlation between the sections of the scale. Inter scale correlation has significance at the level of 0.01. TP stands for teaching presence and

CP stand for cognitive presence and has highest correlation of .744**. The lowest correlation between Teaching presence and social presence was .572**.

3.12 Data Collection

Researcher personally collected the data from the sample for research. In survey, close ended questions were included. Teachers were the sample for the research. Quantitative research tool was distributed to the teachers and reliability has been checked through the pilot testing.

3.13 Data Analysis Technique

There were 180 questionnaires distributed to the teachers and 175 teachers returned questionnaire. Five teachers did not give back the questionnaires. Male as well as female teachers were included in research. Researcher checked the questionnaire before the date inter into SPSS software. There were 6 questionnaires were not properly filled. 169 questionnaires were used for final research analysis. Two statistical tests were used to generate the results for current research first statistical test was “Mean” and second one was “linear regression” test. Linear regression test was applied because through linear regression checked the effect of e-learning teaching strategies on teaching learning experience of teachers at higher education level.

3.14 Data analysis of the research and statistical tests

Table 3.12

Data analysis of the research/ statistical tests applied

Items	Hypothesis /research questions	Statistical test
Objective # 1 To assess the e-learning teaching strategies of teachers at higher education level.	What are the e-learning teaching strategies of teachers at higher education level?	Mean test
Objective # 2 To assess the teaching learning experience of teachers at higher education level	What is the teaching learning experience of teachers at higher education level?	Mean test

Objective # 3

To examine the effect of e-learning teaching strategies of teachers on their teaching learning experience at higher education level.

3a. To explore the effect of e-learning teaching strategies of teachers with reference of encouraging interaction between students and teaching staff on their teaching learning experience at higher education level.

3b. To explore the effect of e-learning teaching strategies of teachers with reference of develops reciprocity and cooperation among students on their teaching learning experience at higher education level.

3c. To explore the effect of e-learning teaching strategies of teachers with reference of encourages active, contextual and meaningful learning on their teaching learning experience at higher education level.

H01. There is no significance effect of e-learning teaching strategies on their teaching learning experience of teachers at higher education level. Regression analysis

H01a. There is no significant effect of e-learning teaching strategies of teachers with reference of encouraging interaction between students and teaching staff on their teaching learning experience at higher education level.

H01b. There is no significant effect of e-learning teaching strategies of teachers with reference of develops reciprocity and cooperation among students on their teaching learning experience at higher education level.

H01c. There is no significant effect of e-learning teaching strategies of teachers with reference of encourages active, contextual and meaningful learning on their teaching learning experience at higher education level.

H01d. There is no significant effect of e-learning teaching strategies of teachers with reference of gives prompt feedback on their teaching

3d. To explore the effect of e-learning teaching strategies of teachers with reference of gives prompt feedback on their teaching learning experience at higher education level.

3e. To explore the effect of e-learning teaching strategies of teachers with reference of emphasizes time on task on their teaching learning experience at higher education level.

3f. To explore the effect of e-learning teaching strategies of teachers with reference of communicates high expectations on their teaching learning experience at higher education level.

3g. To explore the effect of e-learning teaching strategies of teachers with reference of respects diverse talents and ways of learning on their teaching learning experience at higher education level.

learning experience at higher education level.

H01e. There is no significant effect of e-learning teaching strategies of teachers with reference of emphasizes time on task on their teaching learning experience at higher education level.

H01f. There is no significant effect of e-learning teaching strategies of teachers with reference of communicates high expectations on their teaching learning experience at higher education level.

H01g. There is no significant effect of e-learning teaching strategies of teachers with reference of respects diverse talents and ways of learning on their teaching learning experience at higher education level.

Objective # 4

To examine the effect of e-learning teaching strategies of

H02 There is no significance effect of e-learning teaching strategies of teachers on their teaching learning

Regression analysis

teachers on their teaching experience at higher education learning experience based on level based on common departments (Economics, Education and MBA/BBA).

at higher education level.

4a. To examine the effect of e-learning teaching strategies of teachers on their teaching learning experience based on Education department at higher education level.

4b. To examine the effect of e-learning teaching strategies of teachers on their teaching learning experience based on Economics department at higher education level.

4c. To examine the effect of e-learning teaching strategies of teachers on their teaching learning experience based on Masters in business Administration department at higher education level.

H₀2_a. There is no significant effect of e-learning teaching strategies of teachers on their teaching learning experience based on education department at higher education level.

H₀2_b. There is no significant effect of e-learning teaching strategies of teachers on their teaching learning experience based on economics department at higher education level.

H₀2_c. There is no significant effect of e-learning teaching strategies of teachers on their teaching learning experience based on Masters in business Administration departments at higher education level.

3.15 Interpretation of Demographic Information of the Respondents

In the present section, researcher interprets the data that was gathered from the respondents according to their demographics. Different demographics of the respondents were used like gender, age, universities, departments, qualification and work experience.

Table 3.13

Distribution of respondents according to their gender (n=169)

Sr.#	Gender	Frequency	Percentage (%)
1.	Male	57	33.7
2.	Female	112	66.3
	Total	169	100

Table number 3.13 has been shown the findings of respondents according to their gender. In present research, gender was divided into two groups; first one is male and other is female. There was total 169 respondents. 57 were male respondents and 112 were female teachers. There were 33.7 % male teachers and 66.7 % were female faculty members. Female respondents were more in numbers than male respondents. Graphic representations of gender shown in figure no 3.1.

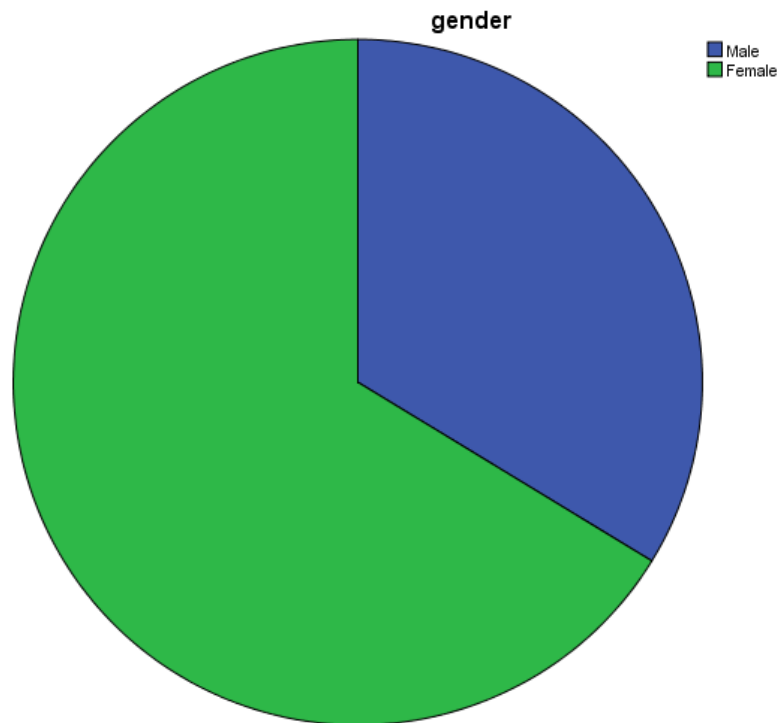


Figure # 3.1 divisions of respondents according to their gender

Table 3.14

Distribution of respondents according to their age

Sr. #	Age	Frequency	Percentage (%)
1.	25-30	36	21.3
2.	31-35	50	29.6
3.	36-40	50	29.6
4.	40 above	33	19.5
	Total	169	100

Table number 3.14 has shown the findings of respondents according to their age. Age was divided into four groups. Teachers were belonging from different age groups. There was total 169 respondents. Thirty-six (36) teachers were from the first age group that was started from 25-30 years and percentage was 21.3 %. Fifty (50) teachers were from the second age group that was from 31-35 years and percentage was 29.6%. Fifty (50) teachers were from the third age group that was from 36-40 years and percentage was 29.6 %. Thirty-three (33) teachers were from the fourth age group that was started from 40 above and percentage was 19.5%. Most of the teachers were belonging from the second and third age group that was from 31-35 and 36-40. The graphic representation of age groups has shown in figure no 3.2

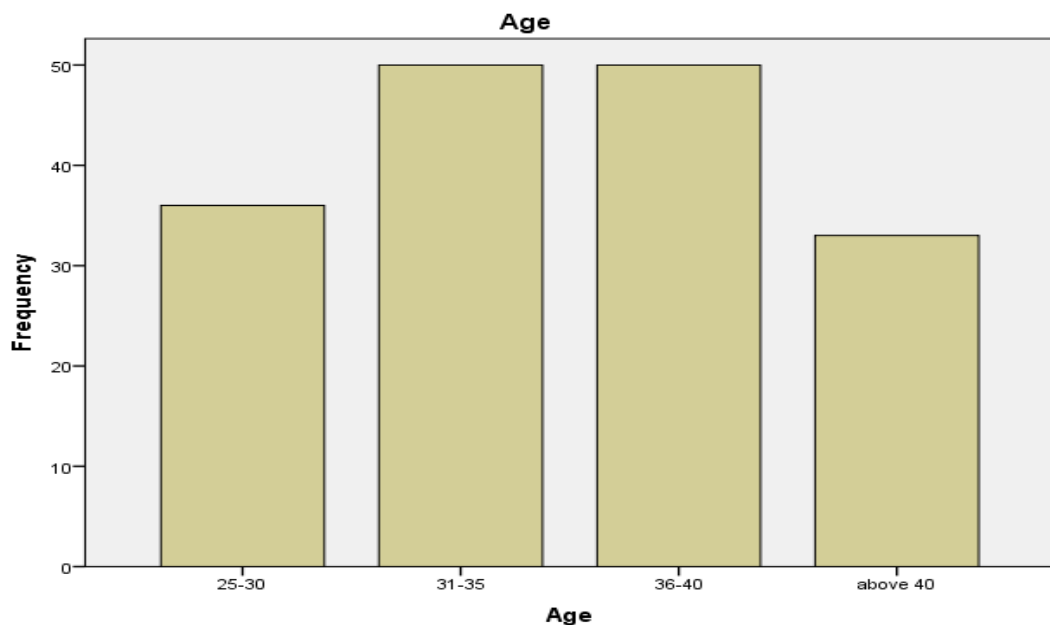
*Figure # 3.2 divisions of respondents according to their age*

Table 3.15

Distribution of respondents according to their universities

Sr. #	Universities	Frequency	Percentage (%)
1.	IIUI	56	33.1
2.	NUML	64	37.9
3.	FJWU	21	12.4
4.	ARID	28	16.6
	Total	169	100

Table number 3.15 has shown the findings of respondents according to their universities. Teachers were belonging from four different universities. Fifty-six (56) teachers were from the international Islamic university Islamabad (IIUI) and that is 33.1% of total percentage. Sixty-four (64) teachers were from the National University of modern Languages Islamabad (NUML) and that was 37.9 % of total percentage. Twenty-one (21) teachers belonged from the Fatima Jinnah Women University Rawalpindi and that was 12.4 % of total percentage. Twenty-eight (28) teachers were from the Arid agriculture university Rawalpindi and that was 16.6% of total percentage. Most of the teachers were from the NUML University and that was 37.9%. The graphic representation of universities has shown in figure no 3.3

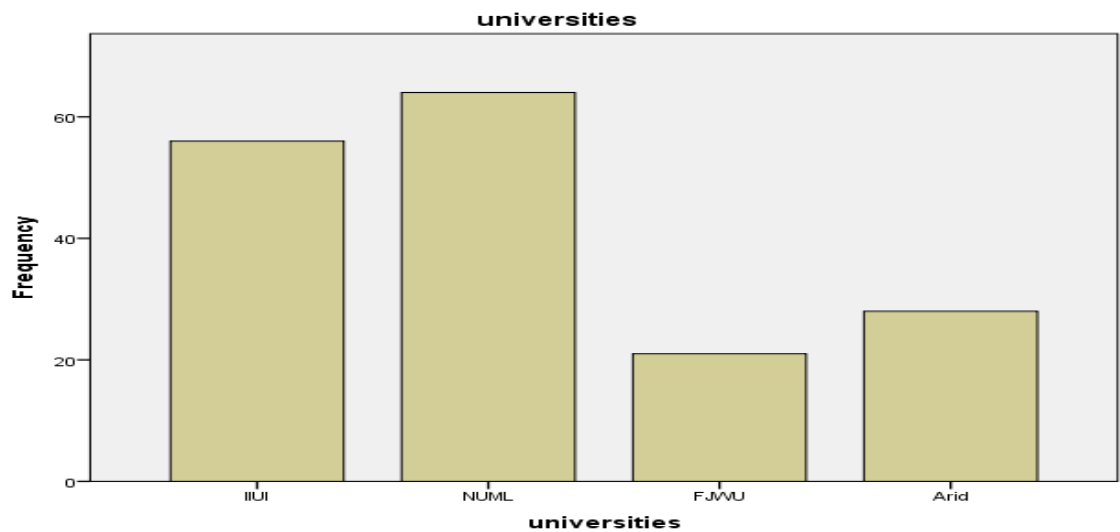


Figure # 3.3 divisions of respondents according to their university

Table 3.16

Distribution of respondents according to their departments

Sr. #	Departments	Frequency	Percentage (%)
1.	Education	29	17.2
2.	Economics	48	28.4
3.	Master's in Business Administration	92	54.4
	Total	169	100

Table number 3.16 has shown the findings of respondents according to their departments. Teachers were belonging from three departments of different universities. Twenty-nine (29) teachers were from the education department and that was 17.2% of total percentage. Forty-eight (48) teachers were from the economics department and that was 28.4 % of total percentage. Ninety-two (92) teachers were from the management sciences department and that was 54.4 % of total percentage. Most of the teachers were belonging from the management sciences. The graphic representation of departments has been shown in figure no 3.4.

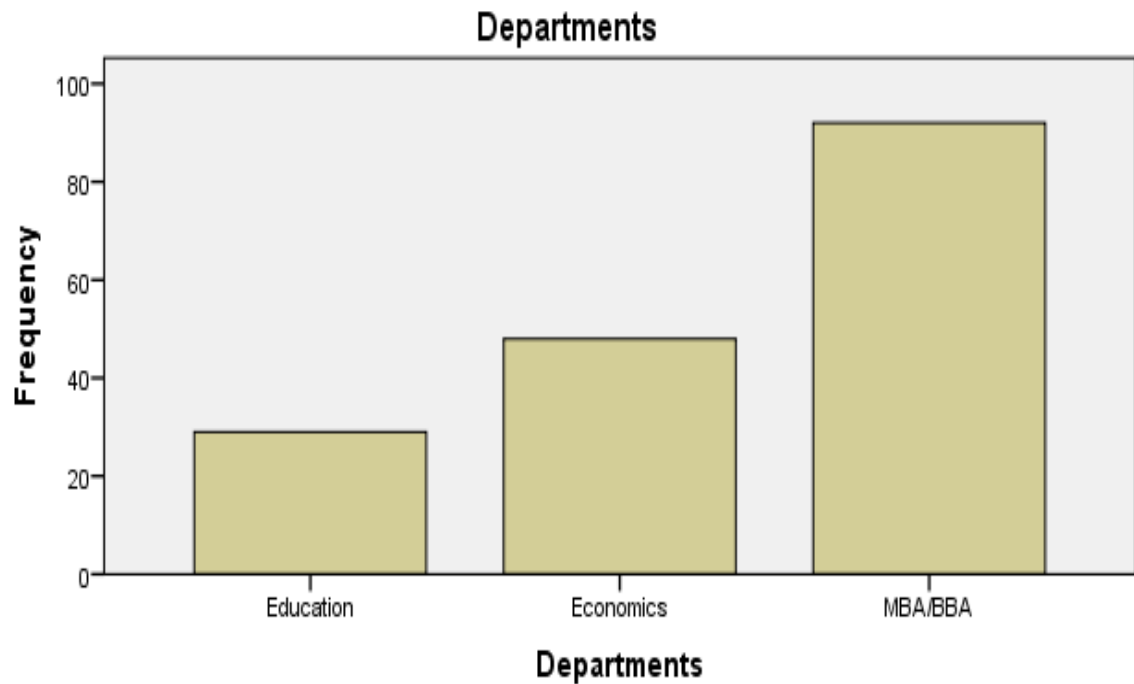


Figure # 3.4 divisions of respondents according to their departments.

Table 3.17

Distribution of respondents according to their qualification

Sr. #	Qualification	Frequency	Percentage (%)
1.	M.A/M.sc	26	15.4
2.	M.Phil	66	39.1
3.	PHD	71	42
4.	More	6	3.6
	Total	169	100

Table number 3.17 shown the findings of respondents according to their qualification. Qualification was divided into four groups that was M.A/M.sc, M.phil, PhD and more. Teachers have had different levels of qualification. Twenty-six (26) teachers have masters level of education and that was 15.4% of total percentage. Sixty-six (66) teachers had M.Phil qualification and that was 39.1% of total percentage. Seventy-one (71) teachers had PhD qualification and that was 42 % of total percentage. Six (teachers) have more qualification and that was 3.6%. Most of the teachers have PhD qualification and that was 42% of total sample. The graphic represented the qualification of the participants shown in figure no 3.5.

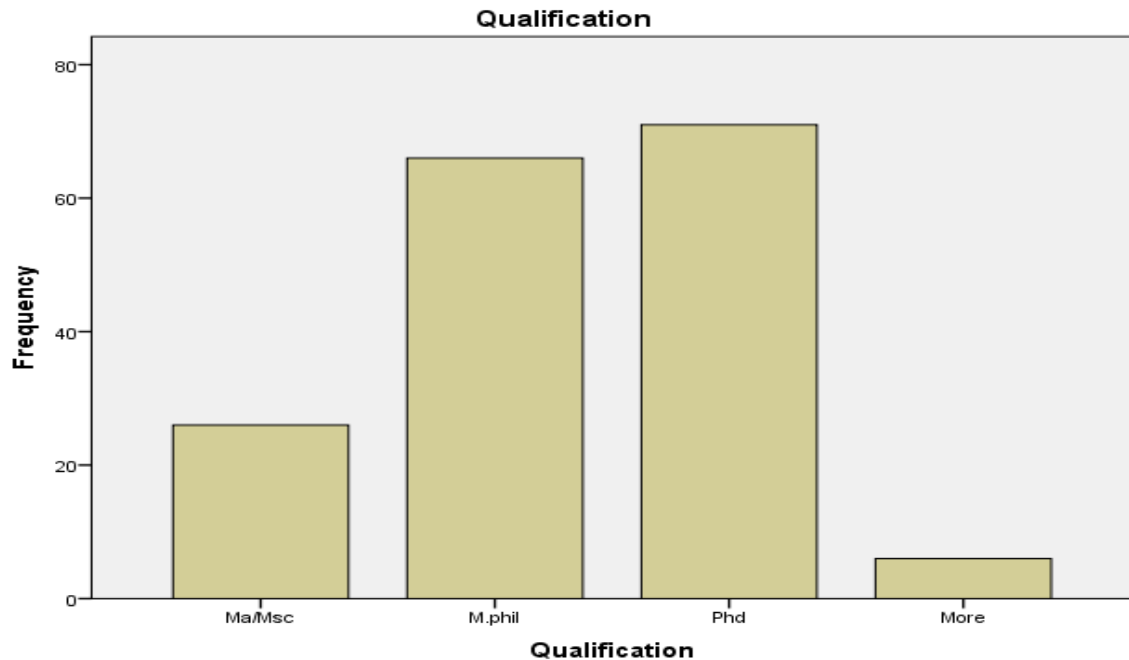


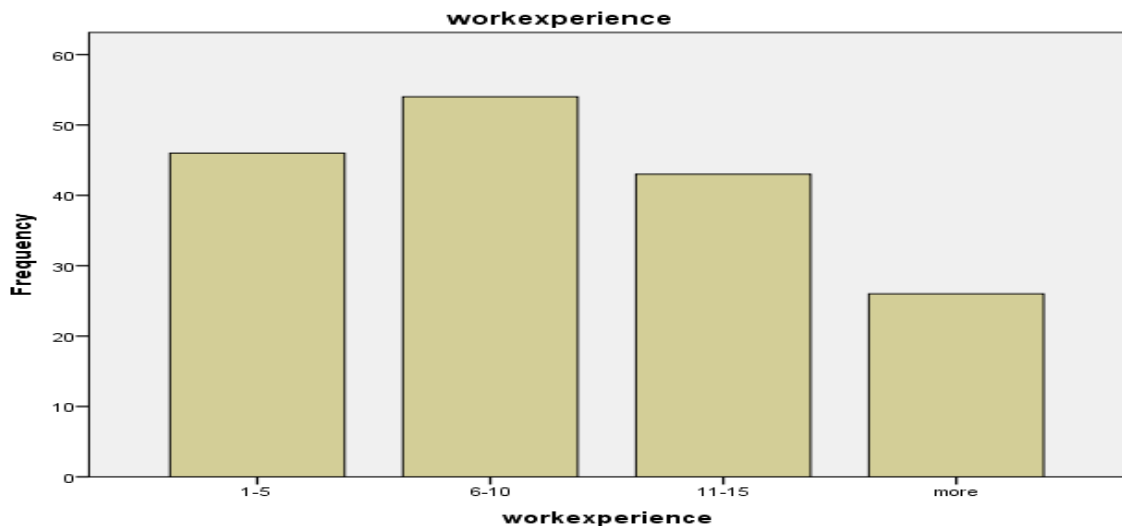
Figure # 3.5 divisions of respondents according to their qualification.

Table 3.18

Distribution of respondents according to their work experience

Sr. #	Work experiences (years)	Frequency	Percentage (%)
1.	1-5	46	27.2
2.	6-10	54	32
3.	11-15	43	25.4
4.	15 above	26	15.4
	Total	169	100

Table number 3.18 presented the findings of the respondents according to their work experience. Teachers had different work experiences. Work experiences were divided into four groups. Teachers were belonging from different groups of work experiences. Forty-six (46) teachers were from the first group of work experience that was from 1-5 years that is 27.2% of total percentage. Fifty-four (54) teachers were from the second group of work experience that was from 6-10 years that is 32% of total percentage. Forty-three (43) teachers were from the third group of work experience that was from 11-15 years and that was 25.4% of total percentage. Twenty-six (26) teachers were from the fourth group of work experience that was stated from 15 and above years that was 15.4 % of total percentage. Most of the teachers were from the second group of work experience that was 6-10 years of work experience. The graphic representation of work experience had shown in figure number 3.6.

*Figure # 3.6 divisions of teachers according to their work experience*

3.16 Research Ethics

Searcher followed all the ethics of research during the whole study. Researcher took permission before taking data from the respondents of the research verbally as well as written permission took from the respondents of the research. Researcher gave respect to the respondents and ensured that data must be used for only research purpose. Researcher did not misinterpret the data during the current research. Researcher did not give personal judgment into the research results. Researcher saved the data and confidentiality was the first preference. Researcher tried to done her own work, and did not plagiarized work included in the research.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

In this chapter researcher interpreted the data and analyzed it through statistical tests. Interpretation of data is in tabular form. Researcher used descriptive research design which was quantitative in nature. There were two variables used in this research. First variable was independent variable e-learning teaching strategies and second was dependent variable that was teaching learning experience of teachers. In independent variable e-learning teaching strategies were seven teaching strategies and dependent variable, teaching learning experience of teacher has three sub-parts. In present research, researcher used two tools to checked effectiveness of e-learning strategies used at higher education level. First one was e-learning teaching strategies tool and second one was teaching learning experience research tool. After the collection of data, researcher analyzed the data through the statistical software SPSS. Statistical tests were also used like Mean and regression analysis.

In this section analysis were done in light of research objectives and hypothesis. Statistical test applied for generating results. Statistical software SPSS used for applies the tests. After the application of test interpret the results. Mean and regression analysis tests were applied on the data.

4.2 Analysis of the Research on the Bases of Objectives and Hypothesis.

According to objectives and hypothesis, researcher discussed the data in given section. Analysis depended on independent variable and dependent variables. Variables had different sub dimensions.

Objective number 1: “To assess the e-learning teaching strategies of teachers at higher education level”.

Research question: What are the e-learning teaching strategies of teachers at higher education level?

Table 4.1

E-learning teaching strategies mean score

E-learning teaching strategies	Mean	Remarks
Encourages interaction between students and teaching staff	4.10	Agree
Develops reciprocity and cooperation among students	4.12	Agree
Encourages active, contextual and meaningful learning	4.09	Agree
Gives prompt Feedback	4.09	Agree
Emphasizes time on task	4.21	Agree
Communicates high expectations	4.16	Agree
Respects diverse talents and ways of learning	4.06	Agree
Overall	4.12	Agree

Table 4.1 presented the mean results of the e-learning teaching strategies used at higher education level by the teachers. Researcher used five points Likert scales for the collection of responses from the teachers. E-learning teaching strategies tool were based on seven e-learning teaching strategies. Above mentioned table showed the mean score, of e-learning teaching strategies. SPSS software was used to check the mean score of the objective one. Overall mean score of e-learning teaching strategies were 4.12 which showed that most of the teachers were agree with the statements. Mean value of “emphasizes time on task” e-learning teaching strategy was 4.21. It showed that according to the teachers, emphasizes time on task was most effective e-learning teaching strategy currently used at higher education level. According to the results of mean score “emphasizes time on task” showed that most of the teachers were agree with it. “Communicates high expectations” was the second most effective e-learning teaching strategy. Mean score of the “communicates high expectations” e-learning teaching strategy was 4.16. “Develops reciprocity and cooperation among students” was the third most effective e-learning teaching strategy. Mean value of “develops reciprocity and cooperation among students” was 4.12. E-learning teaching strategy “encouraged interaction between students and teaching staff” mean score was 4.10 and it was forth effective e-learning teaching strategy. “Develops reciprocity and cooperation among students” was the fifth effective e-learning teaching strategy. The mean score was 4.12. According to these

findings, both teaching strategies “encouraging active, contextual and meaningful learning” and “gave prompt feedback” both had same mean scores which was 4.09. It showed that according to the teachers, both e-learning teaching strategies holds sixth position according to the mean score. Respects diverse talents and ways of learning had the mean value of 4.06 and that was the least value from all results. According to the mean results “respects diverse talents and ways of learning” was the least effective e-learning teaching strategy.

Objective number 2: “To assess the teaching learning experience of teachers at higher education level”.

Research question: What is the teaching learning experience of teachers at higher education level?

Table 4.2

Teaching learning experiences mean score

Teaching learning experience	Mean	Remarks
Social presence	3.75	Agree
Cognitive presence	3.89	Agree
Teaching presence	4.02	Agree
Overall	3.91	Agree

Table number 4.2 showed the mean results of the teaching learning experience of teachers and their sub dimensions. There were three sub-dimensions of the variable. Five points Likert scales were used for the collection of the data from the responses and teachers. Scale based on five levels; strongly disagree to strongly agree.

In above tables, the values were mention which has shown that the mean values of teaching learning experience of teachers as a whole was 3.91. It meant most of the teachers agreed with statements of the teaching learning experiences tool. There were three factors are important for effective teaching learning experience of teachers. According to the mean score “teaching presence” had the highest mean score that was 4.02. “Cognitive presence” had 3.89 mean score and “social presence” had 3.75 mean score. Teaching presence is very

important factor in teaching learning experience of teachers at higher education level according to the result of the findings. Teaching presence was most important factor for teaching learning experience.

Objective number 3: “To examine the effect of E-learning teaching strategies of teachers on their teaching learning experience at higher education level.

Ho1: “There is no significance effect of E-learning teaching strategies on their teaching learning experience at higher education level.

Table 4.3

E-learning teaching strategies effect on teaching learning experience of teachers at higher education level

Independent variable	Dependent variable	β coefficient	t	R- square	sig.
E-learning teaching strategies	Teaching learning experience	0.543	8.363	0.295	0.000

Table number 4.3 showed the results of independent variable that was based on e-learning teaching strategy of teachers on dependent variable teaching learning experience of teachers. β value was 0.543 and t value was 8.363. R-square value was 0.295 and significance value was 0.000. R-square value was 0.295 it shows that independents variable e-learning teaching strategies 29.5% effect on teaching learning experience of teachers and other factor also affect the teaching learning experience of teachers. β (coefficient) value was 0.543 it showed that e-learning teaching strategies had positive effect on teaching learning experience of teachers. β (coefficient) value showed that if one unit increase in independent variable e-learning teaching strategies can increased 0.543 units on dependent variable that was based on teaching learning experience of teachers. Statistically Significance level of β (coefficient) was 0.01. P value was 0.000 that was less than 0.05 (significance level). Significance value (P) 0.000 showed that there were significant effect of independent variable e-learning teaching strategies on dependent variable that was teaching learning experience of teachers.

Thus Ho1 “There is no significance effect of e-learning teaching strategies on their teaching learning experience at higher education levels” was rejected.

Objective number 3(a): “To examine the effect of e-learning teaching strategies of teachers with reference of encouraging interaction between students and teaching staff on their teaching learning experience at higher education level”.

H₀₁(a): “There is no significant effect of e-learning teaching strategies of teachers with reference of encouraging interaction between students and teaching staff on their teaching learning experience at higher education level”.

Table 4.4

E-learning teaching strategy “encourages interaction between students and teaching staff” effect on teaching learning experience of teachers at higher education level.

Independent variable	Dependent variable	β coefficient	T	R-square	sig.
Encourages interaction between students and teaching staff	Teaching and learning experience	.464	6.761	.215	0.000

Table number 4.4 showed the results of independent variable that encouraged interaction between students and teaching staff based on e-learning teaching strategy of teachers on dependent variable that was teaching learning experience of teachers. β value was 0.464 and t value was 6.761. Value of R-square was 0.215 and significance value was 0.000. R-square value showed that independent variable “encourages interaction between students and teaching staff” 21.5% effect on teaching learning experience of teachers and other factor also affected the teaching learning experience of teachers. β (coefficient) value was 0.464 and it showed the positive effect on dependent variable. β (coefficient) value reported that if one unit increases in independent variable that was “encourages interaction between students and teaching staff” could increase 0.464 units increased in dependent variable that was teaching learning experience of teachers.

Statistically Significance level of β (coefficient) was 0.01. Significance value was 0.000 that was less than 0.05 (significance level). Significance value (P) 0.000 had shown significant effect of independent variable encourages interaction between students and teaching staff on dependent variable that was teaching learning experience of teachers.

Thus $H_01(a)$ “There is no significant effect of e-learning teaching strategies of teachers with reference of encouraging interaction between students and teaching staff on their teaching learning experience at higher education level” was rejected.

Objective no 3(b): “To examine the effect of e-learning teaching strategies of teachers with reference of develops reciprocity and cooperation among students on their teaching learning experience at higher education level.

$H_01 (b)$: “There is no significant effect of e-learning teaching strategies of teachers with reference of develops reciprocity and cooperation among students on their teaching learning experience at higher education level”.

Table 4.5

E-learning teaching strategy develops reciprocity and cooperation among students’ effect on teaching learning experience of teachers at higher education level

Independent variable	Dependent variable	β coefficient	t	R-square	sig.
Develops reciprocity and cooperation among students	Teaching learning experience	.391	5.488	.153	0.000

Table number 4.5 reported that the effect of independent variable “develops reciprocity and cooperation among students” e-learning teaching strategy of teachers on dependent variable that was “teaching learning experience” of teachers β value was 0.391 and t value was 5.488. R-square value was 0.153 and significance value was 0.000. The R square value was 0.153 and that showed independent variable which “develops reciprocity and cooperation among students” and it had 15.3% effects on teaching learning experience of teachers and other factors were also affected the teaching learning experience of

teachers. β (coefficient) value was 0.391 it showed that the effect was positive. β (coefficient) value showed that if one unit increased in independent variable it “develops reciprocity and cooperation among students” can increased 0.391 units in dependent variable that was “teaching learning experience” of teachers.

Statistically significance level of β (coefficient) was 0.01. Significance value (P) 0.000 showed that there was significant effect of independent variable “develops reciprocity and cooperation among students” on dependent variable that was “teaching learning experience” of teachers.

Thus $H_01(b)$ “There is no significant effect of e-learning teaching strategies of teachers with reference of develops reciprocity and cooperation among students on their teaching learning experience at higher education level” was rejected.

Objective number 3(c): “To examine the effect of e-learning teaching strategies of teachers with reference of Encourages active, contextual and meaningful learning on their teaching learning experience at higher education level”.

$H_01(c)$: “There is no significant effect of e-learning teaching strategies of teachers with reference of encourages active, contextual and meaningful learning on their teaching learning experience at higher education level”.

Table 4.6

E-learning teaching strategy encourages active, contextual and meaningful learning effect on teaching learning experience of teachers at higher education level

Independent variable	Dependent variable	β coefficient	t	R-square	sig.
Encourages active, contextual and meaningful learning	Teaching learning experience	.337	4.624	.113	0.000

In table number 4.6 showed the results β value was 0.337 and t value was 4.624. R-square value was 0.113 and significance (p) value was 0.000. The R square value was 0.113 it showed that the independent variable “encourages active, contextual and meaningful learning” had 11.3% effect on teaching learning experience of teachers and other factors also effected the teaching learning experience of teachers. β (coefficient) value was 0.337 it has shown that the effect was positive. β (coefficient) value showed that if one unit increased in independent variable that “encourages active, contextual and meaningful learning” can increase 0.337 units in dependent variable that was teaching learning experience of teachers. Statistically Significance level of β (coefficient) was 0.01. Significance value (P) 0.000 showed that there was significant effect of “encourages active, contextual and meaningful learning” on teaching learning experience of teachers.

Thus $H_{01}(c)$ “There is no significant effect of e-learning teaching strategies of teachers with reference of encourages active, contextual and meaningful learning on their teaching learning experience at higher education level” was rejected.

Objective number 3(d): “To examine the effect of e-learning teaching strategies of teachers with reference of gives prompt feedback on their teaching learning experience at higher education level”.

$H_{01}(d)$: “There is no significant effect of e-learning teaching strategies of teachers with reference of gives prompt feedback on their teaching learning experience at higher education level”.

Table 4.7

E-learning teaching strategy “gives prompt feedback” effect on teaching learning experience of teachers at higher education level

Independent variable	Dependent variable	β coefficient	t	R-square	sig.
Gives prompt feedback	Teaching learning experience	.439	6.311	.193	0.000

Table number 4.7 resulted that β value was 0.439 and t value was 6.311. R-square value was 0.193 and significance value (p) was 0.000.

The R square value was 0.193 and it showed that “give prompt feedback” 19.3%

affected on teaching learning experience of teachers, and other factors also effect the teaching learning experience of teachers. β (coefficient) value was 0.439 which had shown that the effect was positive and if one unit increased in “gives prompt feedback” increased 0.439 units in teaching learning experience of teachers. Statistically significance level of β (coefficient) was 0.01. Significance value (P) 0.000 had shown that there was significant effect of “gives prompt feedback on teaching learning experience of teachers.

Thus H_{01} (d) “There is no significant effect of e-learning teaching strategies of teachers with reference of gives prompt feedback on their teaching learning experience at higher education level” was rejected.

Objective number 3(e): “To examine the effect of e-learning teaching strategies of teachers with reference of emphasizes time on task on their teaching learning experience at higher education level”.

H_{01} (e): “There is no significant effect of e-learning teaching strategies of teachers with reference of emphasizes time on task on their teaching learning experience at higher education level”.

Table 4.8

E-learning teaching strategy “emphasizes time on task” effect on teaching learning experience of teachers at higher education level

Independent variable	Dependent variable	β coefficient	t	R-square	sig.
Emphasizes time on task	Teaching learning experience	.505	7.557	.255	0.000

The table number 4.8 reported the results β value was 0.505 and t value was 7.557. R-square value was 0.255 and significance value was 0.000. R-square value was 0.255 it showed that “emphasizes time on task” 25.5% effect on teaching learning experience of teachers and other factor also effects the teaching learning experience of teachers. β (coefficient) value was 0.505 it showed that the effect was positive if one unit increase in “emphasizes time on task” it increased 0.505 units in dependent variable that was teaching learning experience of teachers. Statistically significance level of β (coefficient) was 0.01.

Significance value (P) 0.000 reported that there was significant effect “emphasizes time on task on teaching learning experience of teachers.

Thus $H_{01}(e)$ “There is no significant effect of e-learning teaching strategies of teachers with reference of emphasizes time on task on their teaching learning experience at higher education level” was rejected.

Objective number 3(f): “To examine the effect of e-learning teaching strategies of teachers with reference of communicates high expectations on their teaching learning experience at higher education level”.

$H_{01}(f)$: “There is no significant effect of e-learning teaching strategies of teachers with reference of communicates high expectations on their teaching learning experience at higher education level”.

Table 4.9

E-learning teaching strategy “communication high expectation” effect on teaching learning experience of teachers at higher education level.

Independent variable	Dependent variable	β coefficient	t	R-square	sig.
Communicates high expectations	Teaching learning experience	.421	5.994	.177	0.000

Table number 4.9 showed the results β value was 0.421 and t value was 5.994. R-square value was 0.177 and significance value was 0.000. R square value was 0.177 and that showed “communicates high expectations” 17.7% effect on teaching learning experience of teachers and other factor also affect the teaching learning experience of teachers. β (coefficient) value was 0.421 it showed that the effect was positive if one unit increased in “communicates high expectations” can be increased 0.421 units in teaching learning experience of teachers. Statistically Significance level of β (coefficient) was 0.01. Significance value (P) 0.000 showed that there was significant effect of “communicates high expectations on teaching learning experience of teachers.

Thus $H_{01}(f)$ “There is no significant effect of e-learning teaching strategies of teachers with reference of communicates high expectations on their teaching learning experience at higher education level” was rejected.

Objective number 3(g): “To examine the effect of e-learning teaching strategies of teachers with reference of respects diverse talents and ways of learning on their teaching learning experience at higher education level”.

H₀1(g): “There is no significant effect of e-learning teaching strategies of teachers with reference of respects diverse talents and ways of learning on their teaching learning experience at higher education level.

Table 4.10

E-learning teaching strategy “respects diverse talents and ways of learning” effect on teaching learning experience of teachers at higher education level.

Independent variable	Dependent variable	β coefficient	t	R-square	sig.
Respects diverse talents and ways of learning	Teaching learning experience	.542	8.342	.294	0.000

Table number 4.10 showed the result, the β value was 0.542 and t value was 8.342. Value of R-square was 0.294 and significance value was 0.000. However, 0.294 was the value of R-square and it showed that “respects diverse talents and ways of learning” 29.4% effect on teaching learning experience of teachers, and other factor also affect the teaching learning experience of teachers. β (coefficient) value was 0.542 it showed that the effect was positive and if one unit was increased in “respects diverse talents and ways of learning” can increase 0.542 units in teaching learning experience of teachers. Statistically Significance level of β (coefficient) was 0.01, (P) value 0.000 showed that there was significant effect of independent variable respects diverse talents and ways of learning on dependent variable that was teaching learning experience of teachers.

Thus H₀1(g) “There is no significant effect of e-learning teaching strategies of teachers with reference of respects diverse talents and ways of learning on their teaching learning experience at higher education level” was rejected.

4.3 Strata wise results of common departments

Objective number 4: To examine the effect of e-learning teaching strategies of teachers on their teaching learning experience based on common departments (Education, Economics and MBA/BBA) at higher education level.

H₀2 There is no significant effect of e-learning teaching strategies of teachers on their teaching learning experience based on education department at higher education level.

Table 4.11

E-learning teaching strategies effect on teaching learning experience of teachers at higher education level based on education department.

Independent variable	Dependent variable	β coefficient	t	R-square	sig.
E-learning teaching strategies	Teaching learning experience	.498	2.981	.248	.006

*P<0.01

**P<0.05

In table 4.11 the results of e-learning teaching strategies on the bases of education department effect on teaching learning experience of teachers at higher education level were discussed. The reported R-square value was .248 it showed that according to the teachers of education department e-learning teaching strategies 24.8% had an effect on teaching learning experience of teachers at higher education level. β value was .498 and it showed that the effect of e-learning teaching strategies was positive on teaching learning experience. β value also showed that if one unit increased in e-learning teaching can increase .498 units in teaching learning experience of teachers. Significance level of beta coefficient was 0.01. Significance (p) value was 0.006 that was less than 0.05 it shows that there was significant effect of independent variable e-learning teaching strategies on dependent variable teaching learning experience.

Thus H₀₂. There is no significant effect of e-learning teaching strategies of teachers on their teaching learning experience based on education department at higher education level was rejected.

Objective number 4b: To examine the effect of e-learning teaching strategies of teachers on their teaching learning experience based on Economics department at higher education level.

H_{02b}. There is no significant effect of e-learning teaching strategies of teachers on their teaching learning experience based on economics departments at higher education level.

Table 4.12

E-learning teaching strategies effect on teaching learning experience of teachers at higher education level based on economics department.

Independent variable	Dependent variable	β coefficient	t	R-square	sig.
E-learning teaching strategies	Teaching learning experience	.605	5.152	.366	.000

In table 4.12 showed the results of e-learning teaching strategies on the bases of economics department effect on teaching learning experience of teachers at higher education level. R-square vale was .366 it showed that according to the teachers of economics department e-learning teaching strategies had 36.6 % effect on teaching learning experience of teachers at higher education level. β value was .605 and it showed that the effect of e-learning teaching strategies was positive on teaching learning experience. β value showed that if one unit increased in e-learning teaching can increased .605 units in teaching learning experience of teachers. Significance level of β coefficient was 0.01. Significance (p) value was 0.000 that was less than 0.05 it showed that there was significant effect of independent variable e-learning teaching strategies on dependent variable teaching learning experience.

Thus H_{02b}. There is no significant effect of e-learning teaching strategies of teachers on their teaching learning experience based on economics department at higher education level was rejected.

Objective number 4c. To examine the effect of e-learning teaching strategies of teachers on their teaching learning experience based on Masters in business Administration department at higher education level.

H_{02c}. There is no significant effect of e-learning teaching strategies of teachers on their teaching learning experience based on Master's in business Administration department at higher education level.

Table 4.13

E-learning teaching strategies effect on teaching learning experience of teachers at higher education level based on Masters in Business Administration (MBA) department.

Independent variable	Dependent variable	β coefficient	t	R-square	sig.
E-learning teaching strategies	Teaching learning experience	.508	5.596	.258	.000

In table 4.13 showed the results of e-learning teaching strategies on the bases of Masters in Business Administration department effect on teaching learning experience of teachers at higher education level. According to the results R-square value was .258 it showed that according to the teachers of Masters in Business Administration department e-learning teaching strategies had 25.8% effect on teaching learning experience of teachers at higher education level. β value was .508 and it showed that the effect of e-learning teaching strategies was positive on teaching learning experience. β value also showed that if one unit increased in e-learning teaching strategies can be increased .508 units in teaching learning experience of teachers. Significance level of beta coefficient was 0.01. Significance (p) value was 0.000 that was less than 0.05 it shows that there was significant effect of independent variable e-learning teaching strategies on dependent variable teaching learning experience.

Thus H_{02c}. There is no significant effect of e-learning teaching strategies of teachers on their teaching learning experience based on Master's in business Administration department departments at higher education level was rejected.

4.4 Chapter summary

The topic of this research is “Effectiveness of e-learning teaching strategies used at higher education level”. Teachers of public sector universities were included as the population of the research. 319 Teachers of common departments were the population of the research. Summary of the findings reported that there is significant effect of e-learning teaching strategies on teaching learning experience of teachers at higher education level. According to the findings “emphasizes time on task” e-learning teaching strategy is the most effective teaching strategy from all seven e-learning teaching strategies. According to the results of the findings, “respects diverse talents and ways of learning” teaching strategy have the highest effect on teaching learning experience of teachers at higher education level. According to the teachers of economics department e-learning teaching strategies 36.6 % effect on teaching learning experience of teachers at higher education level and that was highest in all three departments.

CHAPTER 5

SUMMARY, FINDINGD, DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This chapter is based on the summary of present research. Findings were related to the topic and discussion. After discussion, researcher has concluded the research as well as gave some valuable recommendations about the topic of the research.

5.1 Summary

Topic of this research is “Effectiveness of e-learning strategies used at higher education level”. Present research assesses the different e-learning teaching strategies as well as effect of these strategies on teaching learning experience of teachers at higher education level. There were four main objectives of the research. The objectives of the research discussed below:

- (i) “To assess the e-learning teaching strategies of teachers at higher education level”.
- (ii) “To assess the teaching learning experience of teachers at higher education level
- (iii) ”To examine the effect of e-learning teaching strategies of teachers on their teaching learning experience at higher education level
- (iv) To examine the effect of e-learning teaching strategies of teachers on their teaching learning experience based on common departments (Education, Economics and Master’s in business Administration).

Theoretical framework of the study designed from two theories; first one was related to e-learning teaching strategies, Chickering and Gamson (2016) has given the seven principles for good practice and second one was related to the teaching learning experience, Garrison, Anderson and archer (2008) has given community of inquiry modle. According to chickering and Gamson (2016), there were seven teaching strategies for effective teaching learning process. First teaching e-learning teaching strategy was encourage interaction between students and teaching staff. Second e-learning strategy was to develops reciprocity and cooperation among students, and third e-learning teaching strategy was encourage active, contextual and meaningful learning. Fourth e-learning teaching strategy was “give prompt feedback”. Fifth e-learning teaching strategy was emphasizes time on task. Sixth e-learning teaching strategy was communicates high

expectations. Last and seventh e-learning teaching strategy was respects diverse talent and ways of learning. According to Garrison et al. (2008) there are three basic elements for effective teaching learning experiences. These elements are cognitive presence, social presence and teaching presence.

Quantitative research approach and descriptive research design was used for current study. Teachers of common departments in public sector universities in Rawalpindi and Islamabad were selected as the population of the study. Three hundred and nineteen (319) teachers were working in common departments. Sample was selected according to the Krejcie and Morgan table for sampling. A number of one hundred and seventy-five(175) participants were selected for the research study. Stratified sampling technique was used in the research for conducting the survey.

Researcher has used Survey method for data collection. In 2016 Prof. Peter R. Albion used and Dr. Syaril Izwann Jabar were used Questionnaire related to e-learning teaching strategies, and researcher adapted that questionnaire from their work. The second questionnaire was related to online teaching learning experience of teachers was adapted from the D. Randy Garrison at al. It was developed and used in 2008. The questionnaire was based on closed ended questions. In first questionnaire, 34 items were included. In second questionnaire, 32 items were included and the questionnaire contains the close ended questions.

The instrument has gone through various checks which included expert opinion, pilot testing and reliability analysis. Experts have checked out the objectives, hypothesis, theoretical framework and methodology than they validate the instruments as well. Statistical tests has used to testing the data. Through the pilot testing, researcher checked the reliability. After checking the reliability and validity, instruments have finalized for the final data collection. Researcher personally collected data as well as online Google forms have used for collection of data. After final data collection, researcher has used two statistical tests and those were mean and Linear regression analysis.

According to results of the study, there is significant effect that comes at front of e-learning teaching strategies of teachers on their teaching-learning experience at higher education level. Seven e-learning teaching strategies have separate significant effect on teaching-learning experience of teachers. According to the findings it can be concluded

that “emphasizes time on task” was the most effective e-learning teaching strategy from all effective teaching strategies. According to the teachers of economic department results showed that e-learning teaching strategies 36.6% effect on teaching learning experience of teachers. It was the highest effect of teaching learning experience.

5.2 Findings

1. According to the findings the result of objective number one “emphasizes time on task” was the most effective e-learning teaching strategies. The mean value of emphasizes time on task teaching strategy was 4.21. “Respects diverse talents and ways of learning” has the mean value of 4.06 and that was the least reported value from all results. According to the teachers “respects diverse talents and ways of learning” was the least effective e-learning teaching strategy. Overall mean score of e-learning teaching strategy research tool was 4.12.
2. According to the result of objective number two showed that “teaching presence” was an important element in teaching learning experience of teacher. Mean score of this element of teaching presence was 4.02 it shown that most of the teachers agree with this point that teaching presence was an essential factor in teaching learning experience. Social presence mean value was 3.75 it shown that it is less important in teaching learning experience of teachers in comparison of teaching presence. Overall mean score of teaching learning experience was 3.91.
3. According to the results of objective number three ($R\text{-square}=.295$, β (coefficient) $=.543$, $t=8.363$, $\text{sig}=.000$), null hypothesis is “there is no significant effect of e-learning teaching strategies of teachers on their teaching learning experience at higher education level” has been rejected. According to the results e-learning teaching strategies 29.5% effect on teaching learning experience of teachers. According to β (coefficient) value the effect was positive and significance value shown that it is significant in nature. It showed that significant effect of independent variable e-learning teaching strategies on dependent variable that were teaching learning experience of teachers.
4. According to the results of sub-objective 3(a), ($R\text{-square}=.215$, β (coefficient) $=.464$, $t=6.761$, $\text{sig}=.000$) there is no significant effect of e-learning teaching strategies of teachers with reference of encouraging interaction between students

and teaching staff on their teaching-learning experience at higher education level . R square value showed that encourages interaction between students and teaching staff, reported 21.5% shows effect on teaching learning experience of teachers. β (coefficient) value showed the positive effect on dependent variable that was teaching learning experience of teachers. Significance value (P) 0.000 showed significant effect of independent variable which encourages interaction between students and teaching staff on dependent variable that was based on teaching learning experience of teachers.

5. According to the results of sub-objective 3(b) (R-square=.153, β (coefficient) =.391 , $t=5.488$, sig.=0.000), null hypothesis there is no significant effect of e-learning teaching strategies of teachers with reference to develop reciprocity and cooperation among students on their teaching-learning experience at higher education level was rejected. R-square value showed that independent variable which “develops reciprocity and cooperation among students”, had 15.3% effect on teaching learning experience of teachers. β (coefficient) value showed a positive effect teaching learning experience. Significance value (P) 0.000 results that there is significant effect of independent variable which develops reciprocity and cooperation among students on dependent variable that was teaching learning experience of teachers.
6. According to the results of sub-objective 3(c) (R-square=.113, β (coefficient) =.337, $t=4.624$, sig. =0.000), null hypothesis there is no significant effect of e-learning teaching strategies of teachers with reference of encourages active, contextual and meaningful learning on their teaching-learning experience at higher education level was failed to accept. R-square value has shown that “encourages active, contextual and meaningful learning” 11.3% effect on teaching-learning experience of teachers. β (coefficient) value showed positive effect on teaching learning experience of teachers. Significance value (P) 0.000 showed that there is significant effect of independent variable which “encourages active, contextual and meaningful learning” on dependent variable that was “teaching learning experience” of teachers.

7. According to the results of sub-objective 3(d) (R -square=.193, β (coefficient) =.439, t =6.311, sig. =0.000), null hypothesis there is no significant effect of e-learning teaching strategies of teachers with reference “gives prompt feedback on teaching learning experience of teachers at higher education level was rejected”. R -square value shown that independent variable “gives prompt feedback” 19.3% effects on teaching-learning experience of teachers. β (coefficient) value has shown that the effect was positive. Significance value (P) 0.000 which has shown that there is significant effect of independent variable that “gives prompt feedback” on dependent variable that is teaching learning experience of teachers.
8. According to the results of sub-objective 3(e) (R -square=.255, β (coefficient) =.505, t =7.557, sig.=0.000), null hypothesis there is no significant effect of e-learning teaching strategies of teachers with the reference of emphasizes time on the task on their teaching learning experience at higher education level was failed to accept. R -square value showed that independent variable “emphasizes time on task 25.5% effect on teaching-learning experience of teachers. β (coefficient) value showed the positive effect on dependent variable. Significance value (P) 0.000 has shown that there is significant effect of independent variable “emphasizes time on task” on dependent variable that was teaching learning experience of teachers.
9. According to the results of sub-objective 3(f) (R -square=.177, β (coefficient) =.421, t =5.994, sig. =0.000), null hypothesis there is no significant effect of e-learning teaching strategies of teachers with reference of communicates high expectations on their teaching learning experience at higher education level was failed to accept. R -square value has shown that independent variable “communicates high expectations” 17.7% effect on teaching-learning experience of teachers. β (coefficient) value has shown that the effect was positive. Significance value (P) 0.000 has shown that there is significant effect of independent variable communicates high expectations on dependent variable that was teaching learning experience of teachers.
10. According to the results of sub-objective 3(g) (R -square=.294, β (coefficient) =.542, t =8.342, sig. =0.000), null hypothesis there is no significant effect of e-learning teaching strategies of teachers with reference of respects diverse talents

and ways of learning on their teaching learning experience at higher education level was rejected. R-square value showed that independent variable “respects diverse talents and ways of learning” 29.4% effect on teaching learning experience of teachers. β (coefficient) value showed that the effect remains positive. The reported (P) value 0.000 has shown that there is significant effect of independent variable “respects diverse talents and ways of learning” on dependent variable that was teaching learning experience of teachers.

11. According to strata wise results Economics department (R-square=0.366, β =0.605 , t=5.152 , p=0.000) null hypothesis “there is no significant effect of e-learning teaching strategies of teachers on their teaching learning experience at higher education level was rejected. According to the economics department results of e-learning teaching strategies 36.6% effect on teaching learning experience of teachers. According to β (coefficient) value the effect was positive and significance value showed that it was significant in nature. It showed that significant effect of independent variable e-learning teaching strategies on dependent variable that was teaching learning experience of teachers.
12. According to strata wise results Masters in Business Administration department (R-square=.258, β =.508, t=5.596, sig.=0.000) null hypothesis “there is no significant effect of e-learning teaching strategies of teachers on their teaching learning experience at higher education level was rejected. According to the economics department results of e-learning teaching strategies 25.8% effect on teaching learning experience of teachers a higher education level. According to β (coefficient) value, effect was positive and significance value has shown that it is significant in nature. It showed that significant effect of independent variable e-learning teaching strategies on dependent variable that was teaching learning experience of teachers.
13. According the Education department results (R-square=.248, β (coefficient) =.498 , t=2.981 , sig=.006) null hypothesis “there is no significant effect of e-learning teaching strategies of teachers on their teaching learning experience at higher education level was rejected. According to the economics department results e-learning teaching strategies 24.8% effect on teaching learning experience of

teachers. According to β (coefficient) value the effect was positive and significance value has shown that it is significant in nature. It showed that significant effect of independent variable e-learning teaching strategies on dependent variable that was teaching learning experience of teachers.

14. Strata wise results showed that according to the teachers of economics department 36.6 % e-learning teaching strategies have a significant effect on teaching learning experience of teachers at higher education level. It was highest result at all.

5.3 Discussion

Purpose of this current research is to find out effective e-learning teaching strategies and also to check the effect of e-learning teaching strategies on teaching-learning experience of teachers at higher education level. There are four main objectives as well as null hypotheses and research questions related to the research to achieved the results of the research. The first objective of the study was “to assess the e-learning teaching strategies of teachers at higher education level”. Second objective was “To assess the teaching learning experience of teachers at higher education level”. Third objective was “To examine the effect of e-learning teaching strategies of teachers on their teaching learning experience at higher education level”. Fourth objective was to examine the effect of e-learning teaching strategies of teachers on their teaching learning experience based on common departments (Education, Economics and Masters in Business Administration) at higher education level. Researcher has used quantitative research approach and used two statistical tests first one was “Mean” and second one was “linear regression”.

According to the objective number one, that is “to assess the e-learning teaching strategies of teachers at higher education level”. In present research there were seven e-learning teaching strategies, those were used at higher education level. Finding has shown that there was slightly differ in results of the effective e-learning teaching strategies, e-learning teaching strategy “emphasizes time on task” was the most effective e-learning teaching strategy. According to the results of the research of Taraban (2012) to complete task on time is important for teaching learning process and it is effective teaching strategy for teachers and It shows the development and growth of the learning. Quality time means that effective time student utilizes on specific task during their study time. According to the research findings of Ritter and Lemke (2000) time management is important in teaching

learning process. Through time management, teaching-learning process becomes more effective. It should not be too much long for the completion of one task. Task should be completed in specific or given time. Teachers and institution both played an important role for learning time management to the students. The result of the research by McCabe and Meuter (2011) has shown that time management is essential strategy for effective teaching learning process. Teachers facilitate the student about the planning of the time and manage accordingly. Other strategies are also important for effective teaching learning process. According to the findings of current research, “communication high expectations” is in second most effective e-learning teaching strategy. According to results of the research by Richardson and Swan (2003) communication must be done in proper and effective for the learner as well as for the instructor. Timely Interaction and communication according to the expectation is important in e-learning. The research of McVay et al. (2008) has shown that teachers and institution must have clear expectation and through proper communication, these can improve the teaching learning process. Teachers must provide clear communication and expectation and students must know those instructions properly for effective teaching learning process. Communication with high expectation was very effective strategy.

According to the objective number two, “to assess the teaching learning experience of teachers at higher education level”, three factors are important for teaching learning experience of teachers. Result of the research has shown that teaching presence is important in teaching learning experience of teachers at higher education level. According to Akyol and Garrison (2008), teaching presence is important in teaching learning experience. Teaching presence is like a sport between social and cognitive presence. It works like a bridge between social and cognitive presence. Teaching presence plays an important and effective role in effective teaching and learning process. In teaching presence, teacher must have full command on subject matter knowledge and on teaching strategies rather those are traditional as well as used in e-learning. Teacher provides a sport to the students in their learning process. Teacher plays a role of facilitator in teaching learning process. Teacher provides the guide line to the students in teaching learning process (Anderson et al, 2001). According to the research findings of Baran et al. (2013), teaching presence is important in effective teaching learning experience. Instructor control the whole learning process and

teaching presence which provides way to communicate properly.

According to findings of current research, e-learning teaching strategies have positive effect on teaching learning experience of teachers. In the research finding of McMurtry (2016), online teaching strategies are important for effective teaching learning process. Teachers should use different online teaching strategies for better learning process. E-learning teaching strategies like proper feedback, proper communication and organization of course provides strong effect on teaching learning experience of teachers as well as for students.

There are some other factors those effect the teaching learning process. First one was students. Willingness of learner in teaching learning process plays an important role. Second factor is curriculum or material that teacher used for teaching learning process. Third important factor is teaching strategies /method of the teachers. Fourth important factor is teacher and knowledge related to the subject to the teacher. Fifth important factor is environment of the study and last is technology use in teaching learning process (Padhi, 2021).

Results of current research also has shown that teachers were agree with these strategies like, time on task, feedback, encourage interaction, corporation and respect diverse talent etc. and these have positive and significant effect on teaching learning experience of teachers at higher level.

5.4 Conclusion

According to the findings of the research, “emphasize time on task” was the most effective e-learning teaching strategy from all six other teaching strategies. Researcher has used seven e-learning teaching strategies. “Communication high expectations” and “encourage interaction between students and teaching staff” were also most effective e-learning teaching strategies. All seven e-learning teaching strategies are important but according to the results and findings, these three got top three positions.

In teaching learning experience, three factors are important in all process and those are teaching presence, social presence and cognitive presence. Findings shown that, in teaching learning experience, teaching presence is most important factor. Teaching presence played a role of bridge between social and cognitive presence in teaching learning

experience of teachers at higher level.

According to the strata wise results of economics department e-learning teaching strategies 36.6 percent effect on teaching learning experience of teachers at higher education level. It has shown that according to the finding of economics department highest effect of e-learning teaching strategies on teaching learning experience of teachers.

According to the finding of the research, e-learning teaching strategies have significant effect on teaching learning experience of teachers at higher level. Result has shown that all seven e-learning teaching strategies have significant effect on teachers teaching learning experience at higher level.

5.5 Recommendations

1. It is recommended that teachers may participate in collaboration sessions for improvement in their teaching related to their subjects to enhance “teaching presence”.
2. Universities and departments may conduct workshops to improve teaching learning process especially related to e-learning teaching strategies like “encourages active, contextual and meaningful learning”.
3. Universities may conduct training programs for new teachers so teachers learn effective teaching strategies through these programs.
4. It is recommended that universities and departments may conduct training programmers for teachers and workshops to improve teaching learning process especially related to teaching strategies like “emphasizes time on task”.
5. It is recommended that teachers may learn e-learning teaching strategy “encourage interaction between students and teaching staff” through collaboration sessions to enhance their effectiveness in e-learning classroom environment.
6. Teachers may use learning management system (LMS) to communicate with the learner and improve their teaching learning process.
7. It is recommended that administration may conduct the workshops for their faculty members regarding e-learning strategies with reference of “communication high expectations”.

8. Teachers may get online sessions webinars and trainings at national and international level for learning new online teaching strategies at higher education level.
9. Head of the departments may provide opportunities to the staff members introducing and implementing e-learning teaching strategies in their departments.

5.6 Recommendations for future researchers

1. In present research researcher took common departments of social sciences and management sciences future researcher may take other departments and faculties as well for their research.
2. In this research, seven e-learning teaching strategies were used for checking the effectiveness of e-learning teaching strategy and future researchers may include more and different e-learning teaching strategies for their research.
3. Future researcher may check the effectiveness of e-learning teaching strategies in private sector as well.
4. Future researcher may check the effect of e-learning teaching strategies on students learning experience.
5. In present research researcher used only quantitative research approach future researchers may use mixed method research approach as well as qualitative research approach.
6. Searcher only used questionnaires for data collection other researchers may use more than one tool.

5.6 Limitation of the research

1. Limitation of the current study is, researcher only focus on the common departments of faculty of social science and faculty of management science in public sector universities in Rawalpindi and Islamabad.
2. Researcher used only close ended questionnaires for collection of the data from the respondents.
3. In present study, researcher used seven e-learning teaching strategies but there are many other teaching strategies and their use depends on teachers.

Table 5.1

Findings, conclusion and recommendations:

Objectives	Hypothesis /research questions	Findings	Conclusion	Recommendations
<p>Objective # 1</p> <p>To assess the e-learning teaching strategies of teachers at higher education level.</p>	<p>Research question # 1</p> <p>What are the e-learning teaching strategies of teachers at higher education level?</p>	<p>According to the finding of the study “emphasize time on task” mean score was 4.16 shown that most of the respondents were agree and it was most effective e-learning teaching strategies at higher education level. “Develop reciprocity and cooperation among students” mean score was 4.12 it shows that most of the respondents were agree. It shown was that second most effective e-learning teaching strategy and “encourages interaction between students and teaching staff” mean score was 4.10 and that was on third.</p>	<p>In conclusion emphasize time on task is the most effective e-learning teaching strategy at higher education level.</p>	<p>It is recommended in the light of finding of the study departments and ORIC conduct training programs for the teachers especially teach them effective e-learning teaching strategy like “emphasize time on task”.</p>
<p>Objective # 2</p> <p>To assess the teaching learning experience of teachers at higher education level.</p>	<p>Research question 2</p> <p>What is the teaching learning experience of teachers at higher education level?</p>	<p>According to the findings of the study “teaching presence” is the most important element in teaching learning experience of teachers at higher</p>	<p>According to the results in teaching learning experience of teachers “teaching presence” is very important element. Teachers must aware about it.</p>	<p>Management conducts the workshops and programs for effective teaching learning experience. Teaching presence is very important element in effective teaching learning experience and teachers must aware about the new technology and</p>

	education level.	tricks in teaching field.
<p>Objective # 3</p> <p>To examine the effect of e-learning teaching strategies (encouraging interaction between students and teaching staff, develops reciprocity and cooperation among students, encourages active contextual and meaningful learning, gives prompt feedback, emphasizes time on task, communicates high expectations and respects diverse talents and ways of learning) of teachers on their teaching learning experience at higher education level.</p>	<p>Ho1. There is no significance effect of e-learning teaching strategies on their teaching learning experience of teachers at higher education level.</p>	<p>According to the findings there is a significant effect of e-learning teaching strategies of teachers that was 29.5% on their teaching leaning experience at higher education level. All seven e-learning teaching strategies have significant effect on teaching learning experience of teachers at higher education level. e-learning teaching strategy “Respect divers talents and ways of learning” highly effect on teaching learning experience of teachers at higher education level.</p>
<p>Objective #4</p> <p>To examine the effect of e-learning teaching strategies of teachers on their teaching learning experience at</p>	<p>Ho2 There is no significance effect of e-learning teaching strategies of teachers on</p>	<p>It is concluded that according to the teachers of economics department</p>
		<p>It is recommended that departments conduct training programs to improve</p>

higher education level based on common departments (Economics, Education and MBA/BBA).	their teaching learning experience at higher education level based on common departments (Economics, Education and MBA/BBA).	learning experience of teachers at higher education level. Masters in business administration department in second and education department in third.	e-learning teaching strategies are highly effective on teaching learning experience of teachers at higher education level.	effective teaching learning process especially at higher education especially in online education.
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Appendix A

APPROVAL LETTER OF M.PHIL TOPIC AND SUPERVISOR



NATIONAL UNIVERSITY OF MODERN LANGUAGES
FACULTY OF SOCIAL SCIENCES
DEPARTMENT OF EDUCATION

M.L.1-3/Edu/2021

Dated: 02-07-2021

To: Shagufta Parveen,
1783/MPhil/Edu/F-19

Subject: **APPROVAL OF M.PHIL THESIS TOPIC, AND SUPERVISOR**

1. Reference to Letter No, M.L.1-3/Edu/2021/, dated 16-02-2021, the Higher Authority has approved the topic and supervisor on the recommendation of Faculty Board of Studies vide its meeting held on 11 February 2021 & Board of Advanced Studies and Research dated 02-06-2021

a. **Supervisor's Name & Designation**

Dr. Farkhanda Tabassum,
Assistant Professor,
Department of Education NUML, Islamabad.

b. **Topic of Thesis**

Effectiveness of E-Learning Strategies Used at Higher Education Level.

2. You may carry out research on the given topic under the guidance of your Supervisor and Submitted the thesis for further evaluation within the stipulated time. It is to inform you that your thesis should be submitted within described period by **31st July 2022** positively for further necessary action please.

3. As per policy of NUML, all MPhil/PhD Thesis is to be run on turnitin by QEC of NUML before being sent for evaluation. The university shall not take any responsibility for high similarity resulting due to thesis run from own sources.

4. Thesis is to be prepared strictly on NUML's format that can be taken from Coordinator, Department of Education

Telephone No: 051-9265100-110 Ext: 2090
E-mail: hod-edu@numl.edu.pk

Wajeeha
Dr. Wajeeha Shahid
Head,
Department of Education

CC:

Dr. Farkhanda Tabassum

Ms. Shagufta Parveen

Appendix B

LIST OF PUBLIC SECTOR UNIVERSITIES IN ISLAMABAD


Sr #	Universities	Sector
1.	Air University	Public
2.	Allama Iqbal Open University	Public
3	Bahria University	Public
4	COMSATS Institute of Information Technology	Public
5	Federal Urdu University of Arts, Sciences & Technology	Public
6	Health Services Academy (HSA), Islamabad	Public
7	Institute of Space Technology	Public
8	International Islamic University	Public
9	National Defense University	Public
10	National University of Modern Languages	Public
11	National University of Sciences & Technology	Public
12	National University of Technology (NUTECH), Islamabad	Public
13	Pakistan Institute of Development Economics (PIDE)	Public
14	Pakistan Institute of Engineering & Applied Sciences	Public
15	Quaid-i-Azam University	Public
16	Shaheed Zulfiqar Ali Bhutto Medical University	Public

LIST OF PUBLIC SECTOR UNIVERSITIES IN RAWALPINDI

Sr. #	Universities	Sector
1.	Fatima Jinnah women university, Rawalpindi.	Public
2.	Kohsar university, Murree.	Public
3	National university of medical sciences.	Public
4	Pir Mehr Ali Shah Arid Agriculture University.	Public
5	Rawalpindi Medical university.	Public
6	Rawalpindi women university Rawalpindi.	Public
7	University of engineering & technology Taxila.	Public

VALIDATION CERTIFICATES

Validation Certificate of Research Questionnaire



**EFFECTIVENESS OF E-LEARNING STRATEGIES USED AT HIGHER
EDUCATION LEVEL**

By

**Shagufta perveen M.Phil. scholar at Department of Education , National University
of Modern Languages Islamabad.**

It is hereby certified that the tools adapted by the scholar for topic "Effectiveness of E-learning strategies used at higher level" has been assessed and it is found appropriate for the data collection process. All the items in the tool are meeting the objectives and addressing the research hypotheses. Face validity and content validity are also assured, and it can be used by the researcher for the data collection process.

Validated by: *Dr. Jameela Ashraf*

Signature: *[Signature]* 15/06/22

Designation: *Assistant Professor*

Institution: *NUML - Islamabad.*

Date of validation: *15-06-22.*

Validation Certificate of Research Questionnaire



**EFFECTIVENESS OF E-LEARNING STRATEGIES USED AT HIGHER
EDUCATION LEVEL**

By

**Shagufta perveen M.Phil. scholar at Department of Education , National University
of Modern Languages Islamabad.**

It is hereby certified that the tools adapted by the scholar for topic "Effectiveness of E-learning strategies used at higher level" has been assessed and it is found appropriate for the data collection process. All the items in the tool are meeting the objectives and addressing the research hypotheses. Face validity and content validity are also assured, and it can be used by the researcher for the data collection process.

Validated by: *Dr. M. Samiullah*

Signature: *[Handwritten Signature]*

Designation: **Dr. Muhammad Samiullah**
Assistant Professor

Early Childhood Education and Elementary
Teacher Education Department
Allama Iqbal Open University, Islamabad

Institution: **Allama Iqbal Open University, Islamabad**

Date of validation: *17.06.2022*

Validation Certificate of Research Questionnaire



**EFFECTIVENESS OF E-LEARNING STRATEGIES USED AT HIGHER
EDUCATION LEVEL**

By

**Shagufta perveen M.Phil. scholar at Department of Education , National University
of Modern Languages Islamabad.**

It is hereby certified that the tools adapted by the scholar for topic "Effectiveness of E-learning strategies used at higher level" has been assessed and it is found appropriate for the data collection process. All the items in the tool are meeting the objectives and addressing the research question and research hypotheses. Face and content validity are also assured, and it can be used by the researcher for the data collection process.

Validated by: *Dr. Shazla Zamir*

Signature: *[Handwritten Signature]*

Designation: *Assistant Professor*

Institution: *NUML*

Date of validation: *08-06-2022*

Validation Certificate of Research Questionnaire



**EFFECTIVENESS OF E-LEARNING STRATEGIES USED AT HIGHER
EDUCATION LEVEL**

By

**Shagufta perveen M.Phil. scholar at Department of Education , National University
of Modern Languages Islamabad.**

It is hereby certified that the tools adapted by the scholar for topic "Effectiveness of E-learning strategies used at higher level" has been assessed and it is found appropriate for the data collection process. All the items in the tool are meeting the objectives and addressing the research hypotheses. Face validity and content validity are also assured, and it can be used by the researcher for the data collection process.

Validated by: *Dr. M. Tanveer Afzal*

Signature: *[Handwritten Signature]*

Designation: *AP*

Institution: *AIOU*

Date of validation: *20-06-2022*

Dr. Muhammad Tanveer Afzal
Assistant Professor
Science Education Department
AIOU, Islamabad

REFERENCE LETTER FOR DATA COLLECTION



DEPARTMENT OF EDUCATION
FACULTY OF SOCIAL SCIENCES
National University of Modern Languages
Sector H-9, Islamabad
Tel.No: 051-9265100 Ext: 2090

ML.1-3/2022-Edu

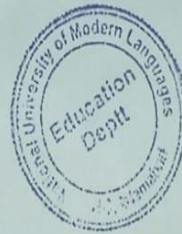
Dated: 14-06-2022

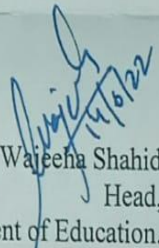
WHOM SO EVER IT MAY CONCERN

Ms. Shugufta Parveen D/O Mukhtar Ahmad, students of M.Phil (Edu) Department of Education National University of Modern Languages is engaged in project of Research Work.

She may please be allowed to visit your Institution / Library to obtain the required information for her Research Work.

This information shall not be divulged to any unauthorized person or agency. It shall be kept confidential.




Dr Wajeeha Shahid
Head,
Department of Education.

Appendix E

COVER LETTER OF QUESTIONNAIRE

“Effectiveness of E-Learning Strategies Used At Higher Education Level”



Dear respondent,

I am M. Phil scholar from Department of Education National University of Modern Languages Islamabad. I am working on my research thesis topic, “Effectiveness of E-learning strategies used at higher education level”. The questionnaire in hand is to COLlect data for my M. Phil research work. You are requested to fill in the questionnaire attached. It is assured that your responses will be kept confidential and will not be disclosed to any person or authority; information will be used for the purpose of research work only.

Shagufta Perveen

M. Phil Scholar, Department of Education
National University of Modern Languages
Islamabad.

Appendix F

EFFECTIVENESS OF E-LEARNING STRATEGIES USED AT HIGHER
EDUCATION LEVEL*E-learning strategies Survey Instrument*

Dear respondent,

I am shagufta perveen , student at National University of Modern Languages Islamabad. I am conducting research on the topic of “Effectiveness of E-learning strategies used at higher education level”for the requirement of my M.Phil degree. I request you to please spare few minutes from your precious time to fill the questionnaire. Your participation will help me to complete my researchproject. Your response will be kept confidential, and it will be used for research purpose only.

Shagufta Perveen

(shaguftaah@gmail.com)

MPhil Scholar (Education)

National University of

Modern Languages

Islamabad.

Demographics

Please tick only one option

1	Gender	Male 1		Female 2	
2	University	Islamic international university 1	National university of modern languages 2	Fatima Jinnah women university 3	Arid agriculture university. 4
3	Departments	Education 1	Economics 2	MBA/BBA 3	
4	Qualification	M.A/M.sc 1	M.phil 2	PhD 3	Other 4
5	Work Experience	1-5 1	6-10 2	11-15 3	Mor e4
6	Age	25-30 1	31-35 2	36-40 3	Above 40 4

Section A

E-learning teaching strategies survey instrument

E-learning teaching strategies: E-learning Teaching strategy is a generalized plan for a lesson which includes structure, instructional objectives and an outline of planned tactics, which are necessary to implement these strategies through electronic way of communication.

Note: According to my model there are seven teaching strategies in e-learning. Effective teachinglearning experiences depends on these strategies. Need your view about these instructional strategies.

Please Tick any one of the following options for each statement.

1= Strongly Disagree 2= Disagree 3= Neutral 4= Agree 5= Strongly Agree

<i>1. Encouraging Interaction Between Students and Teaching Staff (EIST)</i>							
Sr #	Code	Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	EIST 1	I try to communicate with all students in online class.	1	2	3	4	5
2	EIST 2	I facilitate informal interaction with students.	1	2	3	4	5
3	EIST 3	I provide guidance to my students for E-learning.	1	2	3	4	5
4	EIST 4	I contact with students to discuss their study habits, schedules, and other commitments.	1	2	3	4	5
5	EIST 5	I provide extra material to students if they lack the essential background knowledge.	1	2	3	4	5
<i>2. Developing Reciprocity and Cooperation Among Students (DRCS)</i>							
Sr #	Code	Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
6	DRCS 1	I encourage students to participate in online activities.	1	2	3	4	5
7	DRCS 2	I explain difficult ideas to students through E-learning.	1	2	3	4	5
8	DRCS 3	I allow students to discuss their interest with their class fellowsthrough online	1	2	3	4	5

		forum.					
9	DRCS 4	I utilize a Learning Management System (LMS) to encourage students learning.	1	2	3	4	5
10	DRCS 5	I encourage students to work on projects together in online class.	1	2	3	4	5
3. <i>Encouraging Active, contextual and Meaningful Learning (EACML)</i>							
Sr #	Code	Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
11	EACML 1	I try to get students to apply meaningful learning by relating events that happened in real life.	1	2	3	4	5
12	EACML 2	I get students to apply contextual learning by analyzing real-life contexts.	1	2	3	4	5
13	EACML 3	I link students with professionals so that opinions and ideas can be exchanged.	1	2	3	4	5
14	EACML 4	I encourage students to express their self when they do not understand a particular subject matter.	1	2	3	4	5

15	EACML 5	I discuss the validity of online information with my Students.	1	2	3	4	5
<i>4. Giving Prompt Feedback (GPF)</i>							
Sr #	Code	Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
16	GPF 1	I try to adjust my instructional strategy to include problem solving activities that provide immediate feedback to student.	1	2	3	4	5
17	GPF 2	I provide prompt feedback regarding student online performance.	1	2	3	4	5
18	GPF 3	I politely inquire about student's strengths and weaknesses in tutorials, quizzes and tests.	1	2	3	4	5
19	GPF 4	I encourage students to go online and contact with me to discuss their academic progress.	1	2	3	4	5
20	GPF 5	I provide an evaluation of student's proficiency.	1	2	3	4	5
<i>5. Emphasizing Time on Task (ETT)</i>							

Sr #	Code	Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
21	ETT 1	I communicate with students to complete their assignments on time.	1	2	3	4	5
22	ETT 2	I deliver course materials, quizzes and assignments online.	1	2	3	4	5
23	ETT 3	I communicate the importance of scheduling to my students through E-learning activities.	1	2	3	4	5
24	ETT 4	I make clear to students the amount of time that is required to understand complex material.	1	2	3	4	5

6. Communicating High Expectations (CHE)

Sr #	Code	Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
25	CHE 1	I communicate to students that they are expected to work hard.	1	2	3	4	5
26	CHE 2	I emphasize the importance of holding on to high standards for academic achievement.	1	2	3	4	5
27	CHE 3	I ask the students to share past experiences, attitudes and values with other students.	1	2	3	4	5
28	CHE 4	I conduct the pre-test of the students at	1	2	3	4	5

		the beginning of online class.					
29	CHE 5	I discuss with students academic progress especially near the end of the Course	1	2	3	4	5
<i>7. Respecting Diverse Talents and Ways of Learning(RDTWL)</i>							
Sr #	Code	Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
30	RDT WL 1	I try to determine students learning style, interests or background at the beginning of the course.	1	2	3	4	5
31	RDT WL 2	I relate my learning activities with student learning style, interests or background.	1	2	3	4	5
32	RDT WL 3	I use multiple methods to communicate my own expectations at the beginning of the online class.	1	2	3	4	5
33	RDT WL 4	I check prior knowledge as instructional strategy of E-learning.	1	2	3	4	5
34	RDT WL 5	I work with students to meet challenging objectives for learning outcomes through e-learning.	1	2	3	4	5

Section B

Note: According to my model there are three elements **teaching presence, social presence and cognitive presence** for effective teaching learning experiences. Need your view about these elements.

Please tick any one of the following options for each statement.

1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree

<i>Social Presence</i> is refers to the extent to which students and instructor appear as real people to the other members of the community.							
Sr #	Code	Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	Sp 1	Knowing about other students give a sense of belonging in the online class.	1	2	3	4	5
2	Sp 2	Online communication is an excellent medium for social interaction.	1	2	3	4	5
3	Sp 3	I feel comfortable conversing through the online medium	1	2	3	4	5
4	Sp 4	I feel comfortable in online course discussions with students.	1	2	3	4	5
5	Sp 5	I feel comfortable in interacting with students through E-learning.	1	2	3	4	5
6	Sp 6	I feel comfortable with arguments of my Students while still maintaining a sense of	1	2	3	4	5

		trust.					
7	Sp 7	The students share their point of view easily in my online class.	1	2	3	4	5
8	Sp 8	Discussions in online class help me to develop a sense of Collaboration.	1	2	3	4	5
<i>Cognitive Presence</i> is defined as the extent to which students and instructor “are able to construct meaning through communication”.							
Sr #	Cod e	Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
9	Cp 1	I can handle problems during my online class.	1	2	3	4	5
10	Cp 2	Online Course activities increase my curiosity.	1	2	3	4	5
11	Cp 3	I feel motivated to explore content related questions from students in my onlineclass.	1	2	3	4	5
12	Cp 4	I utilize a variety of online information sources to explore problems posed in the course.	1	2	3	4	5
13	Cp 5	Brainstorming and finding relevant Information help me to resolve online content related questions.	1	2	3	4	5
14	Cp 6	Online discussions are valuable in helping me to	1	2	3	4	5

		appreciate different perspectives of students.					
15	Cp 7	Combining new information helps me to answer questions raised in online course activities.	1	2	3	4	5
16	Cp 8	Online learning activities help me construct explanations/solutions.	1	2	3	4	5
17	Cp 9	Reflection on online course content and discussions help me to understand cognitive presence of students.	1	2	3	4	5
18	Cp 10	I can describe online ways to test and apply the knowledge created in this course.	1	2	3	4	5
19	Cp 11	I can develop solutions to online course that can be applied in practice.	1	2	3	4	5
20	Cp 12	I can apply the knowledge of course through E-learning to my work or other non-class related activities.	1	2	3	4	5

Teaching presence is the design, facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes.

Sr #	Cod e	Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
21	Tp 1	I clearly communicate course topics through E-learning.	1	2	3	4	5
22	Tp 2	I clearly communicate course goals through E-learning.	1	2	3	4	5
23	Tp 3	I provide clear instructions to participate learning activities through E-learning.	1	2	3	4	5
24	Tp 4	I clearly communicate due dates/timeframes for learning activities through E-learning.	1	2	3	4	5
25	Tp 5	I am helpful in identifying areas of agreement on course topics that help to learn through E-learning.	1	2	3	4	5
26	Tp 6	I am helpful in identifying areas of disagreement on course topics that help to learn through E-learning.	1	2	3	4	5
27	Tp 7	I help students to participate in productive dialogue through E-learning.	1	2	3	4	5
28	Tp 8	I help the students on task in a way that help to learn through E-	1	2	3	4	5


		learning.					
29	Tp 9	My actions reinforce the development of a sense of community among students through E-learning.	1	2	3	4	5
30	Tp 10	I help to focus discussion on relevant issues in a way that help the students to learn through E-learning.	1	2	3	4	5
31	Tp 11	I provide feedback that helps to understand the strengths and weaknesses of the learner related to the course's goals and objectives through E-learning.	1	2	3	4	5
32	Tp 12	I timely provide feedback through online.	1	2	3	4	5

*THANK YOU FOR YOUR COOPERATION AND
RESPONSE*

Appendix G

Permission letters

3/15/2021 Gmail - permission for col survey

 Shagufta Imran <shaguftaah@gmail.com>

permission for col survey
3 messages

Shagufta Imran <shaguftaah@gmail.com> Mon, Mar 15, 2021 at 5:29 PM
To: garrison@ucalgary.ca

sir,
I am a research scholar of M.phil at national University of modern languages Islamabad Pakistan. I have started my research work in the area of distance learning (E-learning teaching strategies) . I read your articles on the community of inquiry model. These articles are quite informative and links with my work. The survey of COL model is quite relevant to my research field. I want to adapt a col survey for my research. It is requested to allow me to adapt col survey for my research.
I will be highly thankful to you for this academic help in my research. I am waiting for your reply.
shagufta perveen
M.phil scholar

National University of Modern Languages Islamabad, pakistan

D. Randy Garrison <garrison@ucalgary.ca> Mon, Mar 15, 2021 at 11:30 PM
To: Shagufta Imran <shaguftaah@gmail.com>

Shagufta,
You have my permission to adapt the Col survey for your research.
Best wishes,
DRG

D. Randy Garrison
Professor Emeritus
University of Calgary
2500 University Drive NW
Calgary, Alberta, Canada T2N 1N4

T 403.239.6660
garrison@ucalgary.ca
<https://coi.athabascau.ca/>
<http://thecommunityofinquiry.org/>

From: Shagufta Imran <shaguftaah@gmail.com>
Sent: March 15, 2021 6:30 AM
To: D. Randy Garrison <garrison@ucalgary.ca>
Subject: permission for col survey

<https://mail.google.com/mail/u/0?ik=d82b353df7&view=pt&search=all&permthid=thread-a%3Ar3562583158314466895&simpl=msg-a%3Ar357084558...> 1/2

3/15/2021

Gmail · Request for questionnaire



Shagufta Imran <shaguftaah@gmail.com>

Request for questionnaire

3 messages

Shagufta Imran <shaguftaah@gmail.com>
To: martic@athabascau.ca

Tue, Jan 12, 2021 at 12:47 PM

Respected Martha Cleveland-Innes
I am a research scholar of M.phil at national University of modern languages Isiamabad Pakistan. I have started my research work in the area of distance learning (E-learning teaching strategies) . I read your article. It's quite informative and links with my work. The questionnaire which you have used in your article "Developing a community of inquiry instrument: Testing a measure of the Community of Inquiry framework using a multi-institutional sample

" is quite relevant to my research field. I need your questionnaire that you use in your article. It is requested to allow me to adapt your questionnaire for my research.

I will be highly thankful to you for this academic help in my research. I am waiting for your reply.

shagufta perveen

M.phil scholar

National University of Modern Languages Isiamabad, pakistan

Dr. Marti Cleveland-Innes <martic@athabascau.ca>
To: Shagufta Imran <shaguftaah@gmail.com>

Tue, Jan 12, 2021 at 10:13 PM

Dear Shagufta:

Thank you for your interest in our work. Please see this website to access the instrument:

coi.athabascau.ca

Best wishes for a successful project.

Dr. Martha Cleveland-Innes
Professor and Program Director
Master of Education Program
Athabasca University
Visiting Professor of Pedagogy
Mid-Sweden University
Phone: 1-800-788-9041, ext. 6426
Skype: martha.cleveland

From: Shagufta Imran <shaguftaah@gmail.com>
Sent: Tuesday, January 12, 2021 12:47 AM
To: Dr. Marti Cleveland-Innes <martic@athabascau.ca>
Subject: Request for questionnaire

[Quoted text hidden]

--

9/28/22, 9:07 PM

Gmail - permission for survey instrument



Shagufta Imran <shaguftaah@gmail.com>

permission for survey instrument

4 messages

Shagufta Imran <shaguftaah@gmail.com>
To: syaril.izwann@unisel.edu.my

Fri, Jun 3, 2022 at 11:25 AM

Respected Dr. Syaril Izwan Bin Jabar,

I am a research scholar of M.phil at National University of Modern Languages Islamabad, Pakistan. I have started my research work in the area of distance learning. The topic is "Effectiveness of e-learning strategies used at higher education level". I read your work on the topic of "**Assessing the Reliability of Merging Chickering & Gamson's Seven Principles for Good Practice with Merrill's Different Levels of Instructional Strategy (DLIST7)**". Your research work is quite informative and links with my work. The survey instrument you developed is quite relevant to my research work. I want to adapt **DLIST7** survey for my research work. It is requested that you allow me to adapt **DLIST7** survey for my research.

I will be highly thankful to you for this academic help in my research. I am waiting for your reply.

Please consider it urgent.

shagufta perveen

M.phil scholar

National University of Modern Languages Islamabad Pakistan.

Dr. Syaril Izwann Bin Jabar | Faculty of Business & Accountancy
<syaril.izwann@unisel.edu.my>
To: Shagufta Imran <shaguftaah@gmail.com>

Fri, Jun 3, 2022 at 1:39
PM

Yes, of course you can.
Thank you for the email.
Keep in touch.

Regards,

Dr. Syaril Izwann Jabar | Senior Lecturer
Faculty of Business & Accountancy | University Selangor

[Quoted text hidden]

This UNISEL email contains privileged and / or confidential information. If you are not the intended recipient (or responsible for delivery of the message to such person) or if you have inadvertently received this e-mail, you should destroy or delete this message and notify the sender by replying the E-mail accordingly. If you do not consent to using UNISEL email for messages of this kind, please advise immediately by sending an E-mail to the sender of such messages.

Shagufta Imran <shaguftaah@gmail.com>

Fri, Jun 3, 2022 at 10:02 AM

To: "Dr. Syaril Izwann Bin Jabar | Faculty of Business & Accountancy" <syaril.izwann@unisel.edu.my>

Thanks you so much sir for your quick response. Always acknowledged you positive and quick response. Great teachers and researchers are like you. God bless you.

[Quoted text hidden]

Dr. Syaril Izwann Bin Jabar | Faculty of Business & Accountancy
<syaril.izwann@unisel.edu.my>
To: Shagufta Imran <shaguftaah@gmail.com>

Wed, Jun 8, 2022 at 9:29
AM

Well, it is always welcomed when someone wants to cite your work.

Dr. Syaril Izwann Jabar | Senior Lecturer
Faculty of Business & Accountancy | University Selangor

Appendix H

Population and sample of the research

Sr. #	Universities	Departments	Population
1	Islamic international university Islamabad.	Education,	19
		economics,	45
		MBA/BBA	54
2	National university of modern languages Islamabad.	Education,	17
		economics,	26
		MBA/BBA	70
3	Fatimah Jinnah women university Rawalpindi.	Education,	09
		economics,	10
		MBA/BBA	19
4	Arid agriculture university Rawalpindi.	Education,	10
		economics,	12
		MBA/BBA	28
		Total	319

Sample of the research

Sr. #	Universities	Departments	Total teachers
1	Islamic international university Islamabad.	Education,	11
		economics,	18
		MBA/BBA	27
2	National university of modern languages Islamabad.	Education,	08
		economics,	17
		MBA/BBA	39
3	Fatimah Jinnah women university Rawalpindi.	Education,	05
		economics,	05
		MBA/BBA	11
4	Arid agriculture university Rawalpindi.	Education,	06
		economics,	08
		MBA/BBA	14
		Total	169

Appendix I

E-learning teaching strategies research tool changing's

Sr #	Cod e	Statements	Change
1	EIST 1	I noticed instances of Teaching staff trying to communicate with me.	I try to communicate with all students in online class.
2	EIST 2	I recall attempts by Teaching Staff to facilitate informal interaction with me as being	I facilitate informal interaction with students.
3	EIST 3	I can understand why Teaching staff would demonstrate a willingness to serve as a mentor to me	I provide guidance to my students for E-learning.
4	EIST 4	I value attempts by Teaching staff to contact me when I have fallen behind to discuss my study habits, schedules, and other commitments	I contact with students to discuss their study habits, schedules, and other commitments.
5	EIST 5	I am of teaching staff attempting to provide extra material or exercises if I lack the essential background knowledge or skills.	I provide extra material to students if they lack the essential background knowledge.
Sr #	Code	Statements	Changes
6	DRCS 1	I noticed instances of Teaching staff trying to encourage me to participate in online activities	I encourage students to participate in online activities.
7	DRCS 2	I recall attempts by Teaching staff to get me to explain difficult ideas or concepts to others within an online learning group as being	I explain difficult ideas to students through E-learning.
8	DRCS 3	I can understand why Teaching staff would demonstrate an eagerness to get me to discuss openly with colleagues through a forum about interests and backgrounds.	I allow students to discuss their interest with their class fellowsthrough online forum.

9	DRCS 4	I value attempts by Teaching staff to utilize a Learning Management System such as <i>USQ Study Desk</i> to encourage learning communities in my course.	I utilize a Learning Management System (LMS) to encourage students learning.
10	DRCS 5	I am of Teaching staff attempting to get me and my colleagues to work on projects together.	I encourage students to work on projects together in online class.

Sr #	Code	Statements	Change
11	EACML 1	I noticed instances of Teaching staff trying to get me to apply meaningful learning by relating events that happened in real life to what was being learnt.	I try to get students to apply meaningful learning by relating events that happened in real life.
12	EACML 2	I recall attempts by Teaching staff to get me to apply contextual learning by analyzing real-life contexts as being.	I get students to apply contextual learning by analyzing real-life contexts.
13	EACML 3	I can understand why Teaching staff would demonstrate a willingness to link me with professionals who are experts in the field of study so that opinions and ideas can be exchanged.	I link students with professionals so that opinions and ideas can be exchanged.
14	EACML 4	I value attempts by Teaching staff to encourage me to express myself when I do not understand a particular subject matter.	I encourage students to express their self when they do not understand a particular subject matter.
15	EACML 5	I am of attempts to include independent study assignments where I seek out information from the Internet and later discuss with Teaching staff the validity of the information and the reliability of its source	I discuss the validity of online information with my Students.

--	--	--	--

Sr #	Code	Statements	Change
16	GPF 1	I noticed instances of Teaching staff trying to adjust their instructional strategy to include	I try to adjust my instructional strategy to include problem solving

		problem solving and task-centered activities that provided me with immediate feedback.	activities that provide immediate feedback to student.
17	GPF 2	I recall attempts by Teaching staff to provide corrective feedback regarding my performance on problem solving and task-centered activities as being.	I provide prompt feedback regarding student online performance.
18	GPF 3	I can understand why Teaching staff would demonstrate a willingness to politely inquire about my strengths and weaknesses in tutorials, quizzes and tests.	I politely inquire about student's strengths and weaknesses in tutorials, quizzes and tests.
19	GPF 4	I value attempts by Teaching staff to get me to go online and contact them to discuss my academic progress.	I encourage students to go online and contact with me to discuss their academic progress.
20	GPF 5	I am of attempts by Teaching staff to provide me with an evaluation of my proficiency	I provide an evaluation of student's proficiency.

Sr #	Code	Statements	Changes
21	ETT 1	I noticed instances of Teaching staff trying to communicate to me that I am expected to complete my assignments promptly	I communicate with students to complete their assignments on time.
22	ETT 2	I recall attempts by Teaching staff to deliver course materials, quizzes and assignments online as being	I deliver course materials, quizzes and assignments online.
23	ETT 3	I can understand why Teaching staff would demonstrate an eagerness to emphasize to me the importance of diligence, sound self-pacing and scheduling.	I communicate the importance of scheduling to my students through E-learning activities.
24	ETT 4	I value attempts by Teaching staff to make it clear to me the amount of time that is required to understand complex material	I make clear to students the amount of time that is required to understand complex material.

Sr #	Code	Statements	Change
25	CHE 1	I noticed instances of Teaching staff trying to communicate to me that I am expected to work hard.	I communicate to students that they are expected to work hard.
26	CHE 2	I recall attempts by Teaching staff to emphasize the importance of holding on to high standards for academic achievement as being	I emphasize the importance of holding on to high standards for academic achievement.
27	CHE 3	I can understand why Teaching staff would demonstrate a willingness to share with me past experiences, attitudes and values.	I ask the students to share past experiences, attitudes and values with other students.
28	CHE 4	I value attempts by Teaching staff to provide me with a pre-test at the beginning of the course.	I conduct the pre-test of the students at the beginning of online class.
29	CHE 5	I am of attempts by Teaching staff to discuss my academic progress especially near the end of the course	I discuss with students academic progress especially near the end of the Course
Sr #	Code	Statements	Changes
30	RDT WL 1	I noticed instances of Teaching staff trying to determine my learning style, interests or background at the beginning of the course.	I try to determine students learning style, interests or background at the beginning of the course.
31	RDT WL 2	I recall attempts by Teaching staff to relate learning activities to my learning style, interests or background as being.	I relate my learning activities with student learning style, interests or background.
32	RDT WL 3	I can understand why Teaching staff would demonstrate a willingness to use multiple methods to communicate their own expectations at the beginning of the course.	I use multiple methods to communicate my own expectations at the beginning of the online class.

33	RDT WL 4	I value attempts by Teaching staff to encourage mastery learning or learning contracts as instructional strategies	I check prior knowledge as instructional strategy of E-learning.
34	RDT WL 5	I am of attempts by Teaching staff to work with me to set challenging objectives for learning outcomes.	I work with students to meet challenging objectives for learning outcomes through e-learning.

Teaching learning experience research tool

S r #	Code	Statements	Changes
1	Sp 1	Getting to know other course participants gave a sense of belonging in the course.	Knowing about other students give a sense of belonging in the online class.
2	Sp 2	I was able to form distinct impression of course participants.	Online communication is an excellent medium for social interaction.
3	Sp 3	Online or web-based communication is an excellent medium for social interaction.	I feel comfortable conversing through the online medium
4	Sp 4	I felt comfortable conversing through the online medium	I feel comfortable in online course discussions with students.
5	Sp 5	I felt comfortable participating in the course discussions.	I feel comfortable in interacting with students through E-learning.
6	Sp 6	I felt comfortable interacting with other course participants.	I feel comfortable with arguments of my Students while still maintaining a sense of trust.
7	Sp 7	I felt comfortable disagreeing with other course participants while Still maintaining a sense of trust.	The students share their point of view easily in my online class.
8	Sp 8	Point of view of everybody was acknowledged by other course participants.	Discussions in online class help me to develop a sense of Collaboration.

S r #	Code	Statements	Changes
9	Cp 1	Problems posed increased my interest in course issues.	I can handle problems during my online class.
10	Cp 2	Course activities piqued my curiosity.	Online Course activities increase my curiosity.
11	Cp 3	I felt motivated to explore content related questions from students.	I feel motivated to explore content related questions from students in my onlineclass.
12	Cp 4	I utilized a variety of information sources to explore problems posed in this course.	I utilize a variety of online information sources to explore problems posed in the course.
13	Cp 5	Brainstorming and finding relevant information helped me resolve Content related questions.	Brainstorming and finding relevant Information help me to resolve online content related questions.
14	Cp 6	<i>Online discussions were valuable in helping me appreciate Different perspectives.</i>	Online discussions are valuable in helping me to appreciate different perspectives of students.
15	Cp 7	Combining new information helped me answer questions raised in course activities.	Combining new information helps me to answer questions raised in online course activities.
16	Cp 8	<i>Learning activities helped me construct explanations/solutions.</i>	Online learning activities help me construct explanations/solutions.
17	Cp 9	<i>Reflection on course content and discussions helped me understand fundamental concepts in this class.</i>	Reflection on online course content and discussions help me to understand cognitive presence of students.
18	Cp 10	I can describe ways to test and apply the knowledge created in this course.	I can describe online ways to test and apply the knowledge created in this course.

19	Cp 11	I have developed solutions to course problems that can be applied In practice.	I can develop solutions to online course that can be applied in practice.
20	Cp 12	I can apply the knowledge created in this course to my work or Other non-class related activities.	I can apply the knowledge of course through E-learning to my work or other non-class related activities.
Sr #	Code	Statements	Changes
21	Tp 1	As Instructor you clearly communicated important course topics	I clearly communicate course topics through E-learning.
22	Tp 2	As instructor you clearly communicated important course goals.	I clearly communicate course goals through E-learning.
23	Tp 3	Instructor provided clear instructions on how to participate in course learning activities.	I provide clear instructions to participate learning activities through E-learning.
24	Tp 4	The instructor clearly communicated important due dates/time frames for learning activities.	I clearly communicate due dates/time frames for learning activities through E-learning.
25	Tp 5	The instructor was helpful in identifying areas of agreement and disagreement on course topics that helped to learn.	I am helpful in identifying areas of agreement on course topics that help to learn through E-learning.
26	Tp 6	The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify thinking.	I am helpful in identifying areas of disagreement on course topics that help to learn through E-learning.
27	Tp 7	The instructor helped to keep course participants engaged and participating in productive dialogue.	I help students to participate in productive dialogue through E-learning.

28	Tp 8	The instructor helped keep the course participants on task in a way that helped to learn.	I help the students on task in a way that help to learn through E-learning.
29	Tp 9	The instructor helped keep the course participants on task in a way that helped to learn.	My actions reinforce the development of a sense of community among students through E-learning.
30	Tp 10	Instructor actions reinforced the development of a sense of community among course participants.	I help to focus discussion on relevant issues in a way that help the students to learn through E-learning.
31	Tp 11	The instructor helped to focus discussion on relevant issues in a way that helped to learn.	I provide feedback that helps to understand the strengths and weaknesses of the learner related to the course's goals and objectives through E-learning.
32	Tp 12	The instructor provided feedback that helped to understand the strengths and weaknesses of the learner relative to the course's goals and objectives.	I timely provide feedback through online.

Appendix J

Krejcie & Morgan (1970) table for sampling


<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

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Effectiveness of E-Learning Strategies used at Higher Education Level

By

Shagufta Perveen

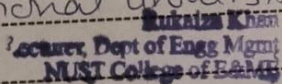
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It is certified that the research work with the title "Effectiveness of E-Learning Strategies used at Higher Education Level" conducted by Shagufta Perveen has been checked and proofread for the language and grammatical errors.

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