COMPAPPERATIVE STUDY OF SYNCHRONOUS AND ASYNCHRONOUS COMMUNICATION APPROACHES IN TEACHING AND LEARNING PROCESS AT UNIVERSITY LEVEL

By

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International Islamic University, Islamabad
Pakistan
2020

Learning

Learning- study and teaching

Motivation in education

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A thesis submitted in partial fulfillment of the requirement

for the degree of MS {Education}

Department of Education
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2020

Dedicated

To

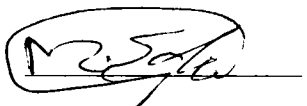
My Parents

And

My Respected Teachers

AUTHOR'S DECLARATION

I, Muhammad Sadiq, Reg. No. 269-FSS/MSEDU/F17 as a student of MS (Education), International Islamic University, Islamabad do hereby declare that the thesis titled "Comparative Study Of Synchronous And Asynchronous Communication Approaches In Teaching And Learning Process At University Level", has been submitted in partial fulfillment for the requirement of degree of MS(Education), is my original work, except where otherwise acknowledged in the text and has not been submitted or published earlier and shall not in future, be submitted by the researcher for obtaining degree from this University or any other institution.



Dated: _____

Muhammad Sadiq

SUPERVISOR'S CERTIFICATE

The thesis titled "Comparative Study of Synchronous and Asynchronous Communication Approaches in Teaching and Learning Process at University Level" submitted by Mr. Muhammad Sadiq, Reg. No. 269-FSS/MSEDU/F17 in partial fulfillment for the requirement of MS degree in Education, has been completed under our guidance and supervision. I am satisfied with the quality of student's research work and allow him to submit this for further process as per IIUI rules and regulation.

Date: _____ Supervisor: _____

Prof. Dr. N. B. Jumani

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APPROVAL SHEET

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Muhammad Sadiq

Abstract

The main purpose of the study was to investigate "Comparative study of Synchronous and Asynchronous Approaches in Teaching and Learning Process at University level". The main objectives of the study were to: (I) Analyse the role of Synchronous and Asynchronous Approaches in Teaching and Learning Process at University level. (ii) Examine the views of university teachers regarding usefulness of Synchronous and Asynchronous Approaches in Teaching and Learning Process at University level. (iii) Investigate the views of university students regarding the usefulness of social media for academic purposes. (iv) Compare the views of university teachers and students about the usefulness of Synchronous and Asynchronous Approaches in Teaching and Learning Process at University level. Descriptive research method was used in this study. The population of the study was consisted of all teachers and students of Education Departments of Public Sector Universities in Islamabad (National University of Modern Languages, Allama Iqbal Open University and International Islamic University). The population size was 120 teachers and 1510 students. A sample of 302 students was selected by using simple random sampling technique. In this study, a sample of 302 students and 120 teachers were selected by using simple random sampling method to select the sample from student's population including male and female.The questionnaire consisting of close ended statements on 5 point Likert Scale was used in this study separately for teachers and students. The researcher personally visited, administered and collected the questionnaires from the respondents. The collected data were scored, tabulated and analyzed to make use of descriptive statistics in Percentage, Frequency, and Mean score was used. Data were analysed through Statistical Package for Social Sciences (SPSS) Version 22. It is concluded that majority of the teachers use asynchronous approach which is very effective in teaching learning process and those courses which were taught in asynchronous mode were very effective. Majority of the respondents agreed that such approach meets their expectations in teaching and learning process. In Asynchronous mode, majority of the respondents found that in online discussion classroom teachers and learners both feel comfortable, On the basis of findings, it is recommended that the management of the universities under study may mount a capacity-building program for the training and re-training the lecturers on the use of innovative e-learning teaching methods such as the asynchronous as well as synchronous instructional approaches. Lecturers may adopt the asynchronous and synchronous instructional approaches in teaching and learning of education departments under study.

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CHAPTER1
INTRODUCTION

An asynchronous mode of learning/teaching has been considered to be the most prevalent form of online teaching so far because of its flexible modus operandi relating to synchronous modes. It is argued that asynchronous environments provide students with readily available material in the form of audio/video lectures, handouts, articles and power point presentations as Hrastinski (2008) reported. This material is accessible anytime anywhere with ease via Learning Management System (LMS) or other channels of the sort even at lower cost.

Synchronous learning, on the other hand, refers to learning and teaching that takes place simultaneously via an electronic mode. Synchronous voice or text chat rooms provide an opportunity of teacher-student and student-student interaction. Apart from chat, video-conferencing facilitates face-to-face communication. Web conferences through surveys, polls and question-answer sessions can turn out to be more interactive than video conferencing. Teng, Chen, Kinshuk& Leo, 2012 &Asoodar, Atai, Vaezi& Marandi, (2014) are of the view that synchronous mode instils a sense of community through collaborative learning.

Amazingly internet has brought revolution in the field of education and training by offering huge collection of knowledge to its users and due to its unique significance. Safdar, Jumani and Nazar, (2011) regard internet to be the Adam of knowledge. Keny (2015) has reported that according to Global Digital & Social Media Stats 2015, from a total of 7.210 billion people in the world, 3.010 billion (42%) have access to the internet, while 2.078 billion (29%) of them have active social media accounts. This implies that nearby half of the world population use

internet services. Information and Communication Technology (ICT) has indeed played an important role in teachers' professional development throughout the world. According to National Education Policy 1998-2010 (1998) of Pakistan, "The investment in information technology infrastructure and its network will comparatively bring our institutions of higher education on the world map". Teachers and students have already substantial access to internet due to expansion in technology and handheld devices connected with internet. This development has amazingly increased usage of social media which has become a tool for communication and social interrelation. Today, social media is widely facilitated collaboration, engagement and coordination among teachers, students, peers and parents in particular & other people in the population in general.

According to Bryer and Zavatarro (2011), Social media are collective technologies that enable social interaction, collaboration and deliberation across stakeholders in all sections of the country including education. At this age of globalization these technologies include blogs, wikis, media (audio, photo, video, text) sharing tools, networking platforms (including Facebook), and virtual world unlike they are still on the growth trend.Social media is constituted the most modern type of media having many features and characteristics. It has many facilities on the same channel like communicating, texting, images sharing, audio and video sharing, and fast publishing, linking with all over the world and over direct connecting. It is also the cheapest which provides the fastest access in the world. Its usage is rapidly increasing day by day. Majority of teachers and students is shifting from electronic media both as television viewers and radio listeners, to the social media. Therefore it is playing a crucial role in the teaching learning process. This study specifically

focuses on the role of social media in teaching learning process in institutions of higher education in Pakistan.

1.1 RATIONALE OF THE STUDY

In Pakistan, the internet users' growth rate has been increased through the services of broadband internet and mobile phone services. Majority of the mobile phone subscribers use internet services for browsing Emails, Facebook and Twitter as cellular phone operators launch different cheap packages to their subscribers. The cellular phone companies have been working hard on the promotion of Internet services on the handsets for the last two or more years. Ahmed, Tahir & Warsi, (2014) report that "these companies have introduced different bundle/packages of Internet services for young customers for education and entertainment purposes". Ameen (2014) has reported that according to Internet Service Providers Association of Pakistan (ISPAK), the estimated internet users have reached 25 million in the country and more than 15 million of them avail internet services through mobile phones. This trend is observed to be growing with the passage of time.

According to Ludlow and Duff (2009), the Internet has an impressive influence on education than any earlier technological innovations because it has allowed majority of individuals to access educational and training programs. Web 2.0 technologies add a new dimension to online teaching and learning and provide opportunities for instructor-to-student as well as student-to-student real-time and time-delayed collaboration. Beldarrain, (2014); Gunga& Ricketts, (2008) have the view that these technologies have shifted the role of instructors from deliverers of instruction to that of facilitators of learning and have made learners the center of attention. Hulme (2009) refers to Youthnet report which showed that 75% of youth of 16 to 24 year olds claimed they could not live without the Internet; 82% of them responded that

they had used the Internet to look for advice and information for themselves, while 60% expressed the view that they had looked for information for someone else. This tendency reflects that today's youth consider internet more close than life partner.

Mobile educational tools have appeared as a great potential for students to construct and share information and knowledge for learning through computers or mobile devices. These technologies offer students the opportunities to learn themselves and also to communicate and share knowledge online. These practices are getting popularity in universities and that web-based mobile courses have increased as they provide students increased choices and opportunities in the context of online instruction as per shared view of Pence (2007), Nelson, Christopher, & Mims (2009) and Inan, Flores, & Grant (2010).

Researchers are of the view that educational mobile technology is regularly being used in universities in online instruction worldwide as Jimoyiannis, Tsiotakis, Roussinos&Siorenta, (2013), Falvo and Johnson (2007) have commonly noted that Web 2.0 technologies are viewed as tools that will raise quality, quantum and standard of teaching and learning from the structured and linear learning management system environment to a more effective, self-motivated and multi-dimensional environment. Social media today has also become increasingly popular and well desired with the rise of Web 2.0, providing increased collaboration and knowledge sharing among users through applications like wikis, blogs and podcasts. In nutshell, internet and social media have become the most cherished modes of widening the scope of knowledge, teaching-learning process at all levels of world's population.

1.2STATEMENT OF THE PROBLEM

Due to Corona Virus in the world, countries were disconnected with each other with respect to study. On line study was used in this situation. The intent of the

present study was to find out the comparison of Synchronous and Asynchronous Communication approaches in teaching and learning process. Therefore, the researcher decided to conduct research on the topic "Comparative Study of Synchronous and Asynchronous Communication Approaches in Teaching and Learning Process".

1.3 OBJECTIVES OF THE STUDY

The main objectives of the study were:

1. To find out the role of synchronous and asynchronous approaches in teaching and learning process.
2. To investigate the perceptions of the University teachers and students about the synchronous and asynchronous approaches in teaching and learning process.
3. To compare the perceptions of students and teachers about the preference of either synchronous or asynchronous approaches in teaching and learning process including their usefulness in social media sources.

1.4 RESEARCH QUESTIONS

The study has made an effort to find out and ensure to the following research questions based on the problem statement and objectives outlined for the analysis:

1. What is the role of Synchronous and Asynchronous in teaching and learning process?
2. What are the perceptions of the University teachers and students about the synchronous and asynchronous of university teachers and students in teaching and learning process?

3. How to compare the views of university teachers and students about the synchronous and asynchronous usefulness of social media in learning process at university level?
4. To what extent synchronous and asynchronous approaches tend to be useful in tapping social media sources in teaching-learning process.

1.5SIGNIFICANCE OF THE STUDY

It has been envisaged that result of this study may provide useful knowledge in order to apply social media in appropriate way for teachers and students and create awareness among them that proper use of social media becomes a solid tool in teaching-learning process. The study hopes to make a valuable contribution in assessing the pros and cons of latest media in teaching-learning process. The results of the study will be significant to teachers and students at university level as well as for further research in this area.

1.5.1 Teachers

This study will help teachers in the application of social media to meet global competition as its appropriate application will make teaching-learning process easier, interesting successful and effective. Suitable usage of social media may make teachers' activities more effective and creative for knowledge building.

1.5.2 Students

This study will be useful for students to increase their academic performance through appropriate usage of social media as it might make learning process more active and productive. It is expected that appropriate application of social media will be able to prepare students more knowledgeable and resourceful. The study will recommend the ways of social media usage to other institutions like Colleges, Higher

Secondary Schools and Secondary Schools. Moreover the study will be providing direction to those students who will undertake research in this field.

1.6 DELIMITATIONS OF THE STUDY

There were a large number of Universities in Islamabad and Rawalpindi. I selected and delimited to only Education Departments of three public Sector Universities in Islamabad (National University of Modern Languages, Allama Iqbal Open University and International Islamic University.

In Synchronous and Asynchronous there were various modes of communication i.e. WhatsApp, emails, twitter, Skype, video conferencing, projects, virtual class rooms etc. but the study was delimited to WhatsApp, used for audio-video calls, having internet connection on cheaper rates remained useful for interaction with each other.

1.7 LIMITATIONS OF THE STUDY

A few limitations were found in this research study. The busy and tough schedule in working places made it difficult to carry out all the data from the respondents. However, efforts were made to approach such respondents for data through email and WhatsApp. The number of respondents were kept low as a sample which could have reduced the opportunity for comparison of opinions among the same category of respondents.

1.8CONCEPTUAL DEFINITIONS

1.8.1 Asynchronous Learning

An asynchronous mode of learning/teaching has been the most prevalent form of online teaching. Asynchronous environments provide students with readily available material in the form of audio/video lectures, handouts, articles and power

point presentations with a time-log This material is accessible anytime anywhere via Learning Management System (LMS) or other channels of the sort.

1.8.2 Synchronous Learning

Synchronous e-learning, on the other hand, refers to learning/teaching that takes place simultaneously via an electronic mode. Synchronous voice or text chat rooms provide an opportunity of teacher-student and student-student interaction.

CHAPTER 2
LITERATURE REVIEW

2.1 INTRODUCTION

It is traditionally, the use of Information and Communication Technology (ICT) is increasingly influencing the way the teachers teach and the way students learn and assimilate. Thus rapid global transformation in ICT is being accepted widely, as an indispensable means of meeting the needs of both the teachers and the students. Skylar (2009) holds the opinion that perhaps, it is in line with this assertion and observation that top trend in the transformation of teaching and learning process amply involves the use of e-learning. The common method by which e-learning instruction is delivered, tends to involve the use of the asynchronous and the synchronous methods of instruction as Hrastinski (2008) hold the view. Simonson, Smaldino, Albright & Zvacek (2012) have reported that asynchronous and synchronous instructions are no doubt innovative methods of instructional delivery which teachers can logically adopt when teaching with ICT facilities.

Higley (2013) and Azimzada (2014) suggest that asynchronous instruction is an e-learning platform which teachers use to interact with their students even though a time-log beyond the limits of the conventional four corners of the classroom. Both these researchers define asynchronous instruction as a student-centered teaching method that uses e-Learning resources to facilitate information sharing outside the constraints of time and place among a network of people. Higley (2013) further added that in the asynchronous approach, formulated informal instruction is usually delivered without the physical presence of the participants (teacher-students presence) at the same time. Thus, for this method, instructions do not take place on real time.

This is called a time-log. Consequently, instructional delivery is not simultaneous as it can take place at any time and from any place. For instance, the teacher may decide to deliver his lesson through Videotape, YouTube, Digital Video Disc (DVD) or Podcast while the students has the liberty to respond later through the use of communication modes like email.

On the other hand, for synchronous instruction, the participants (teachers-students) are practically connected instantly via an online communication medium. As a result, teaching-learning is taking place simultaneously. Perhaps, it is in this regard that Azimzadeh, (2014)) defines the synchronous instruction as a method of instructional delivery on real-time (live) basis by using an e-learning platform. Synchronous approach enables the teachers to control the sequencing of the lesson delivery which takes place in real time and at the same pace but from different locations.

As a pre-requisite, the participants are required to be physically present for the lesson that takes place simultaneously from their different locations. In addition, access to all instructional materials and course delivery is done instantly by face to face, eye to eye and voice to voice contact. The use of video conferencing, audio conferencing, and internet chats, or Skype media communications are the commonest platforms of synchronous instruction. Synchronous learning environments support learning and teaching and offer students and teachers multiple multi-dimensional ways of interacting, sharing, and the ability to collaborate and ask questions in real-time through synchronous learning technologies as Hrastinski (2008) reported. This close innovative collaboration technique offers greater opportunity that positively enhances student-to-teacher and student-to-student interaction.

It is widely noted that the asynchronous learning platform has several benefits. Because of its flexibility and self-pace characteristic, the asynchronous learning platform according to Hrastinski (2008) improves cognitive participation by way of increasing the ability of the learners to reflect and process course information given by the teacher. Higley (2013) hold the view that an asynchronous learning environment also provides the students with more time to consider all sides of an issue before offering their own educated input because there is no eye to eye contact.

Mayadas (1997) has summarized other major benefits of asynchronous instruction. These benefits include: the freedom of students to access course and other instructional materials at any time they choose and from any location with an Internet connection without any immediate pressure to meet the deadlines. This also allows for consideration accessibility for diverse student populations which might be ranging from traditional, on-campus students to working professionals, as well as international students in foreign countries. Current surge and rise in the global use of the synchronous and the asynchronous instructional methods, according to Higley, (2013), is, as a result of it's? Several benefits, which were found to be effective in improving students' performance in the technologically advanced nations. These have been exceptions to this view point as this assertion has not been verified for students of Electrical/Electronic Technology in Colleges of Education in Nigeria.

Available literature reveals that the Electrical Engineering program in Nigerian Colleges of Education was designed to produce qualified technical teachers and practitioners of technology capable of teaching "Basic Technology in the Junior Secondary Schools (JSS)". It was envisaged that graduates of this program in that countrywide expected to start and benefit from this so much desired revolution of technological development right from the Nigerian schools as per decisions of the

National Commission for Colleges of Education, 2012. In order to ensure effective training of the students, the National Commission for Colleges of Education (NCCE) therefore advocates for the adoption of e-learning innovative teaching and learning methodologies in both the synchronous and asynchronous instructions. However, despite the unique features and widely pronounced benefits of these innovative methods of instruction, it has been observed over the years that the current methods of instruction used in training the students of Electrical Engineering at Nigeria Certificate of Education (NCE) level unfortunately do not seem to be adequate in preparing them to be able to teach and contribute meaningfully to the technological advancement of the nation. It was thus suggested that in order to attain the objective of producing competent teachers to teach Electrical Engineering at the nations' secondary schools and also the need to keep up with the rapid technological advancement in the field of Electrical Engineering, it is therefore considered imperative for the lecturers to exploit and adopt innovative e-learning techniques like the synchronous and asynchronous instructions.

This approach is desirable because studies such as those of Khalil &Ebner, (2013) as well as Lee, (2009) revealed that e-learning platforms involving the use of the synchronous and the asynchronous instructions are capable of not only providing a meaningful learning experience for students, but are also likely to improve their performance and arouse their interest in the learning pursuit.

2.2 SYNCHRONOUS AND ASYNCHRONOUS E-LEARNING

Online learning with the use of advanced friendly and sensitive tools enable the e-learners to apply those tools which are adaptable to their individual preferences. This (personalized learning environment) is a process that all modern educational theories have emphasized on it. Today, the preferred learning style is as one of the

most important criteria for recognizing any individual differences in learning process which have been recommended for adaptability. Sabine Graf (2007) has mentioned that adaptability a necessity and stated that it includes all facilities to customize the system for the needs of the educational institutions in general and individual learners in particular.

Methods of providing e-content in an online classroom, instructors, learners, interactive tools, modes of interaction and many other factors in online learning modes are classified into two modes which include synchronous and asynchronous e-learning. This part focuses on the above mentioned modes and some concerned issues. Synchronous e-learning have been expanded due to proven demands in various disciplines such as education. In the online educational environment, there is no physical meeting between the teacher and the students. Synchronous and Asynchronous learning tools, such as threaded discussions, instant messaging and blogs, play an important role in humanizing online courses by replicating the traditional classroom experience of information exchange and social construct, both for learners and instructors as well as among the learners. The belief that people might just know it by reference to a particular vendor, tool or software program that enables the creation and delivery of synchronous e-Learning will make the process more result oriented. Synchronous e-learning is apparently live, real-time (and usually scheduled), facilitated instruction and learning-oriented interaction. Clark et al., (2007) hold the view that the roots of synchronous e-learning are derived from three main influences: the classroom, the media, and the conference. Available research reveal that several researchers provide a comprehensive definition of the synchronous e-learning which is unanimous and it must include two components i.e. they are interactions and time. Khan (2006) on the basis of these components defines

Synchronous e-learning as "Interact of participants with an instructor via the Web in real time"

Asynchronous online learning is defined variously due to some components, its nature and facilities that are common in some characteristics. Mayadas, (1997) pronounced that on the other hand, one of the popular definitions that focus on the components of asynchronous e-learning introduced it as "an interactive learning community that is not limited by time, place or the constraints of a classroom". Asynchronous e-learning is similar to synchronous e-learning which is a learner-centered process and which uses online learning resources to facilitate information sharing regardless of the constraints of time and place among a network of people. Asynchronous e-learning takes advantage of computer-mediated communication (CMC) to achieve the promises of learning "anytime and anywhere" through asynchronous online discussions.

Asynchronous e-learning is developed on the basis of constructivist theory, a learner-centered approach that emphasizes on the importance of peer-to-peer interactions. This approach tends to combine self-study with asynchronous interactions to promote learning. It can be used to facilitate learning in traditional on-campus or regular education, distance education and continuing education. This combined network of "learners and the electronic network" in which they communicate are referred to as an "asynchronous e-learning network". The conditions and factors driving the Asynchronous e-learning are different so, this method is defined by another component. Khan (2006) mentioned on the basis of these components that "Asynchronous learning refers to instruction that is not constrained by geography or time".

2.3 SYNCHRONOUS LEARNING THROUGH LIVE VIDEOCONFERENCING

Synchronous education can be defined as a traditional mode of delivery of education in a live format, allowing students to communicate directly with faculty and/or other students receiving immediate responses and interaction. Synchronous distance education delivery therefore, can be defined as the utilization of synchronous education delivery methods to communicate at a distance. Dal Bello, Knowlton and Chaffin O'Rourke (2007) describe the use of Interactive Videoconferencing (IVC) in a synchronous format as consisting of —...live, synchronous audio and video communication via a computer or digital phone network among sites in different physical locations.

With this understanding of synchronous distance education delivery, this section reviews the available literature on the use of synchronous videoconferencing as a distance education delivery medium and research that has been performed in various educational environments, and relation of existing literature to this study. The researcher referred to above express the view that much of the literature presents the use of synchronous videoconferencing as a positive educational tool, taking advantage of many of the expressed benefits found within the traditional classroom, including live interactive communication with the instructor and peers is the clears, face-to-face contact where non-verbal communication can be utilized, (Ibid) and the ability to create relationships with others. Another research has reported that additional benefits identified in the research can be seen in cost advantages for students, faculty and educational institutions due to reduced travel and facilities costs, and access to education from remote locations as referred by Dye, (2007), Gillies, (2008); Hron et al., (2007); Koenig, (2007); and Shewchuck, (2007). Another group of researchers

concerned their findings to be disadvantages or challenges present in synchronous videoconferencing identified in the literature. These are generally focused around technical challenges such as Internet communication speed, connection performance, video speed and performance, student access to technology, and pedagogical challenges referred by Dye, (2007; Gillies, (2008); Hron et al., (2007) and Shewchuck, (2007).

Shewchuck (2007) performed an elaborate dissertation analysis on the use of synchronous two-way audio/video within a university setting. This analysis sought to evaluate group dynamics versus individual sessions on the basis of number of parents such as; the effect of audio/video sessions versus audio-only, learning preference capability, distance learning acceptability, social interactivity and student academic performance in both audio/video and audio-only sessions. The results of the study compared factors such as gender and social interactivity to determine possible differences in student's performance. The results revealed that no significant difference was found in student success overall between the two delivery mediums. However significant differences were found when comparing gender success rates between the two mediums.

Sweeney (2007) studied the use of synchronous videoconferencing in support of constructivism in K-12 education. The intent of the study was to build on existing research performed on the use of videoconferencing and the relationship between videoconferencing and educational theory. Findings included four videoconferencing constructs as being valid: First learner directed/active learning, mental models, interactivity and prior knowledge. Second, a strong correlation was identified as existing between constructivism preferences and the use of particular videoconferencing techniques supporting constructivist learning environments. Third,

Respondents frequently made use of prior knowledge in their videoconferences by having students brainstorm about the topic, as well as read and write about the topic before the videoconference‖. Results revealed that this third finding is congruent with constructivist educational theory as well as andragogy developed by Malcolm Knowles as reported by Galbraith &Fouch, (2007) and Ormrod, (2004). The relation and relevance of this research to adult learning theories also reviewed within this literature review indicates that the concepts contained within these theories may help explain some of the data regarding student perceptions of synchronous distance learning through videoconferencing.

Gillies (2008) performed a study by focusing on student perspectives on the use of videoconferencing in teacher education at a distance. Challenges for the pedagogical aspects of the synchronous videoconferencing learning environment as identified in the study included such areas as lack of physical contact between parties; absence of shared space; [and] lack of, (or limited prospects) for alternative supportive learning contexts. Significant value was placed on the use of face-to-face interaction within the study and has been judged to be the supreme example of social presence. On the other hand, mediated relationships such as in videoconferencing can be diminished through the absence, (or impairment) of vital aspects such as body language and facial expression‖. These may be considered important factors influencing students 'perception of this distance learning modality, or even students 'election to learn through this medium parse.

Another discussion to judge the importance of designing education to fit the cognitive learning needs of the student is a very important success factor. Offir, Bezalel and Barth (2007) presented a study building on earlier research focused on specific learner characteristics such as attitudes and self-image as well as other

psychological factors, examining how a range of factors such as levels of self-efficacy and creativity affect learning outcomes in a synchronous videoconferencing-based environmental.

It has been observed that the study conducted by Offiret. al (2007) exclusively focused on cognitive style among university students in a videoconference-based learning environment. The study revealed two main purposes (1) to understand how students with different cognitive styles have revealed different perceptions of the constraints that characterize videoconferencing, and (2) to determine and report to what extent these perceived difficulties. A correlate with student outcomes perceived difficulties within the synchronous videoconferencing learning environment in the study included lack of personal contact with the lecturer and tension emerging during the lesson. These difficulties were analyzed for significance based on students 'tendency towards extroversion or introversion. The results indicated a statistical significance in difference between them. Resultantly, introverts tended to need greater personal contact and sensed greater tension in the lesson. The tension appeared to be focused more on the need to be attentive at all times during each lesson so that nothing would be missed, including comments from other students.

It is worth mentioning that the study performed by Offir, Bezalel and Barth (2007) has direct correlation to this current study, as attitudes and perceptions of students learning in a synchronous videoconferencing environment (as well as an asynchronous online learning environment), may be affected by their individual cognitive styles and the extent to which students perceive the constraints of the learning environment as impacting their performance and success.

Survey of literature reveals that some of the research literature tends to group synchronous and asynchronous learning models, and the need for constructivist

learning models, group interaction, support systems, and interaction within both mediums as confirmed by Resta&Laferrière, (2007) and Zapantis&Maniscalco-Feichtl, (2008). According to the literature reviewed in this section, student attitudes and perceptions within the synchronous videoconferencing learning medium may be affected by several factors. Managing and controlling those factors, as well as creating a constructivist learner-centered environment focusing on student interaction and engagement, may be keys to fostering positive attitudes and success among students and this worth enquiring.

2.3 HYBRID TECHNIQUE IN TEACHING

Hybridity is a mechanism in which two dissimilar parts produce the same function or result. In hybrid method of teaching, face–to-face (F2F) classroom instruction is blended with Web based learning, combining dynamically both technology and human instruction to promote student learning outcomes. The goal of hybrid method is to join the best aspects of in-class teaching with the best features of online learning. The Web is used in place of some class meetings. In this methodology of teaching, significant portions of learning activities is moved online, fifty percent (50%) or more of the course is cyber-based. Students have 24/7 (24 hours, 7 days a week) access to course materials (Sands, 2002). In a hybrid course, some of the course activities – accessing of lecture materials, information transfer, and announcement of deadlines, exchange of ideas, submission of requirements and other tasks are done online.

Which is why, there is a need for building an electronic community (e-community) of students in the Internet. In some cases, a Course Management System is used but it can also be accomplished via something as simple as building an electronic group such as yahoo groups (Cho & Berge, 2002). Successful hybridity

requires bringing two dissimilar parts together so that they work in concert and produce a third result. In the case of successful hybrid courses, there are two dissimilar methods of teaching that must come together and produce a final result: online and face-to-face methods resulting to an improved student learning outcomes (Curtis & Swenson, 2003).

One of the most beneficial components of hybrid pedagogical methods is their alignment with differentiated instruction models that offer custom designed learning activities for diverse student groups. In differentiated instruction, which is based on the principles of Universal Design for Learning (UDL), instructors consider students' learning preferences, past experiences with the subject matter, and current interests to fully engage students with their learning. The application of UDL principles to learning environments has been tied to increased student engagement (Moore and Fetzner 2009), persistence (Field, Sarver, and Shaw 2003; Getzel 2008), and retention (Field, Sarver, and Shaw 2003; Getzel 2008; Moore and Fetzner 2009). In hybrid classrooms, the range of activities, both in class and online, can provide a diverse group of students with learning techniques that are most applicable to their learning preferences and that help keep them engaged throughout a course.

Hybrid education is an additional way that instructors can ensure that students are engaged with the course content by incorporating online learning communities, synchronous and asynchronous discussion, and a variety of online collaboration methods that encourage students to interact with the course materials, their instructors, and their peers in a variety of ways. In addition to increased active learning in class through the "flipped" model, hybrid courses also offer opportunities for increased student engagement because of the possibility of including extra support and resources online to enhance the learning experience. For example, in addition to

providing a recorded lecture online, an instructor might also provide websites, images, additional short videos, and readings for students to further explore the course content. These online resources, when organized appropriately, can encourage students' curiosity and motivate them to explore the material independently.

2.4 ASYNCHRONOUS LEARNING THROUGH WEB-BASED INTERFACES

In recent years, a significant amount of research has been performed exploring many facets of online learning. These studies have covered a wide array of topics including such areas as learning styles and learner characteristics by Plotnick, (2003), Wansick, (2007). Pedagogical aspects and instructional methods have been studied by Kanuka, Rourke &Laflamme, (2007) and Miller & King, (2003). Interaction online Battalio, (2007); King, (2001); Kushniroff, (2008) and Scheetz & Gunter, (2004). Cost effectiveness of distance education programs versus in-house or other educational mediums have been analyzed by Koenig, (2007) and Kushniroff, (2008) Attitudes and perceptions of both students and faculty have been dealt with Beard & Harper, (2002); Beard, Harper & Riley, (2004), Cook-Wallace, (2007); Kushniroff, (2008); McFarland & Hamilton, (2005); Plotnick, (2003b) and Summers, Waigandt& Whittaker, (2005), and many comparisons of online versus on-campus, or other instructional mediums' learning success factors and comparisons have been examined by Davis, (2007); Edmonds, (2006); Poirier & Feldman, (2004) and Scheetz & Gunter, (2004). It has been observed that there is ample stock of books that have been published about online education, curriculum and course room development, technologies, and instructional aspects as reported Shelton &Saltsman, (2005) and Simonson et. al, (2006).

Focus of the current study was on the attitudes and perceptions of students completing higher education through distance learning mediums, this section of the literature review is therefore focusing on the available literature addressing attitudes and perceptions as well as the pedagogical aspects of teaching and learning online. These studies therefore appear to be quite relevant and guiding the current study as per its objectives.

2.5 ASYNCHRONOUS AND SYNCHRONOUS TECHNOLOGY

Teaching learning process is dynamic as more methodologies and technologies are being developed, used, to make the learning environment more effective and results oriented. It is with view background that asynchronous and synchronous technologies may be used in online instruction as certain levels of Asynchronous technologies are proved to be highly flexible and can be accessed anytime from anywhere. They also include multiple forums such as; chat rooms and e-mail services. They allow reflective and thoughtful thinking before responding.

Synchronous technologies in the form of audio/video conferencing, like the virtual classroom on the other hand, are less flexible in terms of time, but can be accessed from anywhere with ease. They render immediate feedback, and allow multi-modality communication options. According to Moallem (2006) they can remove information overload, require less time and effort to maintain social interaction being used friendly.

According to the literature pertaining to Author & Author, (2010) and Brannon & Essex, (2001), there are number of advantages and disadvantages for both synchronous and asynchronous technologies. The advantages to using synchronous technology allow more content, in dues psychological arousal, implements increased motivation, and above all more social interaction. Paige, Pauli, Sturm, and

Fierstein(2011) communicate immediate feedback from instructors, to students reduced feelings of isolation and a sense of and being part of community with the learners as some of the advantages of synchronous interaction. Disadvantages of synchronous technology span over the focus on quantity not quality, scheduling to be challenging, moderating large groups becomes difficult, and there is an element of lack of reflection time.

Branon& Essex, (2001), Hrastinski, (2008) and Johnson, (2006) share their views on the advantages to disadvantages of asynchronous technology. According to them advantages of asynchronous technology which have been identically are increased ability to process information, ample time to comprehend and write messages, and richer content. Whole disadvantages of asynchronous technology includes holding discussions with small groups is difficult, students feel isolated lack of immediate feedback; students not checking-in often enough, and less social interaction.

Generally, synchronous technologies can be incorporated into online courses for community-building or social learning, which asynchronous communication can be integrated for cognitive functions or objective obtainment. Hrastinski, (2008); Johnson, (2006) research supports the inclusion of both asynchronous and synchronous technologies into online courses rather than using either one individually. Ideally synchronous communication tools are better suited for discussing less complex issues, getting acquainted, or planning tasks. In contrast, asynchronous communication tools are better suited for reflecting on complex issues as per the view point of Hrastinski, (2008). Instructors may however choose the technology based on the objective or task being requiring of students. A group of researchers are of the view that synchronous technologies have become more popular as faculty value

interactivity in their online courses as per view point of McBrien, Jones & Cheng, (2009), Rockinson-Szapkiw& Walker, (2009); Malik, (2010) and Paige, Pauli, Sturm, &Fierstein, (2011).

2.6 SYNCHRONOUS ONLINE TEACHING AND LEARNING

It is a well-known fact that synchronous interaction occurs when both the teacher and the students are online and communicating with each other at the same time. Depending on the technology available, students can see and hear (e.g. Skype audio calls) and see and hear (e.g. Skype video calls) each other and/or send text messages. One advantage, as argued by Kung-Ming and Khoon-Seng (2005), is that teachers only know how to provide help to students whenever they need and have the possibility to observe their participation in a classroom. It is generally held the opportunities for that learning through discussions in real time, brainstorming, debates and most importantly, the possibility of immediate feedback are reportedly significant advantages of synchronous interaction.

The current research has also focuses on synchronous interaction in virtual classrooms, which are usually embedded in the aforementioned virtual learning environments. Ng (2007) while expressing his viewpoint holds that, it is interaction itself which plays a crucial part in online learning. "An important issue in online delivery whether it can provide an interactive learning environment for the participants", If so, it means the existence of regular patterns of written and/or oral communication between the instructor students and among the students they themselves too. A revealed work can be traced back to Bates's study (1989) in which the researcher argues that interactivity may be the most important criterion for the choice of media for educational delivery. This notion therefore answering the questions raised by Ng (2007). In addition, Holmberg (1989) describes interaction as

a defining critical component of the educational process, which also applies for synchronous online conferencing. This report further strengthens the judgment of Bates (1989). Pertaining to Martin et al. (2012) argues that explanation offered by Thurmond and Wambach's (2004). These researchers suggest – essential conditioning for interaction would fit best to synchronous virtual conferencing. Interaction which consists of "the learner's engagement with the course content, other learners, the instructor, and the technological medium used in the course".

Another faction which constitutes effectively for the interactive environment is Hauck and Hampel (2008) have developed this approach further and argue that the medium itself has significant affordances that have an influence on meaning-making and communication, which will again have an impact on how the teacher's and student's cultural background influences mutual interaction. This circular argument therefore calls for asset of "socio-environmental" strategies, which Hampel and Hauck (2008) describe as "how students made use of particular functionalities of the online learning environments. In terms of available modes and their affordances". Such strategies for example, are the acceptance of silence in the virtual classroom or alternatively the use of text chat to compensate for the lack of spontaneity.

The study has also the influences of cultural backgrounds on interaction in virtual classrooms which expands into areas outside of foreign language learning and teaching. However, this aspect was beyond the scope of this study. The existing literature offers a considerable number of studies researching interaction in synchronous online tutorials. (Hampel& Hauck, 2010; Hampel& Stickler, 2005; Hauck &Youngs, (2008) however, beyond the extensive research in foreign language teaching and learning stated earlier by the focus often lies on the use of just one tool, for example synchronous chat as considering by the medium of communication

Burnett, (2003) or on whiteboard interaction as Hewett (2006)Nevertheless, this study focuses on synchronous interaction in virtual classrooms which include a variety of tools and the influence of cultural background on using those.

Martin et al. (2012) conducted a study on the perception of interaction by students, and emphasized the importance of interaction within a synchronous virtual classroom situation. Their study reveals that synchronous communication in the virtual classroom will definitively have a positive effect on interaction of all parties involved. This confirms Aydin's (2008) recommendation for that a synchronous virtual classroom (e-class) may increase student-student interaction because it also tends to be motivational to learners. However, Kung-Ming and Khoon-Seng (2005) report findings of a study conducted by Fillicaro (2002) stating that increasing numbers of students would decrease the possibilities for interaction. This implied that there is an involve relationship between numbering students and interaction possibilities. In her view, virtual classrooms can only be used for those levels of Bloom's taxonomy which represent thinking skills at the knowledge, comprehension and application levels.

Oztok et al. (2013) combine the two forms of online interaction and examine contributions of both synchronous and asynchronous interaction and the pedagogical consequences of using both in the same environment. However, the synchronous element in their study is synchronous private messaging only whilst the virtual classrooms, current study is investigating focuses on both speaking synchronously and videoconferencing.

One of the most influential theories in distance learning is the theory of transactional distance, which was developed by Michael G. Moore (1993). In his theory, Moore explains distance as "a psychological and communication space to be

crossed, a space of potential misunderstanding between the inputs of instructor and those of the learner" to be comprehended. In his view, and as evident, three interactive components include essential to shorten the transactional distance in students offer a meaningful learning experience. These components include dialogue or interaction between learners and teachers, structure of the programme and autonomy (the degree of self-directedness of the learner). In the same wake, Moore (1989) provides three types of interaction essential in distance education, namely learner-content, learner-learner and learner-instructor. Later, Moore states that: since the theory of 'Transactional Distance' was written, the most important evolution overtime in distance education has been the development of highly interactive telecommunications media. This is the well-known family of teleconference media - i.e., the use of interactive computer networks and audio, audio-graphic, and video networks as Keegan (1993) reported, which may be local, regional, national and international and are often linked by cable, microwave and satellite. According to Keegan (1993), a new form of dialogue is possible, which he calls "inter-learner dialogue", which in his words "occurs between learners and other learners, alone or in groups, with or without the real-time presence of an instructor. Through this new form of dialogue like audio conference, videoconference, and computer conference, groups can learn through interaction with other groups and within groups."

Martin et al. (2012) added another dimension to Anderson's (2003) research, as they look at learner-learner, learner-instructor, learner-content, and learner-interface interactions. Additionally, Sims (2003) states that "learners taking on a more participatory role" is an essential determinant of the success of interactive, computer-enhanced learning environments. However, as Martyn (2005) points out that fostering interaction in online conferences requires the provision of instructional and social

types of interaction. Therefore, a balance between content-related work and ice-breaking activities needs to be found. For this the pedagogical approach should be flexible and situated as Hoven (2006) suggests thus giving teachers the competence to use technology and in turn help their students to maximize their learning and assimilation. Thus, "experiential modeling" supports the idea that social presence plays an important role in online teaching (Ibil). However, it should also be related to other presences, such as teaching and cognitive presence as (Garrison et al., (2010) adds for the view point of Hoven.

According to Garrison et al. (2000) "a worthwhile educational experience is embedded within a 'Community of Inquiry' (CoI) that is composed of teachers and student the too essential key. This framework was developed for asynchronous interactions and it has been used for studying teaching presence in blended contexts as reported by Vaughan, Cleveland-Innes, & Garrison, (2013). Furthermore, CoI is looking at teaching presence but it does not provide enough theoretical background for the purpose of explaining cultural practices as the sum of dynamic and contingent social interactions.

To address this, the current study explores teaching in a virtual classroom, with the focus on the influence of cultural background on synchronous interaction within local conditions.

2.7 FORMS OF SYNCHRONOUS ONLINE TEACHING

This section of the literature review presents a brief explanation of different forms of achieving synchronous online teaching and learning, namely instant messaging, audio/videoconferencing and virtual classrooms. The intention is to show examples of some of the different approaches to synchronous teaching in the light of available notions and why using a virtual classroom makes a difference to the work of

the participants in the study. For the purpose of judging various viewpoints, it is held that instant messaging, audio/videoconferencing and virtual classrooms can be embedded into a virtual learning environment, such as MOODLE or Blackboard, for example. According to Dillenbourg, Schneider, and Synteta, (2002) virtual learning environments can be essentially identified by the following features:

- A virtual learning environment is a designed information space.
- A virtual learning environment is a social space: educational interactions occur in the environment, turning spaces into places.
- The virtual space is explicitly represented: the representation of this information/social space can vary from text to 3D immersive worlds.
- Students are not only active, but also actors: they co-construct the virtual space.
- Virtual learning environments are not restricted to distance education: they also enrich classroom activities.
- Virtual learning environments integrate heterogeneous technologies and multiple pedagogical approaches.

1. Most virtual environments overlap with physical environments. Therefore, the synchronous online tools described in this section can be part of a virtual environment for the purpose of any analysis Section below has dealt with various forms of technologies of achieving online teaching and learning through synchronous mode.

2.7.1 Instant Messaging

Instant messaging is one of the three techniques meant for an online chat which offers transmission of text via the Internet in real-time. At this point of time, popular instant messaging providers include Viber, WebChat, Instant Messenger and

WhatsApp. Some teachers also use the text chat facility of Skype which is also real-time but ignores the audio and video functionality of the system. Some of the advantages of such a synchronous system have already been stated earlier in the section. However, it can also avoid prejudice as the participants are neither seen nor heard. Halen (2016) pointed out that messaging offer one advantage to older teachers, who otherwise might "look" outdated but without seeing their age they might be perceived differently and accepted for their knowledge rather than being put into a mental box because of their age. Norman (2016) refers to participant who stated that sometimes, instant messaging is used to accompany classroom teaching. This viewpoint sees an advantage of messaging for group work with students who are less out-going and thus prefer to write.

2.7.2 Audio and Video Conferencing Systems

Skype is probably the most well-known audio and videoconferencing system which can be used with or without a webcam and as stated beforehand, this also includes an instant messaging possibility. Another feature of Skype is that participants can send documents as attachments to their text messages. Thus, Skype can be placed in the middle between instant messaging and virtual classrooms regarding serving tool as offered for simultaneous synchronous communication and videoconferencing. The use of audio and video conferencing in language teaching has been researched quite intensively as reported by Hampel& Stickler (2012). However, one disadvantage of Skype (and other software for that matter) is that it works fine with one-to-one but often gives rise to technical issues when a considerable number of participants connect simultaneously. Existing research in this field also often includes cultural aspects due to the field of language teaching, but there are still not many examples of teaching in a virtual classroom. Study conducted by Martin et al. (2012) and

Falloon(2011) report research interactivity in virtual classrooms, Palloff et al. (2007) have investigated online learning communities while Daniel et al. (2003) have examined social capital in virtual learning environments. However, some of them have explored the impact of cultural influences on teaching in virtual classrooms.

2.7.3 Virtual Classrooms

Virtual classrooms, is the third of its kind to compare with other synchronous communication tools that can also be part of a virtual learning environment. Virtual classrooms have compared with Skype or instant messenger: allow the greatest variety of online tools, as depending on the software, the use of audio, video and text-chat is possible. In addition, face-to-face group work can be simulated in virtual breakout rooms. Depending on the setting of the room, the teacher or both the teacher and students can upload files, share documents or even their screen. They can also write and draw onto a virtual whiteboard. The entire session or parts of it can be recorded and thus offer an additional asynchronous form of usage. The teachers and students can use a webcam to broadcast real-time pictures of themselves, depending on the technical knowledge and personal preferences which helps interpret facial expressions and thus reduces the evident difference between face-to-face and online teaching immensely.

Software applications on the market which are used as virtual classrooms are at present Blackboard (which replaced Elluminate), Adobe Connect, WebEx, Horizon Wimba, Ilinc and GotoWebinar. However, it is important to add that many of these software were originally designed for businesses. It is therefore important to think of pedagogical approaches which consider that fact while undertaking any analytical study.

2.8 ASYNCHRONOUS COMMUNICATION

In asynchronous communication, socialization plays key role. Socialization has therefore an important influence on the decision to participate in fantasy sports. It can occur in person, or via the use of communication tools such as messages boards, forums, email, and blogs etc. A message board is a social tool where people post and read messages, generally on a precise topic or area of common interest. Message board being an asynchronous social tool, participants can use it irrespective of propinquity and time constraints. A study conducted by Ruihley and Hardin (2011) examined the difference between message board users and non-users shows that message boards enhance fantasy sport experience. Additionally, their analysis showed that surveillance, logistical conversation, socializing and seeking advice or opinions were the main motivations behind message board usage. The structure is similar to the wall posts as reported generally but the message board has the advantage to allow the content to be shared amongst all the players in the game. Another study by Woo, An et al. (2008) found that users usually convey feelings, thoughts and emotions on the message board.

Available research also reveals that message boards also help the public relations practitioners of the fantasy sport to analyze the popularity of the organization among the players and helps to gauge their current status. From the previous studies, referred to above, it is evident that the message board users have higher overall satisfaction and engagement with the game than non-users.

In today's education system Hew, Cheung et al. (2010) believe, online dialogue between students and instructors has become a common phenomenon as a part of the coursework. Hence, the use of forum in online learning environments is widely acknowledged, and considered to be extremely beneficial in sharing

knowledge as confirmed by Rovai (2002) and Bradshaw and Hinton (2004). The participation in these online discussion forums and collaborative learning has positively contributed to the students' success according to the findings of Pieterseand van Rooyen (2011). In fact, Nandi et al. (2011) has potentially reported a positive correlation between the times spent on online discussions and the students' grades. Biggers et al. (2009) in their study found that students spent more time on class objectives, when they actively participated in forums and socially interacted with their peers.

Some of the other benefits of the forum are considered to include improved student performance, promoting an online community and enhanced relationship between the instructor and student. Burns (1999) holds the view that loneliness and solitude in students, one of the significant problems prevailing in today's society can be successfully eliminated by fostering an online community. Although students do not visit the forum and post actively throughout the semester however one study report by Nandi, Hamilton et al. (2011) showed that students who participated actively tend to achieve a higher grade. However, effective participation in the online discussion and collaborative peer learning above might not be the only factor affecting the grade. Other factors responsible for higher grades do have a bearing on students' performance.

According to Guldberg and Pilkington (2007) previous research shows that developing an excellent forum or message board with cutting edge technology and features will on the other hand not engage the participants all by itself. The moderator Andresen (2009) as plays an important role in stimulating harmonious asynchronous discussions and encouraging cordial interaction amongst the participants. Questions and topics in the asynchronous discussion are more likely to emerge progressively

once the peer relationships have developed and in due the learner positively. Oliver and Omari (2001) found that some students prefer to work alone as problem-solving conversations can be difficult to hold in an asynchronous environment. Practically, extremely specific questions like 'what am I missing to solve the problem' cannot be answered and explained with mere text. It needs a forum for discussion.

2.10 SYNCHRONOUS COMMUNICATION

Contrary to the role of socialization synchronous communication within the asynchronous communication, context of games takes the form of in-game or out-of-game chat, audio, or video connections. Chat has become an interactive medium of communication and a technique in various environments such as corporate workplaces and social networks. Its importance and value has been gradually recognized in the educational domain as well. Isaacs, Walendowski et al. (2002) hold the view that text communication is becoming an important mean and tool of communication in the workplace for both informal and formal conversations. Published reports reveal that multiple studies have delineated the use of instant messaging in various scenarios as documented by Handel and Herbsleb (2002) and Isaacs, Walendowski et al. (2002).

Garcia and Baker Jacobs (1999) consider that the workplace is a more formal environment. Users therefore tend to be targeted in their communication and satisfy their current workplace requirements in using any medium available and efficient. These reservations believe in the case of group chat is that there might be difficulties interpreting a series of successive messages during rapid conversations. It is believed that such issues are likely to be inevitable when dealing with multiple people and conversations synchronously. Hence pre-requisite, design of the particular interface becomes an important issue in a synchronous setting. Research work in the field of

synchronous system also found that use of synchronous system amply focused on important work-related tasks, socializing with peers and scheduling meetings. In games in particular, chat has been primarily used to socialize and build relationships with other players for the synchronization. A study conducted on StarCraft II reported by McClelland, Whitmell et al. (2011) revealed that the in-game synchronous text significantly supported the communications necessary to play the game. Although focus of this study was on real-time games, with the assertion that the effect of synchronous communication may extend to data games. However the findings of the study referred to above revealed that players prefer communication tools that provide both robustness and adaptability for effective communication.

2.11 COMPARISON OF ASYNCHRONOUS AND SYNCHRONOUS LEARNING

This section has presented a comparison of asynchronous and synchronous learning techniques on the basis of available researches. Empirical research demonstrates that both asynchronous and synchronous communication widely supports various pedagogical objectives as per the converted viewpoint of Hrastinski, Keller &Carlsson, (2010) and Pfaffmann, (2007). Giesbers et al., (2013); Alexander & Robin, (2007) hold the view based on various studies which suggest that the asynchronous communication provides students with more time for reflection of the content than the synchronous model. Conversely, Paulus, (2006) states that learners in asynchronous learning environments face challenges in constructive conveyance of their message. In fact, it has been indicated as reported by Rientes et al., (2009) that there is less engagement among learners in asynchronous learning owing to variations in the quality and quantity of contributions made in the discussion forums.

Synchronous learning, on the other hand, supports direct feedback and interaction among teachers and students that supports rectification of misconceptions, accordingto Hrastinski, Keller &Carlsson, (2010) which might result in more student engagement. Pragmatic evidence shows that synchronous communication ensures social support and strengthens relationships among students that facilitate the online learning process as per viewpoint of Hrastinski et al., (2010). The Skylar study (2009) on online delivery methods reported students' satisfaction with both synchronous and asynchronous methods. Findings of this report indicate that 80.5% of the students report that they have a higher performance on weekly quizzes in synchronous than asynchronous instruction. Other findings are that 87.8% state that participation in synchronous learning improves understanding of course material together with using materials from text lectures while 73.2% reported that they preferred synchronous online courses to asynchronous ones. It may therefore be established that teacher-learner personally and interaction through synchronous method has edge over asynchronous method

Ward, Peters, and Shelly (2010) sought to identify teacher and student perceptions regarding the quality of online synchronous instruction. Their study used survey research and qualitative phenomenological research to achieve the aims of their investigation. Results of their study demonstrate that both the teachers and students are of the firm belief that the quality of learning in synchronous learning environments is high. Specifically, the subjects of the study highlight the importance of interaction between peers, as well as interaction between instructors and students, which contribute to increase the quality of learning in the synchronous online context.

Kuyath (2008) investigated social presence among students in synchronous and asynchronous communication using two cohorts with equivalent academics

standing in GPA, ethnicity, gender, and age as homogenous group. The researcher subjects the two cohorts to a group of students without comparable characteristics as a heterogeneous group. The study participants respond to pretest and posttest assignments using the appropriate communication model for asynchronous and synchronous communication. Based on the results of pretests and posttests the study shared that synchronous communication results were in higher levels of social presence than does asynchronous interaction between the students.

In a related research undertaken by Rockinson-Szapkiw (2009) which conducted a comparative study of teaching presence social presence, and cognitive presence. The study also based its research on anticipated learning among students using only asynchronous interaction and those utilizing both synchronous and asynchronous communication tools. The cohort was subjected for using a mixture of asynchronous and synchronous courses communicates via chat and audio for discussion and collaboration. Investigation's and conclusions of this study suggest that students combining both learning models reported greater social presence than those in the asynchronous course, although a small effect size is reported for this outcome. Qualitative findings in this study indicate that synchronous communication increases collaboration and interaction compared with asynchronous communication. (Ibid). This study undertaken by Rockinson-Szapkiw (2009) supports the findings of a study conducted by Kuyath's (2008).

Johnson (2008) conducts an analysis of learning outcomes in research in few case studies, where learners utilize asynchronous discussions and synchronous chats. The researcher used a multiple choice test and sought students' opinions on the two modes of educational delivery to evaluate differences in learning outcomes. Interestingly, the researcher failed to find significant differences in their learning

improvements between synchronous and asynchronous mode implying that both modes are effective and desirable.

Somenarain et al. (2010) reported comparable discoveries in their study on the effects of online learning on student achievement students' attitudes and perceptions pointing to online education. The researchers compared satisfaction surveys and course grades from students in asynchronous and synchronous instructional groups and discovered a lack of significant differences in satisfaction and course grades between the two modes of online learning implying that both modes are not equally desirable. The findings in these two studies contradict Kuyath's (2008) findings in relation to student performance in synchronous and asynchronous modes where it was found that students in synchronous learning had higher performance on assignments than those in asynchronous learning environments.

In a similar study, Offir et al. (2008) compared deep and surface learning process in synchronous versus asynchronous systems. Their findings showed that those students in the synchronous instruction group report higher achievements in a course than those in the asynchronous cohort. Furthermore, the study showed that synchronous learning is more effective among learners with high cognitive capability than it is for those with a low cognitive capability. Once again synchronous mode turns out to be superior.

Hrastinski (2008) conducted an analysis on synchronous and asynchronous online classes by interviewing students about their perceptions and desirability of the two models. The researcher employed both quantitative and qualitative measures of actual and perceived participation applying synchronous and asynchronous communications. The researcher concluded that synchronous learning increases motivation among students while the asynchronous mode increased cognitive

participation among students (Ibid). In an earlier study, Hrastinski (2007) classified participation in two components, namely cognitive and personal participation. The researcher noted that asynchronous communication induces higher cognitive efforts by providing learners with more time for reflection while synchronous interactions stimulates higher rates of motivation and reduced ambiguity due to immediate feedback. Thus the four modes have their own relevance and effectiveness.

With the increased quest for access to education in the United States and for that matter all over the world, the only real response is through online education. This stride for knowledge takes two forms: synchronous and asynchronous learning. Synchronous learning ensures previously that teachers and students have real time communication, which offers them the capability of posing questions and receiving delayed or immediate responses then and these. Asynchronous learning on the other hand, is a valuable online instructional tool for learners spread across various time schedules because it is flexible and allows learners to participate in class at their own time and in their space, wherever that may be. To a large extent, the two instructional delivery models have been found to be sufficient in providing online education, through asynchronous learning has faced the most challenges due to increasing demand and changing technologies. Asynchronous learning can lead to isolation of the learner from the instructor which is a departure from technical practices thus psychologically affecting the students' performance. Further, asynchronous learning can lead to promoting quantity rather than quality of teach which these grades synchronous mode to be performed.

2.12 FACTORS IMPACTING LEARNERS' PREFERENCES FOR SYNCHRONOUS AND ASYNCHRONOUS WEB-BASED COURSES

In the teaching-learning process, there are numerous factors which affect the learner's performance for a particular mode of delivery. Such factors may endogenous and/or exogenous. The learners may therefore express the preferences overtly or covertly depending on whether synchronous or asynchronous modes. Thus various studies that investigated factors impacting students' perceptions and attitudes about online courses, whether for a fully synchronous or asynchronous mode revealed that interaction was a major factor which affected learners' perceptions and attitudes about using technology as reported by Moore &Kearsley, (2005) and Wang & Reeves, (2007). However according to Moore and Kearsley (2005) "effective teaching and for that matter effective learning, at a distance depends on a deep understanding of the nature of interaction in the delivery process and how to facilitate which planned interaction through technology transmitted communication". These researches pointed out that in web-based learning settings there are three types of interactions among tri-partite which include, learner-content interaction, learner-learner interaction, and learner-instructor interaction.

The ideas expressed by Moore and Kearsley (2005) and results of various other studies all tend to support those presented by the social-constructivist theory, which emphasized the significance of interaction, social context, and dialogue in providing a productive learning environment as documented by Canella &Reiff, (1994) and Vygotsky, (1978). Knowing how specifically students adopt, use and feel about the content presented to them is very important for gaining more and deeper insight into factors impacting the students' preferences and choices for synchronous and asynchronous web-based learning.

Park (2009) presented a study which investigated how postsecondary students were able to get accustomed to using e-learning. The sample of this study included 628 university students who had taken online courses in the spring semester of 2007 at Konkuk University's Seoul Campus. Both the "Structural Equation Modeling" (SEM) technique and the General Structural Model that was developed based on the Technology Acceptance Model (TAM) were employed in the study. Results of this study suggested that TAM is an excellent instrument which could be utilized to gain a better understanding of users' acceptance of e- learning. In addition, the researcher also pointed out that "even though perceived usefulness and ease of use had no direct effect on university students' intention to use e-learning, these constructs were related to the attitudes toward e-learning" (Ibid). Park (2009) further added that "Overlooking these constructs could have detrimental effects on the user's acceptance of information technology".

Wang and Reeves (2007) also carried out a similar study to Park (2009) which focused on gaining more insight into the participants' opinions about synchronous online courses. Four females Taiwanese students and one male Taiwanese student studying at a large university in the United States were participants in the study. All the participants in the study had spent one year in the United States and were enrolled in their first synchronous web-based course. A qualitative research method consisting of interviews and observations was employed by the researcher to collect data. Findings of the study revealed that the students favored traditional face-to-face classrooms to synchronous online courses. The study findings also highlighted the importance of instructional design of the web-based courses.

In another study conducted by Cao, Griffin and Bai (2009) as a qualitative design investigated factors impacting synchronous interaction. The study was

conducted on a sample of 102 undergraduate students taking courses in the Department of Computer Information Systems. The findings of the study suggested students' satisfaction with synchronous interactions impacted their overall satisfaction with web-based courses. Guan (2007) also investigated factors affecting students' success in a research class that was offered in both online and face-to-face educational formats. The sample consisted of 250 participants, who took the research class in either a face-to-face or online format. Both formats of the course were offered by the same instructor and similar assignments, tests, and activities were provided to students taking the course. The researcher also used course evaluation surveys to measure students' satisfaction with the course. Findings of this study suggested that there were not significant differences between students taking the course through both formats. However factors such as duration of online courses had an impact on students' learning outcomes. Continual assessment of the effectiveness of learners' interactions with instructor, peers, and content was---- viewed to be an essential part of the web-based learning to ensure that the learning process is heading in the right path. Furthermore, individual factors such as gender, learning style and perceived usefulness of the web-based format presented could also impact the learners' preferences for synchronous and asynchronous web-based course formats.

Lu and Chiou (2010) investigated the effect of predetermined contingent variables on the relationship between predictors and students' satisfaction with online courses. These variables included job status, gender, and learning styles. The sample consisted of 522 students who were enrolled in online courses at a Taiwanese university and who came from different departments and specializations. A questionnaire was employed by the researchers to measure the participants' satisfaction with online courses. Findings of the study suggested that there are three

main factors which affect students' satisfaction in web-based learning environments which included gender, job status, and learning styles. In another Taiwanese study, Chen (2010) investigated as to how web-based learning programs are employed. The sample in this study consisted of 110 third-year students enrolled at a technology university in central Taiwan. Findings of this study revealed that learners with different cognitive styles felt that cognitive learning styles played an important role in their preferences of web-navigation tools. Chen therefore recommended that educators ought to provide web-based instruction that accommodates different cognitive learning styles for effective learning (Ibid).

Jin (2005) also conducted a case study investigating the characteristics of students taking web-based courses to examine their perceptions of online interactions and knowledge construction in online learning environments. Findings suggested that learners tended to be more motivated to take part in online discussions when they felt that it was related to them and of great value and fulfilled their needs.

Young and Norgard (2006) pointed out that previous researches indicated that students' satisfaction with online instruction was impacted by the quality of online interaction, student-student interaction, quality and timely interaction between students and instructors, consistent course design, and availability of technical support during online interaction. These researchers developed a survey to assess that quality of online course delivery.

As many as 913 graduate and undergraduate students at an educational institute in the Costal Bend region in Texas take part in the study. Results of the survey suggested that student satisfaction was greater among students who had more experience with online courses. Moreover, the results pointed out that faculty members needed to focus on developing such online classes that attended to and met

the needs of their students' and which also provided the learners --- productive interaction with instructors, peers, and course content for an effective learning and improved result.

A study conducted by Offir, Lev, and Bezalel (2008) which investigated how synchronous and asynchronous online course formats impacted students' academic achievement. Sample of the study was comprised of 160 students taking an introductory computer course to computers delivered online via synchronous and asynchronous format.

Researchers analyzed a mixed-method approach to provide them with a better understanding of the phenomena related to in fact both the modes. A MANOVA was adopted for process and analysis of data. The results significantly highlighted as to how the degree of interaction among students, between the students and with their teachers influenced their satisfaction with online courses. Results suggested that students preferred synchronous online course delivery format over asynchronous online course delivery as it provided a richer and conducive interaction learning environment. Results of this also pointed out that students with high-level thinking were better able to overcome the negative interaction aspects associated with asynchronous online learning. The study also suggested that if the medium of instruction differs from that of the learners, it can impact the quantity and quality of interaction between learners their instructors, learners their peers and learners and content.

Sequeira (2009) conducted a study to investigate how textual "Synchronous Computer Mediated Communication" (SCMC) can help students improve their oral language proficiency and can motivate and enhance the students' learning of the language.Fifty six 56 students of 9th and 10th grade English-speaking students

enrolled in a Spanish class participated in the study. The researcher employed both quantitative and qualitative research methods for data analysis. Results of the study suggested that engaging students in authentic interaction with other students with a higher level of language proficiency through the use of textural synchronous technology induced and boosted their motivation and language learning experiences.

Similarly, Hirotani (2006) investigated the impact of synchronous and asynchronous Computer Mediated Communication (CMC) on the development of oral proficiency among learners of Japanese. The participants in the study were 36 novice learners of Japanese enrolled in the fourth semester at a large Midwestern university of Japan. Participants were divided into three groups, i.e. synchronous and asynchronous CMC groups, and a face-to-face group. Groups were subjected to pre- and post-testing. Findings of the subjective ratings revealed generally that the student favored face-to-face over the other two formats. Learners also felt that synchronous CMC better helped them to achieve a higher level of syntactic complexity than asynchronous CMC.

McBrien, Jones, and Cheng (2009) also conducted a study that investigated undergraduate students' satisfaction with synchronous online course format. Data for the study was collected from a total of six participants. Three of them were enrolled in undergraduate courses while the other three were enrolled in graduate courses at a university in Florida (USA). Participants were urged to complete course evaluation surveys. Results of this study pointed out that even though the participants were satisfied with the experiences they gained through the use of synchronous online platforms, however they felt that using too many stimuli at a time in synchronous online interaction and lack of non-verbal communication can cause confusion among

learners. This study also found that technological difficulties tend to affect students' attitudes and perceptions about synchronous online learning environments.

2.13 SUMMARY

In brief, educators ought to realize that primarily learners hold the key to the success or failure of web-based learning. For educators it is necessary to provide learners with high-quality learning and a conducive learning environment and they may continually assess the usefulness and effectiveness of web-based instruction. Especially, pay attention to their students learning styles, and make sure that web-based learning environments attend and meet learners' academic, societal, and individual needs for higher performance.

This study has made an extensive effort to present, review and analyseofthe available literature on synchronous and asynchronous modes of communication in teaching and learning process. It is substantially revealed that synchronous mode of communication takes an edge over its other counter-part indifferent situations. This analysis has therefore prepared a viable ground for the current study to enable upon a comparative analysis of synchronous and asynchronous modes of communication in teaching & learning at the level of public sector universities in Islamabad, Pakistan. Based on the data generated and analyzed with the given methodologies, the outcomes of the current study have been presented in chapter four by keeping in view the statement of the problem and subsequent set of objectives prepared after detailed view of the available literature.

CHAPTER 3
RESEARCH METHODOLOGY

The study has been carried out on "Comparative Study of Synchronous and Asynchronous Communication Approaches in Teaching and Learning Process at University level". Following procedure for the purpose of research design sampling, and data analysis has been adopted.

3.1 RESEARCH DESIGN

Research design was in quantitative in nature. Descriptive research method has been used in this study. Survey method was therefore used to serve research design of the study.

3.2 POPULATION OF THE STUDY

Population of the study was consisted of all teachers and students of Education Departments of the three public sector Universities in Islamabad (National University of Modern Languages, Allama Iqbal Open University and International Islamic University). The population size was 120 teachers and 1510 undergraduate and graduate students:-

Table 3.1

Population

Respondents	Total
Teachers	120
Students	1510

3.3 SAMPLE

Sample is a subset of population. Sampling is the process of selecting a group of subjects for a study in such a way that the individuals represent the larger group from which they will be done and selected. Suskie (1996) provides a guide to determine sampling that when population is 2000, a sample of 322 should be selected when non standardized instruments are used. According to Gay (1996, p.125), if the population size is 1500, 20% was sampled. In this study, a sample of 302 students and all 24 teachers were selected by using simple random sampling technique.

3.4 RESEARCH INSTRUMENTS

The two self-structured questionnaires have been used (One for teachers and the other for university students). The questionnaires consisting of close ended statements on 5 point Likert Scale have been used separately for teachers and students.

3.5 VALIDITY AND RELIABILITY

Validity is defined as a measure of truth or falsity of the data obtained through using the research instrument (Burns & Grove, 2001). Content validity was determined from the review of related literature in consultation with experts and personal involvements of the researcher. The validity certificates obtained from the Experts. While reliability of the instruments has been ensured through Cronbach Alpha, result was0.85. .

3.6 DATA COLLECTION

The researcher personally visited the Department of Education of selected Universities to administer the research instrument and collected the questionnaires from the respondents.

3.7 DATA ANALYSIS

It was quantitative study. The collected data were scored, tabulated and analyzed in percentage and frequency. The data were analyzed through Statistical Package for Social Sciences (SPSS) version 22.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

This chapter deals with analysis and interpretation of data. Descriptive statistics is used to summarize responses of the respondents to statements and inferential statistics is used to compare the differences among response made by university students and teachers. Data analysis and interpretation is presented below:

4.1 TEACHER QUESTIONNAIRE

Table 4.1.1

Gender-wise Demographic Description

	Frequency	Percent
Male	82	75.2
Female	27	24.8
Total	109	100.0

Table 4.1.1 shows that 75% were male and 25% were female participants. It was concluded that most of the contributors were male participants.

Table 4.1.2

Qualification-wise Demographic Description

	Frequency	Percent
MA/MSc	16	14.7
M.Phil/MS	50	45.9
PhD	43	39.4
Total	109	100.0

Table 4.1.2 shows that 15% were MA/MSc and 46% were M.Phil/MS participants, and 39 were PhD teachers. So, it was concluded that most of the contributors were M.Phil/MS teachers and all also have professional degrees.

Table 4.1.3

Experience-wise Demographic Description

	Frequency	Percent
less than 5 years	13	11.9
5-10 years	42	38.5
10-15 years	23	21.1
16 onward	31	28.4
Total	109	100.0

Table 4.1.3 shows that, 10% teachers were less than 5 years' experience, 39% teachers were 5-10 years' experience, 21% teachers were 10-15 years' experience, and 28% of teachers were 16 onward years' experience. Thus, it is concluded that most of the teachers have 5-10 years' experience.

Table 4.1.4

I Have The Opportunity Of Asynchronous Online Discussion With Students

	Frequency	Percent
SA	30	27.5
A	39	35.8
UN	25	22.9
DA	12	11.0
SDA	3	2.8
Total	109	100.0

According to table 4.1.4,28% teachers\ were strongly agree, 36% teachers were agree, 23% teachers were neutral, 11% teachers were disagree and 3% teachers were strongly disagree with the statement I have the opportunity of asynchronous online discussion with students. So it is concluded that majority of the teachers had positive response about the statement that I have the opportunity of asynchronous online discussion with students.

Table 4.1.5

Asynchronous Approach Provides A Chance To Think Twice In Responding The Questions

	Frequency	Percent
SA	14	12.8
A	54	49.5
UN	20	18.3
DA	16	14.7
SDA	5	4.6
Total	109	100.0

According to table 4.1.5, 13% teachers\ were strongly agreed, 50% teachers agreed, 18% teachers were neutral, 18% teachers disagreed and 5% teachers were strongly disagreed with the statement that Asynchronous approach provides a chance to think twice in responding the questions. So it is concluded that majority of the teachers had positive response about the statement that Asynchronous approach provides a chance to think twice in responding the questions.

Table 4.1.6

Asynchronous Communication Approach Is Effective In Promoting Concept Learning Of Students

	Frequency	Percent
SA	32	29.4
A	24	22.0
UN	25	22.9
DA	19	17.4
SDA	9	8.3
Total	109	100.0

According to table 4.1.6, 13% teachers\ were strongly agree, 50% teachers were agree, 18% teachers were neutral, 18% teachers were disagree and 8% teachers were strongly disagree with the statement that Asynchronous communication approach is effective in promoting concept learning of students. So it is concluded that majority of the teachers had positive response about the statement that Asynchronous communication approach is effective in promoting concept learning of students.

Table 4.1.7

I Experience Nominal Communication Problems While Asynchronous Delivery Of Courses With Students

	Frequency	Percent
SA	26	23.9
A	30	27.5
UN	13	11.9
DA	13	11.9
SDA	27	24.8
Total	109	100.0

According to table 4.1.7, 24% teachers\ were strongly agree, 28% teachers were agree, 12% teachers were neutral, 12% teachers were disagree and 25% teachers were strongly disagree with the statement that I experience nominal communication problems while asynchronous delivery of courses with students. So it is concluded that majority of the teachers had positive response about the statement that I experience nominal communication problems while asynchronous delivery of courses with students.

Table 4.1.8

Asynchronous Delivery Of Courses Is Effective For Student Learning

	Frequency	Percent
SA	17	15.6
A	42	38.5
UN	23	21.1
DA	18	16.5
SDA	9	8.3
Total	109	100.0

According to table 4.1.8, 16% teachers\ were strongly agree, 39% teachers were agree, 21% teachers were neutral, 17% teachers disagree and 8% teachers were strongly disagree with the statement that Asynchronous delivery of courses is effective for student learning. So it is concluded that majority of the teachers had positive response about the statement that Asynchronous delivery of courses is effective for student learning.

Table 4.1.9

I Rate The Overall Asynchronous Delivery Of Courses During My Education As Effective

	Frequency	Percent
SA	42	38.5
A	40	36.7
UN	9	8.3
SDA	18	16.5
Total	109	100.0

According to table 4.1.9,38,5% teachers were strongly agree, 36,7% teachers were agree (combined Strongly agree and disagree 75.2%) 8% the teachers were neutral, 00.0% teachers were disagree and 17% teachers were strongly disagree with the statement that I rate the overall asynchronous delivery of courses during my education as effective. So it is concluded that majority of the teachers had positive response about the statement that I rate the overall asynchronous delivery of courses during my education as effective.

Table 4.1.10

I Prefer To Take Asynchronous Online Classes To Traditional Classes

	Frequency	Percent
SA	33	30.3
A	45	41.3
UN	18	16.5
DA	4	3.7
SDA	9	8.3
Total	109	100.0

According to table 4.1.10, 30% teachers\ were strongly agree, 41% teachers were agree, 17% teachers were neutral, 4% teachers were disagree and 8% teachers were strongly disagree with the statement that I prefer to take asynchronous online classes to traditional classes. So it is concluded that majority of the teachers had positive response about the statement that I prefer to take asynchronous online classes to traditional classes.

Table 4.1.11

Asynchronous Course Delivery Meets My Expectations

	Frequency	Percent
SA	41	37.6
A	31	28.4
UN	14	12.8
DA	23	21.1
Total	109	100.0

According to table 4.1.11, 38% teachers\ were strongly agree, 28% teachers were agree, 13% teachers were neutral, 21% teachers were disagree and 00.0% teachers were strongly disagree with the statement that Asynchronous course delivery meets my expectations. So it is concluded that majority of the teachers had positive response about the statement that Asynchronous course delivery meets my expectations.

Table 4.1.12

Students In Asynchronous Online Classrooms Feel Comfortable Participating In Course Discussions With Other Students

	Frequency	Percent
SA	19	17.4
A	59	54.1
UN	12	11.0
DA	15	13.8
SDA	4	3.7
Total	109	100.0

According to table 4.1.12, 17% teachers\ were strongly agree, 54% teachers were agree, 11% teachers were neutral, 14% teachers were disagree and 4% teachers were strongly disagree with the statement that Students in asynchronous online classrooms feel comfortable participating in course discussions with other students. So it is concluded that majority of the teachers had positive response about the statement that Students in asynchronous online classrooms feel comfortable participating in course discussions with other students.

Table 4.1.13

I Am Able To Communicate With Other Students During The Discussion Activities

	Frequency	Percent
SA	21	19.3
A	37	33.9
UN	24	22.0
DA	18	16.5
SDA	9	8.3
Total	109	100.0

According to table 4.1.13, 19% teachers\ were strongly agree, 34% teachers were agree, 22% teachers were neutral, 17% teachers were disagree and 8% teachers were strongly disagree with the statement that I am able to communicate with other students during the discussion activities. So it is concluded that majority of the teachers had positive response about the statement that I am able to communicate with other students during the discussion activities.

Table 4.1.14

I Am Able To Share Learning Experiences With Other Students During The Discussion Activities

	Frequency	Percent
SA	14	12.8
A	44	40.4
UN	28	25.7
SDA	23	21.1
Total	109	100.0

According to table 4.1.14, 13% teachers\ were strongly agree, 40% teachers were agree, 26% teachers were neutral, 00.0% teachers were disagree and 21% teachers were strongly disagree with the statement that I am able to share learning experiences with other students during the discussion activities. So it is concluded that majority of the teachers had positive response about the statement that I am able to share learning experiences with other students during the discussion activities.

Table 4.1.15

Asynchronous Contact With Fellow Students Helps Me Get More Out Of The Discussion Activities

	Frequency	Percent
SA	23	21.1
A	51	46.8
UN	12	11.0
DA	9	8.3
SDA	14	12.8
Total	109	100.0

According to table 4.1.15,21% teachers were strongly agree, 49% teachers were agree, 13% teachers were neutral, 8% teachers were disagree and 21% teachers were strongly disagree with the statement that Asynchronous contact with fellow students helps me get more out of the discussion activities. So it is concluded that majority of the teachers had positive response about the statement that Asynchronous contact with fellow students helps me get more out of the discussion activities.

Table 4.1.16

The Discussion Activities Enable Me To Collaborate With Other Students

	Frequency	Percent
SA	20	18.3
A	50	45.9
UN	13	11.9
DA	18	16.5
SDA	8	7.3
Total	109	100.0

According to table 4.1.16, 19% teachers\ were strongly agree, 46% teachers were agree, 12% teachers were neutral, 17% teachers were disagree and 7% teachers were strongly disagree with the statement that the discussion activities enable me to collaborate with other students. So it is concluded that majority of the teachers had positive response about the statement that the discussion activities enable me to collaborate with other students.

Table 4.1.17

I Am Able To Interact With The Instructor Through The Discussion Activities

	Frequency	Percent
SA	34	31.2
A	41	37.6
UN	24	22.0
DA	5	4.6
SDA	5	4.6
Total	109	100.0

According to table 4.1.17,31% teachers\ were strongly agree, 38% teachers were agree, 22% teachers were neutral, 5% teachers were disagree and 5% teachers were strongly disagree with the statement that I am able to interact with the instructor through the discussion activities. So it is concluded that majority of the teachers had positive response about the statement that I am able to interact with the instructor through the discussion activities.

Table 4.1.18

The Instructors Use Effective Teaching Methods For Asynchronous Course Delivery

	Frequency	Percent
SA	5	4.6
A	49	45.0
UN	37	33.9
DA	10	9.2
SDA	8	7.3
Total	109	100.0

According to table 4.1.18,5% teachers\ were strongly agree, 45% teachers were agree, 34% teachers were neutral, 9% teachers were disagree and 7% teachers were strongly disagree with the statement that the instructors use effective teaching methods for asynchronous course delivery. So it is concluded that majority of the teachers had positive response about the statement that the instructors use effective teaching methods for asynchronous course delivery.

Table 4.1.19

Asynchronous Delivery Should Have Wider Use In Higher Education Programs

	Frequency	Percent
SA	37	33.9
A	37	33.9
UN	8	7.3
DA	18	16.5
SDA	9	8.3
Total	109	100.0

According to table 4.1.19, 34% teachers\ were strongly agree, 34% teachers were agree, 7% teachers were neutral, 17% teachers were disagree and 8% teachers were strongly disagree with the statement that Asynchronous delivery should have wider use in higher education programs. So it is concluded that majority of the teachers had positive response about the statement that Asynchronous delivery should have wider use in higher education programs.

Table 4.1.20

Asynchronous Methods Facilitate Effective Learning Of The Material

	Frequency	Percent
SA	46	42.2
A	32	29.4
UN	13	11.9
DA	9	8.3
SDA	9	8.3
Total	109	100.0

According to table 4.1.20, 42% teachers\ were strongly agree, 29% teachers were agree, 12% teachers were neutral, 8% teachers were disagree and 8% teachers were strongly disagree with the statement that Asynchronous methods facilitate effective learning of the material. So it is concluded that majority of the teachers had positive response about the statement that Asynchronous methods facilitate effective learning of the material.

Table 4.1.21

I prefer the flexibility of taking an asynchronous course to a traditional in-house course

	Frequency	Percent
SA	38	34.9
A	27	24.8
UN	13	11.9
DA	23	21.1
SDA	8	7.3
Total	109	100.0

According to table 4.1.21, 35% teachers were strongly agree, 25% teachers were agree, 12% teachers were neutral, 21% teachers were disagree and 7% teachers were strongly disagree with the statement that I prefer the flexibility of taking an asynchronous course to a traditional in-house course. So it is concluded that majority of the teachers had positive response about the statement that I prefer the flexibility of taking an asynchronous course to a traditional in-house course.

Table 4.1.22

I Appreciate Having The Time To Think About My Responses To Questions Through Asynchronous Discussions

	Frequency	Percent
SA	33	30.3
A	37	33.9
UN	21	19.3
DA	14	12.8
SDA	4	3.7
Total	109	100.0

According to table 4.1.22, 30% teachers were strongly agree, 34% teachers were agree, 19% teachers were neutral, 13% teachers were disagree and 4% teachers were strongly disagree with the statement that I appreciate having the time to think about my responses to questions through asynchronous discussions. So it is concluded that majority of the teachers had positive response about the statement that I appreciate having the time to think about my responses to questions through asynchronous discussions.

Table 4.1.23

I Believe That Taking Courses In An Asynchronous Online Classroom Has Helped Me In My Educational Pursuits

	Frequency	Percent
SA	41	37.6
A	37	33.9
UN	13	11.9
DA	13	11.9
SDA	5	4.6
Total	109	100.0

According to table 4.1.23,, 38% teachers\ were strongly agree, 34% teachers were agree, 12% teachers were neutral, 12% teachers were disagree and 5% teachers were strongly disagree with the statement that I believe that taking courses in an asynchronous online classroom has helped me in my educational pursuits. So it is concluded that majority of the teachers had positive response about the statement that I believe that taking courses in an asynchronous online classroom has helped me in my educational pursuits.

Table 4.1.24

Synchronous Approach Significant In Receiving Immediate Response Of Students

	Frequency	Percent
SA	27	24.8
A	36	33.0
UN	19	17.4
DA	18	16.5
SDA	9	8.3
Total	109	100.0

According to table 4.1.24,25% teachers were strongly agree, 33% teachers were agree, 17% teachers were neutral, 17% teachers were disagree and 8% teachers were strongly disagree with the statement that Synchronous approach significant in receiving immediate response of students. So it is concluded that majority of the teachers had positive response about the statement that Synchronous approach significant in receiving immediate response of students.

Table 4.1.25

Synchronous Delivery Of Courses Is Effective For Student Learning

	Frequency	Percent
SA	14	12.8
A	50	45.9
UN	13	11.9
DA	14	12.8
SDA	18	16.5
Total	109	100.0

According to table 4.1.25, 13% teachers\ were strongly agree, 46% teachers were agree, 12% teachers were neutral, 13% teachers were disagree and 17% teachers were strongly disagree with the statement that Synchronous delivery of courses is effective for student learning. So it is concluded that majority of the teachers had positive response about the statement that Synchronous delivery of courses is effective for student learning.

Table 4.1.26

I Experience Minimal Communication Problems With Students Related To The Synchronous Delivery Of Courses

	Frequency	Percent
SA	56	51.4
A	25	22.9
UN	9	8.3
DA	10	9.2
SDA	9	8.3
Total	109	100.0

According to table 4.1.26, 51% teachers\ were strongly agree, 23% teachers were agree, 8% teachers were neutral, 9% teachers were disagree and 8% teachers were strongly disagree with the statement that I experience minimal communication problems with students related to the synchronous delivery of courses. So it is concluded that majority of the teachers had positive response about the statement that I experience minimal communication problems with students related to the synchronous delivery of courses.

Table 4.1.27

I Learn As Much From This Synchronous Videoconferencing Class As I Would Have Learned From A Traditional Lecture Class

	Frequency	Percent
SA	23	21.1
A	47	43.1
UN	23	21.1
DA	8	7.3
SDA	8	7.3
Total	109	100.0

According to table 4.1.27,21% teachers\ were strongly agree, 43% teachers were agree, 21% teachers were neutral, 7% teachers were disagree and 7% teachers were strongly disagree with the statement that I learn as much from this synchronous videoconferencing class as I would have learned from a traditional lecture class. So it is concluded that majority of the teachers had positive response about the statement that I learn as much from this synchronous videoconferencing class as I would have learned from a traditional lecture class.

Table 4.1.28

Synchronous Delivery Of Courses Is As Effective As Taking Courses In The Traditional Classroom

	Frequency	Percent
SA	19	17.4
A	27	24.8
UN	32	29.4
DA	23	21.1
SDA	8	7.3
Total	109	100.0

According to table 4.1.28,17% teachers\ were strongly agree, 25% teachers were agree, 29% teachers were neutral, 21% teachers were disagree and 7% teachers were strongly disagree with the statement that Synchronous delivery of courses is as effective as taking courses in the traditional classroom. So it is concluded that majority of the teachers had positive response about the statement that Synchronous delivery of courses is as effective as taking courses in the traditional classroom.

Table 4.1.29

Synchronous Delivery Of Courses Is Effective In Preparing Me As A Graduate Student

	Frequency	Percent
SA	35	32.1
A	31	28.4
DA	29	26.6
SDA	14	12.8
Total	109	100.0

According to table 4.1.29, 32% teachers\ were strongly agree, 28% teachers were agree, 00.0% teachers were neutral, 27% teachers were disagree and 13% teachers were strongly disagree with the statement that Synchronous delivery of courses is effective in preparing me as a graduate student. So it is concluded that majority of the teachers had positive response about the statement that Synchronous delivery of courses is effective in preparing me as a graduate student.

Table 4.1.30

I Rate The Overall Synchronous Delivery Of Courses During My Education As Effective

	Frequency	Percent
SA	19	17.4
A	41	37.6
UN	22	20.2
DA	17	15.6
SDA	10	9.2
Total	109	100.0

According to table 4.1.30, 17% teachers\ were strongly agree, 38% teachers were agree, 20% teachers were neutral, 16% teachers were disagree and 9% teachers were strongly disagree with the statement that I rate the overall synchronous delivery of courses during my education as effective. So it is concluded that majority of the teachers had positive response about the statement that I rate the overall synchronous delivery of courses during my education as effective.

Table 4.1.31

I Prefer To Take Synchronous Videoconferencing Classes To Traditional Classes

	Frequency	Percent
SA	37	33.9
A	22	20.2
UN	23	21.1
DA	14	12.8
SDA	13	11.9
Total	109	100.0

According to table 4.1.31, 34% teachers\ were strongly agree, 20% teachers were agree, 21% teachers were neutral, 13% teachers were disagree and 12% teachers were strongly disagree with the statement that I prefer to take synchronous videoconferencing classes to traditional classes. So it is concluded that majority of the teachers had positive response about the statement that I prefer to take synchronous videoconferencing classes to traditional classes.

Table 4.1.32

Synchronous Course Delivery Meets My Expectations

	Frequency	Percent
SA	36	33.0
A	37	33.9
UN	19	17.4
DA	13	11.9
SDA	4	3.7
Total	109	100.0

According to table 4.1.32, 33% teachers\ were strongly agree, 34% teachers were agree, 17% teachers were neutral, 12% teachers were disagree and 3% teachers were strongly disagree with the statement that Synchronous course delivery meets my expectations. So it is concluded that majority of the teachers had positive response about the statement that Synchronous course delivery met my expectations.

Table 4.1.33

Live Contact With Fellow Students Helps Me Get More Out Of The Discussion Activities

	Frequency	Percent
SA	41	37.6
A	36	33.0
UN	17	15.6
DA	15	13.8
Total	109	100.0

According to table 4.1.33, 38% teachers\ were strongly agree, 33% teachers were agree, 16% teachers were neutral, 14% teachers were disagree and 00.0% teachers were strongly disagree with the statement that Live contact with fellow students helps me get more out of the discussion activities. So it is concluded that majority of the teachers had positive response about the statement that Live contact with fellow students helped me to get more out of the discussion activities.

Table 4.1.34

I Am Able To Interact With The Instructor During The Discussion Activities

	Frequency	Percent
SA	32	29.4
A	34	31.2
DA	28	25.7
SDA	15	13.8
Total	109	100.0

According to table 4.1.34, 29% teachers\ were strongly agree, 31% teachers were agree, 26% teachers were neutral, 00.0% teachers were disagree and 14% teachers were strongly disagree with the statement that I am able to interact with the instructor during the discussion activities. So it is concluded that majority of the teachers had positive response about the statement that I am able to interact with the instructor during the discussion activities.

Table 4.1.35

The Instructors Use Effective Teaching Methods For Synchronous Course Delivery

	Frequency	Percent
SA	17	15.6
A	41	37.6
UN	22	20.2
DA	18	16.5
SDA	11	10.1
Total	109	100.0

According to table 4.1.35, 16% teachers\ were strongly agree, 38% teachers were agree, 20% teachers were neutral, 17% teachers were disagree and 10% teachers were strongly disagree with the statement that The Instructors Use Effective Teaching Methods For Synchronous Course Delivery. So it is concluded that majority of the teachers had positive response about the statement that The Instructors Use Effective Teaching Methods for Synchronous Course Delivery.

Table 4.1.36

Technical problems with the distance delivery system seldom interfere with my learning

	Frequency	Percent
SA	34	31.2
A	21	19.3
UN	27	24.8
DA	12	11.0
SDA	15	13.8
Total	109	100.0

According to table 4.1.36, 16% teachers\ were strongly agree, 38% teachers were agree, 20% teachers were neutral, 17% teachers were disagree and 10% teachers were strongly disagree with the statement that Technical problems with the distance delivery system seldom interfere with my learning. So it is concluded that majority of the teachers had positive response about the statement that Technical problems with the distance delivery system seldom interfere with my learning.

Table 4.1.37

Synchronous Delivery Should Have Wider Use In Higher Education Programs

	Frequency	Percent
SA	20	18.3
A	40	36.7
UN	23	21.1
DA	9	8.3
SDA	17	15.6
Total	109	100.0

According to table 4.1.37, 18% teachers\ were strongly agree, 37% teachers were agree, 21% of the teachers were neutral, 8% teachers were disagree and 16% teachers were strongly disagree with the statement that Synchronous delivery should have wider use in higher education programs. So it is concluded that majority of the teachers had positive response about the statement that Synchronous delivery should have wider use in higher education programs.

Table 4.1.38

Synchronous Methods Facilitate Effective Learning Of The Material

	Frequency	Percent
SA	38	34.9
A	38	34.9
UN	15	13.8
DA	18	16.5
Total	109	100.0

According to table 4.1.38,35% teachers\ were strongly agree, 35% teachers were agree, 14% teachers were neutral, 17% teachers were disagree and 00.0% teachers were strongly disagree with the statement that Synchronous methods facilitate effective learning of the material. So it is concluded that majority of the teachers had positive response about the statement that Synchronous methods facilitate effective learning of the material.

Table 4.1.39

I prefer the flexibility of taking A Synchronous Course toa Traditional In-House Course

	Frequency	Percent
SA	38	34.9
A	23	21.1
UN	21	19.3
DA	14	12.8
SDA	13	11.9
Total	109	100.0

According to table 4.1.39, 35% teachers\ were strongly agree, 21% teachers were agree, 19% of the teachers were neutral, 13% teachers were disagree and 12% teachers were strongly disagree with the statement that I Prefer The Flexibility Of Taking A Synchronous Course To A Traditional In-House Course. So it is concluded that majority of the teachers had positive response about the statement that I Prefer the Flexibility of Taking a Synchronous Course to a Traditional In-House Course.

Table 4.1.40

IAppreciate The Live Discussions That Take Place In The Synchronous Videoconferencing Classroom

	Frequency	Percent
SA	23	21.1
A	58	53.2
UN	9	8.3
DA	5	4.6
SDA	14	12.8
Total	109	100.0

According to table 4.1.40,21% teachers\ were strongly agree, 53% teachers were agree, 8% teachers were neutral, 5% teachers were disagree and 13% teachers were strongly disagree with the statement that I appreciate the live discussions that take place in the synchronous videoconferencing classroom. So it is concluded that majority of the teachers had positive response about the statement that I appreciate the live discussions that take place in the synchronous videoconferencing classroom.

Table 4.1.41

I Believe That Taking Courses Through The Live Synchronous Videoconferencing Modality Has Helped Me In My Educational Pursuits

	Frequency	Percent
SA	51	46.8
A	18	16.5
UN	23	21.1
DA	8	7.3
SDA	9	8.3
Total	109	100.0

According to table 4.1.41 presents that 47% teachers\ were strongly agree, 17% teachers were agree, 21% teachers were neutral, 7% teachers were disagree and 8% teachers were strongly disagree with the statement that I believe that taking courses through the live synchronous videoconferencing modality has helped me in my educational pursuits. So it is concluded that majority of the teachers had positive response about the statement that I believe that taking courses through the live synchronous videoconferencing modality has helped me in my educational pursuits.

4.2 Students Questionnaire

Table 4.2.1

I Have The Opportunity Of Asynchronous Online Discussion With Students

	Frequency	Percent
SA	102	36.7
A	108	38.8
UN	44	15.8
DA	15	5.4
SDA	9	3.2
Total	278	100.0

According to table 4.2.1,37% students were strongly agree, 39% students were agree, 16% students were neutral, 5% students were disagree and 3% students were strongly disagree with the statement that I have the opportunity of asynchronous online discussion with students. So it is concluded that majority of the students had positive response about the statement that I have the opportunity of asynchronous online discussion with students.

Table 4.2.2

Asynchronous Approach Provides A Chance To Think Twice In Responding The Questions

	Frequency	Percent
SA	62	22.3
A	132	47.5
UN	54	19.4
DA	5	1.8
SDA	25	9.0
Total	278	100.0

According to table 4.2.2, 22% students were strongly agree, 48% students were agree, 19% students were neutral, 2% students were disagree and 9% students were strongly disagree with the statement that Asynchronous approach provides a chance to think twice in responding the questions. So it is concluded that majority of the teachers had positive response about the statement that Asynchronous approach provides a chance to think twice in responding the questions.

Table 4.2.3

Asynchronous Communication Approach Is Effective In Promoting Concept Learning Of Students

	Frequency	Percent
SA	101	36.3
A	102	36.7
UN	40	14.4
DA	27	9.7
SDA	8	2.9
Total	278	100.0

According to table 4.2.3,36% students were strongly agree, 37% students were agree, 14% students were neutral, 10% students were disagree and 3% students were strongly disagree with the statement that Asynchronous communication approach is effective in promoting concept learning of students. So it is concluded that majority of the teachers had positive response about the statement that Asynchronous communication approach is effective in promoting concept learning of students.

Table 4.2.4

I Experience Nominal Communication Problems While Asynchronous Delivery Of Courses With Students

	Frequency	Percent
SA	73	26.3
A	110	39.6
UN	36	12.9
DA	44	15.8
SDA	15	5.4
Total	278	100.0

According to table 4.2.4, 26% students were strongly agree, 40% students were agree, 13% students were neutral, 16% students were disagree and 5% students were strongly disagree with the statement that I experience nominal communication problems while asynchronous delivery of courses with students. So it is concluded that majority of the teachers had positive response about the statement that I experience nominal communication problems while asynchronous delivery of courses with students.

Table 4.2.5

Asynchronous Delivery Of Courses Is Effective For Student Learning

	Frequency	Percent
SA	111	39.9
A	98	35.3
UN	20	7.2
DA	27	9.7
SDA	22	7.9
Total	278	100.0

According to table 4.2.5,40% students were strongly agree, 35% students were agree, 7% students were neutral, 10% students were disagree and 8% students were strongly disagree with the statement that Asynchronous delivery of courses is effective for student learning. So it is concluded that majority of the students had positive response about the statement that Asynchronous delivery of courses is effective for student learning.

Table 4.2.6

I Rate The Overall Asynchronous Delivery Of Courses During My Education As Effective

	Frequency	Percent
SA	142	51.1
A	67	24.1
UN	41	14.7
DA	10	3.6
SDA	18	6.5
Total	278	100.0

According to table 4.2.6,51% students were strongly agree, 24% students were agree, 15% students were neutral, 4% students were disagree and 7% students were strongly disagree with the statement that I rate the overall asynchronous delivery of courses during my education as effective. So it is concluded that majority of the studentshad positive response about the statement that I rate the overall asynchronous delivery of courses during my education as effective.

Table 4.2.7

I Prefer To Take Asynchronous Online Classes To Traditional Classes

	Frequency	Percent
SA	88	31.7
A	97	34.9
UN	51	18.3
DA	28	10.1
SDA	14	5.0
Total	278	100.0

According to table 4.2.7,32% students were strongly agree, 35% students were agree, 18% students were neutral, 10% students were disagree and 5% students were strongly disagree with the statement that I prefer to take asynchronous online classes to traditional classes. So it is concluded that majority of the teachers had positive response about the statement that I prefer to take asynchronous online classes to traditional classes.

Table 4.2.8

Asynchronous Course Delivery Meets My Expectations

	Frequency	Percent
SA	116	41.7
A	83	29.9
UN	37	13.3
DA	29	10.4
SDA	13	4.7
Total	278	100.0

According to table 4.2.8,42% students were strongly agree, 30% students were agree, 13% students were neutral, 10% students were disagree and 5% students were strongly disagree with the statement that Asynchronous course delivery meets my expectations. So it is concluded that majority of the students had positive response about the statement that Asynchronous course delivery meets my expectations.

Table 4.2.9

Students In Asynchronous Online Classrooms Feel Comfortable Participating In Course Discussions With Other Students

	Frequency	Percent
SA	89	32.0
A	114	41.0
UN	47	16.9
DA	16	5.8
SDA	12	4.3
Total	278	100.0

According to table 4.2.9,32% students were strongly agree, 41% students were agree, 17% students were neutral, 6% students were disagree and 5% students were strongly disagree with the statement that Students in asynchronous online classrooms feel comfortable participating in course discussions with other students. So it is concluded that majority of the students had positive response about the statement that Students in asynchronous online classrooms feel comfortable participating in course discussions with other students.

Table 4.2.10

I Am Able To Communicate With Other Students During The Discussion Activities

	Frequency	Percent
SA	128	46.0
A	81	29.1
UN	24	8.6
DA	19	6.8
SDA	26	9.4
Total	278	100.0

According to table 4.2.10,46% students were strongly agree, 29% students were agree, 9% students were neutral, 7% students were disagree and 9% students were strongly disagree with the statement that I am able to communicate with other students during the discussion activities. So it is concluded that majority of the students had positive response about the statement that I am able to communicate with other students during the discussion activities.

Table 4.2.11

I Am Able To Share Learning Experiences With Other Students During The Discussion Activities

	Frequency	Percent
SA	107	38.5
A	99	35.6
UN	48	17.3
DA	10	3.6
SDA	14	5.0
Total	278	100.0

According to table 4.2.1139% students were strongly agree, 36% students were agree, 17% students were neutral, 3.6% students were disagree and 5% students were strongly disagree with the statement that I am able to share learning experiences with other students during the discussion activities. So it is concluded that majority of the students had positive response about the statement that I am able to share learning experiences with other students during the discussion activities.

Table 4.2.12

Asynchronous Contact With Fellow Students Helps Me Get More Out Of The Discussion Activities

	Frequency	Percent
SA	108	38.8
A	92	33.1
UN	40	14.4
DA	21	7.6
SDA	17	6.1
Total	278	100.0

According to table 4.2.12,39% students were strongly agree, 33% students were agree, 14% students were neutral, 8% students were disagree and 6% students were strongly disagree with the statement that Asynchronous contact with fellow students helps me get more out of the discussion activities. So it is concluded that majority of the teachers had positive response about the statement that I Asynchronous contact with fellow students helps me get more out of the discussion activities.

Table 4.2.13

The Discussion Activities Enable Me To Collaborate With Other Students

	Frequency	Percent
SA	95	34.2
A	91	32.7
UN	50	18.0
DA	14	5.0
SDA	28	10.1
Total	278	100.0

According to table 4.2.13,34% students were strongly agree, 33% students were agree, 18% students were neutral, 5% students were disagree and 10% students were strongly disagree with the statement that the discussion activities enable me to collaborate with other students. So it is concluded that majority of the students had positive response about the statement that the discussion activities enable me to collaborate with other students.

Table 4.2.14

I Am Able To Interact With The Instructor Through The Discussion Activities

	Frequency	Percent
SA	116	41.7
A	68	24.5
UN	57	20.5
DA	26	9.4
SDA	11	4.0
Total	278	100.0

According to table 4.2.14,42% students were strongly agree, 25% students were agree, 21% students were neutral, 9% students were disagree and 4% students were strongly disagree with the statement that I am able to interact with the instructor through the discussion activities. So it is concluded that students of the teachers had positive response about the statement that I am able to interact with the instructor through the discussion activities.

Table 4.2.15

The Instructors Use Effective Teaching Methods For Asynchronous Course Delivery

	Frequency	Percent
SA	98	35.3
A	90	32.4
UN	53	19.1
DA	31	11.2
SDA	6	2.2
Total	278	100.0

According to table 4.2.15,35% students were strongly agree, 32% students were agree, 19% students were neutral, 11% students were disagree and 2% students were strongly disagree with the statement that the instructors use effective teaching methods for asynchronous course delivery. So it is concluded that majority of the students had positive response about the statement that The instructors use effective teaching methods for asynchronous course delivery.

Table 4.2.16

Asynchronous Delivery Should Have Wider Use In Higher Education Programs

	Frequency	Percent
SA	121	43.5
A	63	22.7
UN	40	14.4
DA	33	11.9
SDA	21	7.6
Total	278	100.0

According to table 4.2.16,44% students were strongly agree, 23% students were agree, 14% students were neutral, 12% students were disagree and 8% students were strongly disagree with the statement that Asynchronous delivery should have wider use in higher education programs. So it is concluded that majority of the students had positive response about the statement that Asynchronous delivery should have wider use in higher education programs.

Table 4.2.17

Asynchronous Methods Facilitate Effective Learning Of The Material

	Frequency	Percent
SA	121	43.5
A	84	30.2
UN	32	11.5
DA	20	7.2
SDA	20	7.2
Total	278	100.0

According to table 4.2.17,44% students were strongly agree, 30% students were agree, 12% students were neutral, 7% students were disagree and 7% students were strongly disagree with the statement that Asynchronous methods facilitate effective learning of the material. So it is concluded that majority of the students had positive response about the statement that Asynchronous methods facilitate effective learning of the material.

Table 4.2.18

I Prefer The Flexibility Of Taking An Asynchronous Course To A Traditional In-House Course

	Frequency	Percent
SA	65	23.4
A	112	40.3
UN	73	26.3
DA	17	6.1
SDA	11	4.0
Total	278	100.0

According to table 4.2.18,23% students were strongly agree, 40% students were agree, 26% students were neutral, 6% students were disagree and 4% students were strongly disagree with the statement that I prefer the flexibility of taking an asynchronous course to a traditional in-house course. So it is concluded that majority of the students had positive response about the statement that I prefer the flexibility of taking an asynchronous course to a traditional in-house course.

Table 4.2.19

I Appreciate Having The Time To Think About My Responses To Questions Through Asynchronous Discussions

	Frequency	Percent
SA	109	39.2
A	72	25.9
UN	53	19.1
DA	6	2.2
SDA	38	13.7
Total	278	100.0

According to table 4.2.19,39% students were strongly agree, 26% students were agree, 19% students were neutral, 2% students were disagree and 18% students were strongly disagree with the statement that I appreciate having the time to think about my responses to questions through asynchronous discussions. So it is concluded that majority of the students had positive response about the statement that I appreciate having the time to think about my responses to questions through asynchronous discussions.

Table 4.2.20

I Believe That Taking Courses In An Asynchronous Online Classroom Has Helped Me In My Educational Pursuits

	Frequency	Percent
SA	125	45.0
A	75	27.0
UN	41	14.7
DA	19	6.8
SDA	18	6.5
Total	278	100.0

According to table 4.2.20,45% students were strongly agree, 27% students were agree, 15% students were neutral, 7% students were disagree and 7% students were strongly disagree with the statement that I believe that taking courses in an asynchronous online classroom has helped me in my educational pursuits. So it is concluded that majority of the students had positive response about the statement that I believe that taking courses in an asynchronous online classroom has helped me in my educational pursuits.

Table 4.2.21

Synchronous Approach Significant In Receiving Immediate Response Of Students

	Frequency	Percent
SA	95	34.2
A	89	32.0
UN	53	19.1
DA	21	7.6
SDA	20	7.2
Total	278	100.0

According to table 4.2.21,34% students were strongly agree, 32% students were agree, 19% students were neutral, 8% students were disagree and 7% students were strongly disagree with the statement that Synchronous approach significant in receiving immediate response of students. So it is concluded that majority of the students had positive response about the statement that Synchronous approach significant in receiving immediate response of students.

Table 4.2.22

Synchronous Delivery Of Courses Is Effective For Student Learning

	Frequency	Percent
SA	85	30.6
A	99	35.6
UN	48	17.3
DA	14	5.0
SDA	32	11.5
Total	278	100.0

According to table 4.2.22,31% students were strongly agree, 36% students were agree, 17% students were neutral, 5% students were disagree and 12% students were strongly disagree with the statement that Synchronous delivery of courses is effective for student learning. So it is concluded that majority of the students had positive response about the statement that Synchronous delivery of courses is effective for student learning.

Table 4.2.23

I Experience Minimal Communication Problems With Students Related To The Synchronous Delivery Of Courses

	Frequency	Percent
SA	139	50.0
A	82	29.5
UN	33	11.9
SDA	24	8.6
Total	278	100.0

According to table 4.2.23,50% students were strongly agree, 30% students were agree, 12% students were neutral, 00.0% students were disagree and 9% students were strongly disagree with the statement that I experience minimal communication problems with students related to the synchronous delivery of courses. So it is concluded that majority of the students had positive response about the statement that I experience minimal communication problems with students related to the synchronous delivery of courses.

Table 4.2.24

I Learn As Much From This Synchronous Videoconferencing Class As I Would Have Learned From A Traditional Lecture Class

	Frequency	Percent
SA	80	28.8
A	111	39.9
UN	45	16.2
DA	17	6.1
SDA	25	9.0
Total	278	100.0

According to table 4.2.24,29% students were strongly agree, 40% students were agree, 16% students were neutral, 6% students were disagree and 9% students were strongly disagree with the statement that I learn as much from this synchronous videoconferencing class as I would have learned from a traditional lecture class. So it is concluded that majority of the students had positive response about the statement that I learn as much from this synchronous videoconferencing class as I would have learned from a traditional lecture class.

Table 4.2.25

Synchronous Delivery Of Courses Is As Effective As Taking Courses In The Traditional Classroom

	Frequency	Percent
SA	80	28.8
A	106	38.1
UN	47	16.9
DA	29	10.4
SDA	16	5.8
Total	278	100.0

According to table 4.2.25,29% students were strongly agree, 38% students were agree, 17% students were neutral, 10% students were disagree and 6% students were strongly disagree with the statement that Synchronous delivery of courses is as effective as taking courses in the traditional classroom. So it is concluded that majority of the students had positive response about the statement that Synchronous delivery of courses is as effective as taking courses in the traditional classroom.

Table 4.2.26

Synchronous Delivery Of Courses Is Effective In Preparing Me As A Graduate Student

	Frequency	Percent
SA	94	33.8
A	99	35.6
UN	48	17.3
DA	19	6.8
SDA	18	6.5
Total	278	100.0

According to table 4.2.26,34% students were strongly agree, 36% students were agree, 17% students were neutral, 7% students were disagree and 7% students were strongly disagree with the statement that Synchronous delivery of courses is effective in preparing me as a graduate student. So it is concluded that majority of the students had positive response about the statement that Synchronous delivery of courses is effective in preparing me as a graduate student.

Table 4.2.27

I Rate The Overall Synchronous Delivery Of Courses During My Education As Effective

	Frequency	Percent
SA	95	34.2
A	88	31.7
UN	52	18.7
DA	17	6.1
SDA	26	9.4
Total	278	100.0

According to table 4.2.27,34% students were strongly agree, 32% students were agree, 19% students were neutral, 6% students were disagree and 9% students were strongly disagree with the statement that I rate the overall synchronous delivery of courses during my education as effective. So it is concluded that majority of the students had positive response about the statement that I rate the overall synchronous delivery of courses during my education as effective.

Table 4.2.28

I Prefer To Take Synchronous Videoconferencing Classes To Traditional Classes

	Frequency	Percent
SA	89	32.0
A	91	32.7
UN	46	16.5
DA	44	15.8
SDA	8	2.9
Total	278	100.0

According to table 4.2.28, 32% students were strongly agree, 33% students were agree, 17% students were neutral, 16% students were disagree and 3% students were strongly disagree with the statement that I prefer to take synchronous videoconferencing classes to traditional classes. So it is concluded that majority of the teachers had positive response about the statement that I prefer to take synchronous videoconferencing classes to traditional classes.

Table 4.2.29

Synchronous Course Delivery Meets My Expectations

	Frequency	Percent
SA	86	30.9
A	96	34.5
UN	45	16.2
DA	23	8.3
SDA	28	10.1
Total	278	100.0

According to table 4.2.29,31% students were strongly agree, 35% students were agree, 16% students were neutral, 8% students were disagree and 10% students were strongly disagree with the statement that Synchronous course delivery meets my expectations. So it is concluded that majority of the students had positive response about the statement that Synchronous course delivery meets my expectations.

Table 4.2.30

Live Contact With Fellow Students Helps Me Get More Out Of The Discussion Activities

	Frequency	Percent
SA	111	39.9
A	85	30.6
UN	54	19.4
DA	13	4.7
SDA	15	5.4
Total	278	100.0

According to table 4.2.30,40% students were strongly agree, 31% students were agree, 19% students were neutral, 5% students were disagree and 5% students were strongly disagree with the statement that Live contact with fellow students helps me get more out of the discussion activities. So it is concluded that majority of the students had positive response about the statement that Live contact with fellow students helps me get more out of the discussion activities.

Table 4.2.31

I Am Able To Interact With The Instructor During The Discussion Activities

	Frequency	Percent
SA	103	37.1
A	99	35.6
UN	43	15.5
DA	15	5.4
SDA	18	6.5
Total	278	100.0

According to table 4.2.31, 26% students were strongly agree, 40% students were agree, 13% students were neutral, 16% students were disagree and 5% students were strongly disagree with the statement that I am able to interact with the instructor during the discussion activities. So it is concluded that majority of the students had positive response about the statement that I am able to interact with the instructor during the discussion activities.

Table 4.2.32

The Instructors Use Effective Teaching Methods For Synchronous Course Delivery

	Frequency	Percent
SA	86	30.9
A	94	33.8
UN	54	19.4
DA	24	8.6
SDA	20	7.2
Total	278	100.0

According to table 4.2.32,31% students were strongly agree, 34% students were agree, 19% students were neutral, 9% students were disagree and 7% students were strongly disagree with the statement that the instructors use effective teaching methods for synchronous course delivery. So it is concluded that majority of the students had positive response about the statement that the instructors use effective teaching methods for synchronous course delivery.

Table 4.2.33

Technical Problems With The Distance Delivery System Seldom Interfere With My Learning

	Frequency	Percent
SA	81	29.1
A	89	32.0
UN	68	24.5
DA	29	10.4
SDA	11	4.0
Total	278	100.0

According to table 4.2.33,29% students were strongly agree, 32% students were agree, 25% students were neutral, 10% students were disagree and 4% students were strongly disagree with the statement that Technical problems with the distance delivery system seldom interfere with my learning. So it is concluded that majority of the students had positive response about the statement that Technical problems with the distance delivery system seldom interfere with my learning.

Table 4.2.34

Synchronous Delivery Should Have Wider Use In Higher Education Programs

	Frequency	Percent
SA	77	27.7
A	110	39.6
UN	41	14.7
DA	32	11.5
SDA	18	6.5
Total	278	100.0

According to table 4.2.34,26% students were strongly agree, 40% students were agree, 13% students were neutral, 16% students were disagree and 5% students were strongly disagree with the statement that Synchronous delivery should have wider use in higher education programs. So it is concluded that majority of the students had positive response about the statement that Synchronous delivery should have wider use in higher education programs.

Table 4.2.35

Synchronous Methods Facilitate Effective Learning Of The Material

	Frequency	Percent
SA	80	28.8
A	102	36.7
UN	64	23.0
DA	13	4.7
SDA	19	6.8
Total	278	100.0

According to table 4.2.35,29% students were strongly agree, 37% students were agree, 23% students were neutral, 5% students were disagree and 7% students were strongly disagree with the statement that Synchronous methods facilitate effective learning of the material. So it is concluded that majority of the students had positive response about the statement that Synchronous methods facilitate effective learning of the material.

Table 4.2.36

I Prefer The Flexibility Of Taking A Synchronous Course To A Traditional In-House Course

	Frequency	Percent
SA	91	32.7
A	87	31.3
UN	60	21.6
DA	18	6.5
SDA	22	7.9
Total	278	100.0

According to table 4.2.36,33% students were strongly agree, 31% students were agree, 22% students were neutral, 7% students were disagree and 8% students were strongly disagree with the statement that I prefer the flexibility of taking a synchronous course to a traditional in-house course. So it is concluded that majority of the students had positive response about the statement that I prefer the flexibility of taking a synchronous course to a traditional in-house course.

Table 4.2.37

I Appreciate The Live Discussions That Take Place In The Synchronous Videoconferencing Classroom

	Frequency	Percent
SA	98	35.3
A	101	36.3
UN	39	14.0
DA	19	6.8
SDA	21	7.6
Total	278	100.0

According to table 4.2.37,35% students were strongly agree, 36% students were agree, 14% students were neutral, 7% students were disagree and 8% students were strongly disagree with the statement that I appreciate the live discussions that take place in the synchronous videoconferencing classroom. So it is concluded that majority of the students had positive response about the statement that I appreciate the live discussions that take place in the synchronous videoconferencing classroom.

Table 4.2.38

I Believe That Taking Courses Through The Live Synchronous Videoconferencing Modality Has Helped Me In My Educational Pursuits

	Frequency	Percent
SA	110	39.6
A	84	30.2
UN	55	19.8
DA	11	4.0
SDA	18	6.5
Total	278	100.0

According to table 4.2.37, 40% students were strongly agree, 30% students were agree, 20% students were neutral, 4% students were disagree and 7% students were strongly disagree with the statement that I believe that taking courses through the live synchronous videoconferencing modality has helped me in my educational pursuits. So it is concluded that majority of the students had positive response about the statement that I believe that taking courses through the live synchronous videoconferencing modality has helped me in my educational pursuits.

CHAPTER5

SUMMARY, FINDINGS, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1SUMMARY

Online learning environments can be divided into a triad of synchronous, asynchronous and hybrid learning environments. Synchronous learning environments provide real time interaction, which can be collaborative in nature incorporating activities. However, a synchronous session requires simultaneous student-teacher presence. On the other hand, asynchronous environments are not time bound and students can work on activities on their convenience. A hybrid online environment blends synchronous sessions with asynchronous set of activities. Establishing the current practices of synchronous and asynchronous approaches in teaching and learning process, this study explore comparative study of synchronous and asynchronous communication approaches in teaching and learning process at university level.

The main objectives of the study are:Toanalyse the role of Synchronous and Asynchronous approaches in teaching and learning process. To determine learning styles of synchronous and asynchronous approaches in teaching and learning process.To investigate the perceptions of the University teachers and students about the synchronous and asynchronous approaches in teaching and learning process. To compare the perceptions of students and teachers about the preference of either synchronous or asynchronous approaches in teaching and learning process. The Research questions are: What is the role of Synchronous and Asynchronous in teaching and learning process?What are the learning styles of synchronous and

asynchronous in teaching and learning process?To what extent perception of the University teachers and students about the synchronous and asynchronous of university teachers and students in teaching and learning process?Is there any view of university students regarding the usefulness of about the synchronous and asynchronous for in learning process at university level?How to compare the views of university teachers and students about the synchronous and asynchronous usefulness of social media in learning process at university level?This study results may provide useful knowledge in order to apply social media in appropriate way for teachers and students and create awareness among them that proper use of social media become a solid tool in teaching-learning process. The study will make a valuable contribution in assessing the pros and cons of latest media on teaching-learning process.

The results of the study were significant to teachers and students at university level as well as for further research in this area. The study was carried out on "Effectiveness of Social Media in Learning Process at University level". Following procedure was adopted for the study. Descriptive research method was used in this study. According to Gay (1996, p 249) "Descriptive research involves collecting data in order to test hypotheses or to answer questions concerning the current status of the subject of the study". Survey was used as research design of the study. The population of the study was consisted of all teachers and students of education departments of public sector universities in Islamabad and Rawalpindi. The population size was120 teachers and 1510 students. Sample is a subset of population. Sampling is the process of selecting a group of subjects for a study in such a way that the individuals represent the larger group from which they were selected. Suskie (1996) provides a guide to determine sampling that when population is 2000, a sample of 322 should be selected when non standardized instruments are used. According to Gay (1996, p.125), if the

population size is 1500, 20% was sampled. In this study, a sample of 300 students and all 120 teachers has been selected and simple random sampling technique has been used to select the sample. Two self-structured questionnaire have beenused (One for teachers and the otherfor universitystudents). The questionnaire consisting of close ended statements on 5 point Likert Scale was used in this study separately for teachers and students. Validity of the instruments was checked through expert opinions. According to the experts opinion instruments were changed and modified while reliability of the instruments was ensured through Cronbach Alpha. Result was0.65. There searcher personally visited, administered and collected the questionnaires from the respondents. The collected data were scored, tabulated and analyzed making use of descriptive statistics in Percentage, Frequency, Mean score and Standard Deviation. Moreover t-test used, data analyzed through Statistical Package for Social Sciences (SPSS) Version 22.

5.2 FINDINGS

2. 75.2% teachers (combined agreed and strongly agreed) were found in favour of the statement that the opportunity of Asynchronous on line discussion/classes with students is effective in promoting concept of learning.
3. 74% teachers (agreed and strongly agreed) were found in favour of statement to learn much from Synchronous videoconferencing class as I would have learned from a traditional class.
4. 74.2% students were found in favour of Synchronous in Live discussion, Video conferencing.
5. 75% students were in favour to have an opportunity of Asynchronous online discussion as this mode of communication plays an important role.
6. I found Asynchronous mode of communication better and effective.

5.3 Teacher Questionnaire

1. According to table 4.1.4 presents that 28% teachers were strongly agree, 36% teachers were agree, 23% teachers were neutral, 11% teachers were disagree and 3% teachers were strongly disagree with the statement I have the opportunity of asynchronous online discussion with students.
2. According to table 4.1.5 presents that 13% teachers were strongly agree, 50% teachers were agree, 18% teachers were neutral, 18% teachers were disagree and 5% teachers were strongly disagree with the statement that Asynchronous approach provides a chance to think twice in responding the questions.
3. According to table 4.1.6 presents that 13% teachers were strongly agree, 50% teachers were agree, 18% teachers were neutral, 18% teachers were disagree and 8% teachers were strongly disagree with the statement that Asynchronous communication approach is effective in promoting concept learning of students.
4. According to table 4.1.7 presents that 24% teachers were strongly agree, 28% teachers were agree, 12% teachers were neutral, 12% teachers were disagree and 25% teachers were strongly disagree with the statement that I experience nominal communication problems while asynchronous delivery of courses with students.
5. According to table 4.1.8 presents that 16% teachers were strongly agree, 39% teachers were agree, 21% teachers were neutral, 17% teachers were disagree and 8% teachers were strongly disagree with the statement that Asynchronous delivery of courses is effective for student learning.

6. According to table 4.1.9 presents that 39% teachers\ were strongly agree, 37% teachers were agree, 8% teachers were neutral, 00.0% teachers were disagree and 17% teachers were strongly disagree with the statement that I rate the overall asynchronous delivery of courses during my education as effective.
7. According to table 4.1.10 presents that 30% teachers were strongly agree, 41% teachers were agree, 17% teachers were neutral, 4% teachers were disagree and 8% teachers were strongly disagree with the statement that I prefer to take asynchronous online classes to traditional classes.
8. According to table 4.1.11 presents that 38% teachers\ were strongly agree, 28% teachers were agree, 13% teachers were neutral, 21% teachers of the were disagree and 00.0% teachers were strongly disagree with the statement that Asynchronous course delivery meets my expectations.
9. According to table 4.1.12 presents that 17% teachers were strongly agree, 54% teachers were agree, 11% teachers were neutral, 14% teachers were disagree and 4% teachers were strongly disagree with the statement that Students in asynchronous online classrooms feel comfortable participating in course discussions with other students.
10. According to table 4.1.13 presents that 19% teachers were strongly agree, 34% teachers were agree, 22% teachers were neutral, 17% teachers were disagree and 8% teachers were strongly disagree with the statement that I am able to communicate with other students during the discussion activities.
11. According to table 4.1.14 presents that 13% teachers were strongly agree, 40% teachers were agree, 26% teachers were neutral, 00.0% teachers were disagree and 21% teachers were strongly disagree with the statement that I am able to share learning experiences with other students during the discussion activities.

12. According to table 4.1.15 presents that 21% teachers were strongly agree, 49% teachers were agree, 13% were neutral, 8% teachers were disagree and 21% teachers were strongly disagree with the statement that Asynchronous contact with fellow students helps me get more out of the discussion activities.
13. According to table 4.1.16 presents that 19% teachers were strongly agree, 46% teachers were agree, 12% teachers were neutral, 17% teachers were disagree and 7% teachers were strongly disagree with the statement that the discussion activities enable me to collaborate with other students.
14. According to table 4.1.17 presents that 31% teachers were strongly agree, 38% teachers were agree, 22% teachers were neutral, 5% teachers were disagree and 5% teachers were strongly disagree with the statement that I am able to interact with the instructor through the discussion activities.
15. According to table 4.1.18 presents that 5% teachers were strongly agree, 45% teachers were agree, 34% teachers were neutral, 9% teachers were disagree and 7% teachers were strongly disagree with the statement that the instructors use effective teaching methods for asynchronous course delivery.
16. According to table 4.1.19 presents that 34% teachers were strongly agree, 34% teachers were agree, 7% of the teachers were neutral, 17% teachers were disagree and 8% teachers were strongly disagree with the statement that Asynchronous delivery should have wider use in higher education programs.
17. According to table 4.1.20 presents that 42% teachers were strongly agree, 29% teachers were agree, 12% teachers were neutral, 8% teachers were disagree and 8% teachers were strongly disagree with the statement that Asynchronous methods facilitate effective learning of the material.

18. According to table 4.1.21 presents that 35% teachers were strongly agree, 25% teachers were agree, 12% of the teachers were neutral, 21% teachers were disagree and 7% teachers were strongly disagree with the statement that I prefer the flexibility of taking an asynchronous course to a traditional in-house course.
19. According to table 4.1.22 presents that 30% teachers were strongly agree, 34% teachers were agree, 19% teachers were neutral, 13% teachers were disagree and 4% teachers were strongly disagree with the statement that I appreciate having the time to think about my responses to questions through asynchronous discussions.
20. According to table 4.1.23 presents that 38% teachers were strongly agree, 34% teachers were agree, 12% teachers were neutral, 12% teachers were disagree and 5% teachers were strongly disagree with the statement that I believe that taking courses in an asynchronous online classroom has helped me in my educational pursuits.
21. According to table 4.1.24 presents that 25% teachers\ were strongly agree, 33% teachers were agree, 17% teachers were neutral, 17% teachers were disagree and 8% teachers were strongly disagree with the statement that Synchronous approach significant in receiving immediate response of students.
22. According to table 4.1.25 presents that 13% teachers\ were strongly agree, 46% teachers were agree, 12% teachers were neutral, 13% teachers were disagree and 17% teachers were strongly disagree with the statement that Synchronous delivery of courses is effective for student learning.

23. According to table 4.1.26 presents that 51% teachers were strongly agree, 23% teachers were agree, 8% of the teachers were neutral, 9% teachers were disagree and 8% teachers were strongly disagree with the statement that I experience minimal communication problems with students related to the synchronous delivery of courses.
24. According to table 4.1.27 21% teachers\ were strongly agree, 43% teachers were agree, 21% teachers were neutral, 7% teachers were disagree and 7% teachers were strongly disagree with the statement that I learn as much from this synchronous videoconferencing class as I would have learned from a traditional lecture class.
25. According to table 4.1.28 17% teachers\ were strongly agree, 25% teachers were agree, 29% of the teachers were neutral, 21% teachers were disagree and 7% teachers were strongly disagree with the statement that Synchronous delivery of courses is as effective as taking courses in the traditional classroom.
26. According to table 4.1.29 32% teachers\ were strongly agree, 28% teachers were agree, 00.0% teachers were neutral, 27% teachers were disagree and 13% teachers were strongly disagree with the statement that Synchronous delivery of courses is effective in preparing me as a graduate student.
27. According to table 4.1.30 presents that 17% teachers\ were strongly agree, 38% teachers were agree, 20% teachers were neutral, 16% teachers were disagree and 9% teachers were strongly disagree with the statement that I rate the overall synchronous delivery of courses during my education as effective.
28. According to table 4.1.31 presents that 34% teachers\ were strongly agree, 20% teachers were agree, 21% teachers were neutral, 13% teachers were

disagree and 12% teachers were strongly disagree with the statement that I prefer to take synchronous videoconferencing classes to traditional classes.

29. According to table 4.1.32 presents that 33% teachers\ were strongly agree, 34% teachers were agree, 17% of the teachers were neutral, 12% teachers were disagree and 3% teachers were strongly disagree with the statement that Synchronous course delivery meets my expectations.
30. According to table 4.1.33 38% teachers were strongly agree, 33% teachers were agree, 16% teachers were neutral, 14% teachers were disagree and 00.0% teachers were strongly disagree with the statement that Live contact with fellow students helps me get more out of the discussion activities.
31. According to table 4.1.34 29% teachers were strongly agree, 31% teachers were agree, 26% teachers were neutral, 00.0% teachers were disagree and 14% teachers were strongly disagree with the statement that I am able to interact with the instructor during the discussion activities.
32. According to table 4.1.35 presents that 16% teachers were strongly agree, 38% teachers were agree, 20% of the teachers were neutral, 17% teachers were disagree and 10% teachers were strongly disagree with the statement that The Instructors Use Effective Teaching Methods For Synchronous Course Delivery.
33. According to table 4.1.36 16% teachers were strongly agree, 38% teachers were agree, 20% teachers were neutral, 17% teachers were disagree and 10% teachers were strongly disagree with the statement that Technical problems with the distance delivery system seldom interfere with my learning.
34. According to table 4.1.37 18% teachers\ were strongly agree, 37% teachers were agree, 21% were neutral, 8% teachers were disagree and 16% teachers

were strongly disagree with the statement that Synchronous delivery should have wider use in higher education programs.

35. According to table 4.1.38 presents that 35% teachers\ were strongly agree, 35% teachers were agree, 14% teachers were neutral, 17% teachers were disagree and 00.0% teachers were strongly disagree with the statement that Synchronous methods facilitate effective learning of the material.
36. According to table 4.1.39 35% teachers were strongly agree, 21% teachers were agree, 19% teachers were neutral, 13% teachers were disagree and 12% teachers were strongly disagree with the statement that I Prefer The Flexibility Of Taking A Synchronous Course To A Traditional In-House Course.
37. According to table that 21% teachers\ were strongly agree, 53% teachers were agree, 8% teachers were neutral, 5% teachers were disagree and 13% teachers were strongly disagree with the statement that I appreciate the live discussions that take place in the synchronous videoconferencing classroom.
38. According to table 4.1.41 47% teachers were strongly agree, 17% teachers were agree, 21% teachers were neutral, 7% teachers were disagree and 8% teachers were strongly disagree with the statement that I believe that taking courses through the live synchronous videoconferencing modality has helped me in my educational pursuits.
39. According to table 4.2.1 37% students were strongly agree, 39% students were agree, 16% students were neutral, 5% students were disagree and 3% students were strongly disagree with the statement that I have the opportunity of asynchronous online discussion with students.
40. According to table 4.2.2 22% students were strongly agree, 48% students were agree, 19% students were neutral, 2% students were disagree and 9% students

were strongly disagree with the statement that Asynchronous approach provides a chance to think twice in responding the questions.

41. According to table 4.2.3 36% students were strongly agree, 37% students were agree, 14% students were neutral, 10% students were disagree and 3% students were strongly disagree with the statement that Asynchronous communication approach is effective in promoting concept learning of students.
42. According to table 4.2.4 26% students were strongly agree, 40% students were agree, 13% students were neutral, 16% students were disagree and 5% students were strongly disagree with the statement that I experience nominal communication problems while asynchronous delivery of courses with students.
43. According to table 4.2.5 40% students were strongly agree, 35% students were agree, 7% students were neutral, 10% students were disagree and 8% students were strongly disagree with the statement that Asynchronous delivery of courses is effective for student learning.
44. According to table 4.2.6 51% students were strongly agree, 24% students were agree, 15% students were neutral, 4% students were disagree and 7% students were strongly disagree with the statement that I rate the overall asynchronous delivery of courses during my education as effective.
45. According to table 4.2.7 32% students were strongly agree, 35% students were agree, 18% students were neutral, 10% students were disagree and 5% students were strongly disagree with the statement that I prefer to take asynchronous online classes to traditional classes.

46. According to table 4.2.8 42% students were strongly agree, 30% students were agree, 13% students were neutral, 10% students were disagree and 5% students were strongly disagree with the statement that Asynchronous course delivery meets my expectations.

47. According to table 4.2.9 32% students were strongly agree, 41% students were agree, 17% students were neutral, 6% students were disagree and 5% students were strongly disagree with the statement that Students in asynchronous online classrooms feel comfortable participating in course discussions with other students.

48. According to table 4.2.10 46% students were strongly agree, 29% students were agree, 9% students were neutral, 7% students were disagree and 9% students were strongly disagree with the statement that I am able to communicate with other students during the discussion activities.

49. According to table 4.2.11 39% students were strongly agree, 36% students were agree, 17% students were neutral, 3.6% students were disagree and 5% students were strongly disagree with the statement that I am able to share learning experiences with other students during the discussion activities.

50. According to table 4.2.12 39% students were strongly agree, 33% students were agree, 14% students were neutral, 8% students were disagree and 6% students were strongly disagree with the statement that Asynchronous contact with fellow students helps me get more out of the discussion activities.

51. According to table 4.2.13 34% students were strongly agree, 33% students were agree, 18% students were neutral, 5% students were disagree and 10% students were strongly disagree with the statement that the discussion activities enable me to collaborate with other students.

52. According to table 4.2.14 42% students were strongly agree, 25% students were agree, 21% students were neutral, 9% students were disagree and 4% students were strongly disagree with the statement that I am able to interact with the instructor through the discussion activities.
53. According to table 4.2.15 35% students were strongly agree, 32% students were agree, 19% students were neutral, 11% students were disagree and 2% students were strongly disagree with the statement that the instructors use effective teaching methods for asynchronous course delivery.
54. According to table 4.2.16 44% students were strongly agree, 23% students were agree, 14% students were neutral, 12% students were disagree and 8% students were strongly disagree with the statement that Asynchronous delivery should have wider use in higher education programs.
55. According to table 4.2.17 44% students were strongly agree, 30% students were agree, 12% students were neutral, 7% students were disagree and 7% students were strongly disagree with the statement that Asynchronous methods facilitate effective learning of the material.
56. According to table 4.2.18 23% students were strongly agree, 40% students were agree, 26% students were neutral, 6% students were disagree and 4% students were strongly disagree with the statement that I prefer the flexibility of taking an asynchronous course to a traditional in-house course.
57. According to table 4.2.19 39% students were strongly agree, 26% students were agree, 19% students were neutral, 2% students were disagree and 18% students were strongly disagree with the statement that I appreciate having the time to think about my responses to questions through asynchronous discussions.

58. According to table 4.2.20 45% students were strongly agree, 27% students were agree, 15% students were neutral, 7% students were disagree and 7% students were strongly disagree with the statement that I believe that taking courses in an asynchronous online classroom has helped me in my educational pursuits.
59. According to table 4.2.21 34% students were strongly agree, 32% students were agree, 19% students were neutral, 8% students were disagree and 7% students were strongly disagree with the statement that Synchronous approach significant in receiving immediate response of students.
60. According to table 4.2.22 31% students were strongly agree, 36% students were agree, 17% students were neutral, 5% students were disagree and 12% students were strongly disagree with the statement that Synchronous delivery of courses is effective for student learning.
61. According to table 4.2.23 50% students were strongly agree, 30% students were agree, 12% students were neutral, 00.0% students were disagree and 9% students were strongly disagree with the statement that I experience minimal communication problems with students related to the synchronous delivery of courses.
62. According to table 4.2.24 29% students were strongly agree, 40% students were agree, 16% students were neutral, 6% students were disagree and 9% students were strongly disagree with the statement that I learn as much from this synchronous videoconferencing class as I would have learned from a traditional lecture class.
63. According to table 4.2.25 29% students were strongly agree, 38% students were agree, 17% students were neutral, 10% students were disagree and 6%

students were strongly disagree with the statement that Synchronous delivery of courses is as effective as taking courses in the traditional classroom.

64. According to table 4.2.26 34% students were strongly agree, 36% students were agree, 17% students were neutral, 7% students were disagree and 7% students were strongly disagree with the statement that Synchronous delivery of courses is effective in preparing me as a graduate student.
65. According to table 4.2.27 34% students were strongly agree, 32% students were agree, 19% students were neutral, 6% students were disagree and 9% students were strongly disagree with the statement that I rate the overall synchronous delivery of courses during my education as effective.
66. According to table 4.2.28 32% students were strongly agree, 33% students were agree, 17% students were neutral, 16% students were disagree and 3% students were strongly disagree with the statement that I prefer to take synchronous videoconferencing classes to traditional classes.
67. According to table 4.2.29 31% students were strongly agree, 35% students were agree, 16% students were neutral, 8% students were disagree and 10% students were strongly disagree with the statement that Synchronous course delivery meets my expectations.
68. According to table 4.2.30 40% students were strongly agree, 31% students were agree, 19% students were neutral, 5% students were disagree and 5% students were strongly disagree with the statement that Live contact with fellow students helps me get more out of the discussion activities.
69. According to table 4.2.31 26% students were strongly agree, 40% students were agree, 13% students were neutral, 16% students were disagree and 5%

students were strongly disagree with the statement that I am able to interact with the instructor during the discussion activities.

70. According to table 4.2.32 31% students were strongly agree, 34% students were agree, 19% students were neutral, 9% students were disagree and 7% students were strongly disagree with the statement that the instructors use effective teaching methods for synchronous course delivery.
71. According to table 4.2.33 29% students were strongly agree, 32% students were agree, 25% students were neutral, 10% students were disagree and 4% students were strongly disagree with the statement that Technical problems with the distance delivery system seldom interfere with my learning.
72. According to table 4.2.34 26% students were strongly agree, 40% students were agree, 13% students were neutral, 16% students were disagree and 5% students were strongly disagree with the statement that Synchronous delivery should have wider use in higher education programs.
73. According to table 4.2.35 29% students were strongly agree, 37% students were agree, 23% students were neutral, 5% students were disagree and 7% students were strongly disagree with the statement that Synchronous methods facilitate effective learning of the material.
74. According to table 4.2.36 33% students were strongly agree, 31% students were agree, 22% students were neutral, 7% students were disagree and 8% students were strongly disagree with the statement that I prefer the flexibility of taking a synchronous course to a traditional in-house course.
75. According to table 4.2.37 35% students were strongly agree, 36% students were agree, 14% students were neutral, 7% students were disagree and 8%

students were strongly disagree with the statement that I appreciate the live discussions that take place in the synchronous videoconferencing classroom.

76. According to table 4.2.37 40% students were strongly agree, 30% students were agree, 20% students were neutral, 4% students were disagree and 7% students were strongly disagree with the statement that I believe that taking courses through the live synchronous videoconferencing modality has helped me in my educational pursuits.

5.4 DISCUSSION

The main purpose of the study was to investigate Effectiveness of Synchronous and Asynchronous Approaches in Teaching Learning Process at University level. The study found out that the asynchronous instructional approach was more effective than the synchronous instruction in enhancing the students' cognitive achievements and interest. The study also found out that there was a significant difference in terms of the performance of students taught with the synchronous instruction when compared with those taught with an asynchronous instruction. The finding that asynchronous instruction is more effective that the synchronous instruction might not be unconnected with the fact that the asynchronous instruction is a student-centered teaching method that uses e-learning resources to facilitate information sharing outside the constraints of time and place among a network of people. This assertion is in line with the view of, that one of the major elements of the asynchronous instruction is that teaching and learning process can take place at different times and at different places, thus it allows students to schedule their learning activity at their own time, place and pace.However, the use of the asynchronous platform was found to be more effective in stimulating the interest of students according to the findings of the research conducted by (Aggarwal, 2016) as

well as (Cheung, 2006). According to these authors, the use of the asynchronous platform is capable of making the class intrinsically interesting and enjoyable, because the platform provides the students' with the opportunity to interact and review the lectures by going online to watch the video over and over again. A possible explanation for the effectiveness of the asynchronous instructional approach over the synchronous approach in terms of stimulating the students interest is the fact that they (the students) are at liberty to save and download the lecture materials to watch and review the content at their own convenience either online with internet availability or offline (that is, from the downloaded version without connectivity to the net). Thus, according to (Wells, 2008), the use of an asynchronous instructional platform such as the use of YouTube can serve as a motivational and stimulating tool for students, because they can use it as a medium of studying outside the classroom.Although synchronous e-learning is increasingly becoming popular all over the world due to better speed of the Internet and technological advancements (Chen, Ko, Kinshuk& Lin, 2005), the observation of the participation of the students shows them to be more active in asynchronous mode, whereas their opinion is more in favor of the ideal blend of the two modes of instruction. As per data analytics, most of the students actively participate in submitting assignments, although the weightage of assignment marks is not much in the overall result. The assignments help them improve their written constructions of English more than any other Relativity. This is because they get ample time to read, reread, and practice for finally composing their answers. Assignments questions are carefully devised to facilitate task-based language learning. Assignment writing polishes reading and writing skills of students whereas synchronous sessions can improve their listening and speaking (Wang & Chen, 2009). Students' opinions clearly reflect their awareness about the possible improvement of

speaking skill via synchronous session and a desperate desire for that as well. The responses to the two questions have a discrepancy and as per the data analytics of synchronous sessions, students either could not participate in synchronous sessions because of job commitments or the technological problems became a barrier. Students' demographical details as well as their opinions clearly manifest that majority is that of working professionals and they may prefer synchronous sessions after 5 pm i.e., after office timings. Due to this aspect, participation in asynchronous Relativities remains far more overwhelming than synchronous Relativities as many students get enrolled in online programs because of their asynchronous i.e., not time bound nature (Hrastinski, 2008). The issues discussed above can be further elaborated by the participants' response to the strongest and weakest points of asynchronous modes of language learning. Whereas 34% felt the deficiency of face-to-face communication as it can increase their motivation (Lynch, 2014), 15% complained about non-simultaneity of answers/communication. However, they were happy with the fact that asynchronous mode was not time and place bound and gave time for reflection to construct responses. Therefore, asynchronous mode is more suitable for them. This is also confirmed by their response to the greatest weakness of synchronous mode where instead of choosing 'all of the above' option, 37% participants chose 'time bound' option. These results show that in a virtual system students are mostly not available for time bound synchronous because most of them are on job (McLoughlin& Lee, 2010).

5.5 CONCLUSIONS

In the light of Findings, it has been concluded that most of the respondents agreed as per following details:

1. It is concluded that most of the teachers agreed that they have used asynchronous approach in online discussion, answer question session, to develop the communication in teaching learning process, as well as they have faced some minor problems through this approach when they delivered courses to learners.
2. It is concluded that asynchronous approach is very effective approach in teaching learning process and most of the teachers found that those courses which were taught through asynchronous mode are very effective. In asynchronous mode online classes are better than traditional classes and most of the respondents agreed that such approach meets their expectations in teaching learning process.
3. Most of the respondents found that in online discussion classroom teachers and learners both feel comfortable.During this approach teachers have better discussion as compared to other mode of delivery.In such classes teachers share their experiences with their students in better way and give more time to share learning experiences with students.It develops collaboration among teachers and students, and in this mode of delivery the teaching method of teacher is good as compared to other mode of teaching.
4. It is concluded that most of the respondents agreed that asynchronous approach is widely used in higher education, get better learning materials, most of the respondents had positive responses that they favour the elasticity of taking an asynchronous course to an old-style course, question answer

discussion about topics, and this approach facilitated me in my educational pursuits.

5. It is concluded that most of the respondents agreed that Synchronous approach is important in getting instant replay of learners, operative for learner learning, minimal communication problems with learners associated to the synchronous, videoconferencing classes is better than traditional class, Synchronous delivery of courses is as effective as taking courses in the traditional classroom.Synchronous delivery of courses is effective in preparing me as a graduate student. Asynchronous delivery of courses during my education is as effective.
6. It is concluded that most of the teachers had positive response about the statement that synchronous course delivery meets my expectations, live contact with fellow students helps me get more out of the discussion activities, interaction with teachers during discussion session, use of effective teaching techniques for synchronous course delivery and technical problems with the distance delivery system seldom interfere with my learning.
7. So it is concluded that majority of the teachers had positive response about the statements that synchronous delivery should have wider use in higher education, this method facilitate effective learning of the material and choose the elasticity of taking a synchronous course to an out-dated course, appreciate the live discussions that take place in the synchronous videoconferencing classroom and live synchronous videoconferencing modality has helped me in my educational pursuits.

5.6 RECOMMENDATIONS

On the basis of the findings and conclusions following recommendations were drawn:

1. Higher Education Commission, Islamabadmay develop the appropriate frameworks necessary for encouraging the adoption of innovative e-learning platforms such as that of the synchronous and the asynchronous instruction.
2. The management of the universities under study may mount a capacity-building program for training and re-training of lecturers on the use of innovative e-learning teaching methods such as the asynchronous instructional approach.
3. Lecturers may adopt the asynchronous as well as synchronous instructional approaches in teaching and learning of education departments under study.
4. The students of Education Departments may be given adequate orientation on the importance and the use of e-learning in the university system.

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APPENDIX-A

QUESTIONNAIRE FOR TEACHERS

Respected Teacher

I am student of MS education at International Islamic University, Islamabad, presently, working on data collection for the completion of my dissertation. Title of my study is "Comparative Study of Synchronous and Asynchronous Communications Approaches in Teaching and Learning Process at University Level". For the completion of this study, I request for your academic support in filling this questionnaire. I shall be thankful for your cooperation.

Thanks.

(Muhammad Sadiq)

MS (Education)

Department of Education, IIU, Islamabad

Name (Optional) _____ University Name:

_____

Demographic Data:

Please readout the given option and tick (√) your relevant column.

Gander	Male	Female
Academic Qualification	BA/BSc BS MA/M.SC M.Phil. Ph.D. Others	
Professional Qualification	B.Ed. M.Ed. MA Education Others	
Teaching Experience (in years)	Less than 5 5-10 10-15 16 to onward	

Please read out the statements carefully and tick the most appropriate option/answer.

Strongly Agree = SA, Agree = A, Undecided = UN, Disagree = D, Strongly Disagree = SDA

S. No	Statements	SA	A	UN	DA	SDA
Asynchronous Communication Approaches in Teaching and Learning Process						
1	I have the opportunity of asynchronous online discussion with students.					
2	Asynchronous approach provides a chance to think twice in responding the questions.					
3	Asynchronous communication approach is effective in promoting concept of teaching tostudents.					
4	I experience nominal communication problems while asynchronous delivery of courses with my students.					
5	Asynchronous delivery of courses is effective for student learning.					
6	I prefer to take asynchronous online classes to traditional classes.					
7	Asynchronous course of delivery meets my expectations.					
8	Students in asynchronous online classrooms feel comfortable participating in course discussions with other students.					
9	I am able to communicate with other students during the discussion activities.					
10	I am able to share learning experiences with other students during the discussion activities.					

11	Asynchronous contact helps my students toget more out of the discussion activities.					
12	The discussion activities enable me to collaborate with other students.					
13	I am able to interact with the instructor through the discussion activities.					
14	The instructors use effective teaching methods for asynchronous course delivery.					
15	Asynchronous delivery should have wider use in higher education programs.					
16	Asynchronous methods facilitate effective learning of the material.					
17	I prefer the flexibility of taking an asynchronous course to a traditional in-house course.					
18	I appreciate having the time to think about my responses to questions through asynchronous discussions.					
19	I believe that taking courses in an asynchronous online classroom has helped me in my educational pursuits.					
Synchronous Communication Approaches in Teaching and Learning Process						
20	Synchronous approach significant in receiving immediate response of students.					
21	Synchronous delivery of courses is effective for student learning					

22	I experience minimal communication problems with students related to the synchronous delivery of courses.					
23	I teach as much from this synchronous videoconferencing class as I would have taught from a traditional lecture class.					
24	Synchronous delivery of courses is as effective as taking courses in the traditional classroom.					
25	Synchronous delivery of courses is effective in preparing a graduate student.					
26	I rate the overall synchronous delivery of courses during my teaching as effective.					
27	I prefer to take synchronous videoconferencing classes to traditional classes.					
28	Synchronous course delivery meets my expectations.					
29	Synchronous delivery should have wider use in higher education programs.					
30	Synchronous methods facilitate me to provide effective materialto students.					
31	I prefer the flexibility of taking a synchronous course to a traditional in-house course.					
32	I appreciate the live discussions that take place in the synchronous videoconferencing classroom.					

33	I believe that teaching courses through the live synchronous videoconferencing modality has helped me in educational pursuits.					

APPENDIX-B

QUESTIONNAIRE FOR STUDENTS

Dear Student,

I am student of MS education at International Islamic University Islamabad. Presently, I am working on data collection for the completion of my dissertation. Title of my study is "Comparative Study of Synchronous and Asynchronous Communications Approaches in Teaching and Learning Process at University Level". For the completion of this study, I request for your academic support in filling this questionnaire. I shall be thankful for your cooperation.

Thanks.

(Muhammad Sadiq)

MS (Education)

Department of Education, IIU, Islamabad

Name (Optional) _____University Name:_____

Demographic Data:

Please readout the given option and tick (√) your relevant column.

Gander	Male	Female
Level of Qualification	BS Education BS (Hons) MA Education	

Please read out the statements carefully and tick the most appropriate option/answer.

Strongly Agree = SA, Agree = A, Undecided = UN, Disagree = D, Strongly Disagree = SDA

S. No	Statements	SA	A	UN	DA	SDA
Asynchronous Communication Approaches in Teaching and Learning Process						
1	I have the opportunity of asynchronous online discussion with the teachers.					
2	Asynchronous approach provides a chance to think twice in responding the questions raised by my teacers.					
3	Asynchronous communication approach is effective in promoting concept learning of students.					
4	I experience nominal communication problems in learning courses in asynchronous mode.					
5	Asynchronous delivery of courses is effective for student learning.					
6	I rate the overall asynchronous delivery of courses during my education as effective.					
7	I prefer to take asynchronous online classes to traditional classes.					
8	Asynchronous course delivery meets my expectations.					
9	Students in asynchronous online classrooms feel comfortable participating in course discussions with other students.					

10	I am able to communicate with other students during the discussion activities.					
11	I am able to share learning experiences with other students during the discussion activities.					
12	Asynchronous contact with fellow students helps me get more out of the discussion activities.					
13	The discussion activities enable me to collaborate with other students.					
14	I am able to interact with the instructor through the discussion activities.					
15	The instructors use effective teaching methods for asynchronous course delivery.					
16	Asynchronous delivery should have wider use in higher education programs.					
17	Asynchronous methods facilitate effective learning of the material.					
18	I prefer the flexibility of taking an asynchronous course to a traditional in-house course.					
19	I appreciate having the time to think about my responses to questions through asynchronous discussions.					
20	I believe that taking courses in an asynchronous online classroom has helped me in my educational pursuits.					

Synchronous Communication Approaches in Teaching and Learning Process						
21	Synchronous approach significant in receiving immediate response of students.					
22	Synchronous delivery of courses is effective for student learning					
23	I experience minimal communication problems with students related to the synchronous delivery of courses.					
24	I learn as much from this synchronous videoconferencing class as I would have learned from a traditional lecture class.					
25	Synchronous delivery of courses is as effective as taking courses in the traditional classroom.					
26	Synchronous delivery of courses is effective in preparing me as a graduate student.					
27	I rate the overall synchronous delivery of courses during my education as effective.					
28	I prefer to take synchronous videoconferencing classes to traditional classes.					
29	Synchronous course delivery meets my expectations.					
30	Live contact with fellow students helps me get more out of the discussion activities.					

31	I am able to interact with the instructor during the discussion activities.					
32	The instructors use effective teaching methods for synchronous course delivery.					
33	Technical problems with the distance delivery system seldom interfere with my learning.					
34	Synchronous delivery should have wider use in higher education programs.					
35	Synchronous methods facilitate effective learning of the material.					
36	I prefer the flexibility of taking a synchronous course to a traditional in-house course.					
37	I appreciate the live discussions that take place in the synchronous videoconferencing classroom.					
38	I believe that taking courses through the live synchronous videoconferencing modality has helped me in my educational pursuits.					

APPENDIX-C

List of experts who have validated the Questionnaires

1. Dr.Azhar Mahmood,, Associate Professor, Professor, Department of Education, International Islamic University, Islamabad.

2. Dr. Sheikh Tariq Mehmood, Assistant Professor, Department of Education, International Islamic University, Islamabad.

3. Dr.Fouzia Ajmal, Assistant Professor, Department of Education, International Islamic University, Islamabad.

4. Dr. Hafiz Abid Masood, Head of the Department, Department of English, International Islamic University, Islamabad.

5. Dr. Nasir Khan, Lecturer, Department of Education, International Islamic University, Islamabad.