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Effectiveness of the Use of the Internet as Supplementary Tool for Academic Learning: A Case Study of University Students

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Abstract
Internet use has grown commonplace in traditional schooling settings, having an impact on our society's social and cultural fabric. The use of the internet has become tremendously prevalent around the world. The goal of this research study is to use the internet to look into students' academic progress. Universities have long experimented with different learning environments to meet the needs of their academics and students. The way we communicate, connect, and socialize has changed because of the use of the internet. This study carefully examines the effects of the use of the Internet in comparison to traditional learning methods. This study also examines the realities of online education. The information was empirically gathered for the reason of utilizing a survey containing a close-ended questionnaire. Three hundred and eighty-four male and female students from the University of Sargodha made up the study's sample size. The findings of this study's research imply that university students are quite familiar with the Internet. The perspective of internet use in instructional studies is aided by research findings. The results emphasize the value of online networking in higher education. In addition, it is proposed that online learning will help students' CGPA. Therefore, the majority of students believe that the Internet may significantly boost academic accomplishment among university students as well as academic learning.

Keywords: Education, University students, Supplementary, Online Learning, Academic Learning, Internet, Traditional learning,

Introduction

Online learning may lead to isolation issues in students' educational circumstances. In most cases, contribute simply to actual student learning outcomes. Parents' and teachers' observation tends towards the use of the Internet as necessary for better learning outcomes. Research studies have proved that the majority of students spend time building mutual relations using the Internet (Laurillard, 1992). Research study empirical results revealed that the majority of students establish a good and better attitude towards the internet. Some students use the internet for entertainment, research, and making their class coursework. The Internet is one of the most progressive technologies in the world. Although the internet provided access, proved as useful tools for the community and made as a global village (Priyanka et al., 2013). In many ways, it is challenging to talk about any aspect of modern culture without considering the internet. Because digital technology has permeated so many people's lives, the boundary between being online and offline is evident, and no longer accurately describes the scenario where the internet is implicitly always on. It is frequently noted that younger generations find it difficult to discuss the internet as a separate entity. Instead, online behaviors have been a part of young people's lives since before they could even breathe much like electricity, water, and other necessities. Information Technology (IT) is like the oxygen to them, according to (Tapscott & Williams, 2010).

Internet in Educational Environments

Universities across the world are using Communication and Information Technologies (C & IT) to give education new opportunities to improve the standard of instruction (Asdaque et al., 2010). The internet appears to be a medium for promoting teaching efficiency and for reaching bigger audiences in the "global knowledge-based educational economy" (Warren, et al. 1998). Around the world, there are many courses, degree programs, and certificates available online. A new virtual education industry is now fiercely competing with traditional universities and traditional methods of teaching (Aziz et al., 2024). In these technologically advanced environments, a variety of commercial and non-commercial companies have developed virtual education environments (Lubans, 1998). From 1985 to 1987, researchers modified a proto-typical virtual classroom (Comunale et al., 2002). This virtual classroom offered many courses, which include fully or partially online. The big breakthrough for online Internet learning came with the development of the World Wide Web (WWW) and the consequent rapid spread of the Internet into many homes, offices, and most universities in more economically advanced countries (Frankola, 2001). The hybrid classrooms incorporate characteristics and a combination of both settings. Learning occurs in both modes either it is synchronous or asynchronous modes. In hybrid courses, the teacher is fully authorized to decide about what aspects of the course are best suited to presentation. The various delivery modes are also defined and chosen by the teacher. In the ideal hybrid courses offer educators the best of both worlds (Redding & Rotzien, 2001).

Advantage possibly derives from the use of the internet by students and teachers. The broader use of the Internet for teaching and learning purposes has received growing consideration around the world (Revans, 1971). The potential deliverance of education is visualized through E-learning technology providing lecturers with superior teaching tools. Online methods of learning facilitate education, which is more effective and offers significant advantages over traditional teaching methods. University teaching faculty are embracing the internet for effective discussions and dealing with their students (Ramsden, & Entwistle, 1981).

Research Questions

- What are the effects of the internet as a supplementary tool of academic learning on the students of the University of Sargodha?
- What extent do students of the University of Sargodha use internet facilities for academic purposes?

Significance of the Study

Our culture has been influenced by the internet in practically every aspect of human endeavor. Another benefit of the internet is that most publishing and research firms post their work online. Online students throughout their academic careers find research materials on the internet. The Internet is one of the best resources available today for finding various types of information (Toprakci, 2005). The majority of students have positive opinions about using the internet to gather information, learn new things, and do global research in academia. Students have free access to information and knowledge regarding higher education on the internet where they can find it quickly and easily (Asan & Koca, 2006). In this research study, the researcher touches on the different positive aspects of the use of the Internet on the academic learning of students of the University of Sargodha.

Objectives of the Study

- To explore the time consumption pattern of students of the University of Sargodha regarding using habit of the Internet for their academic learning.
- To determine the purposes of the use of the internet regarding their academic learning.

Statement of the Problem

The problem's statement is based on the results of earlier studies. Access to less conventional educational institutions is expanding and fixed locations are no longer barriers to higher education (Edmunds et al., 2010). With the introduction of online learning into higher education, the idea of lifelong learning has become a reality. Access to university courses is provided via this procedure. The education and academic rehabilitation of university students with impairments has been aided by internet-based learning techniques. The development of a transnational education network could pose serious issues for conventional universities and conventional study methods (Moore & Thompson, 1990).

Purpose of this Research Study

The main purpose of this study is to investigate the effects and attitudes of students of the University of Sargodha towards the use of the Internet for their academic learning and performance. Specifically, “how they access the internet”, “what they use the internet for”, “how frequently they use the internet”, “and what internet services they use most”, “how satisfied they are with the internet services provided by the university”, and “what problems they face during an internet search”.

Literature Review

The investigation of students' poor learning results was explored by previous research works (Elmahdi et al., 2018). This is because traditional learning dominates the learning process and renders learning ineffective. In this type of learning, the classroom setting is usually teacher-centered, which makes pupils passive. According to Boyadzhieva, (2016) in this case, children are not provided with learning strategies that enable them to understand how to learn from the teacher, think, and motivate themselves. Student learning outcomes were positively and significantly impacted by using the Internet as a learning resource (Haryana, 2021). Student learning outcomes are positively impacted by internet use (Galetić, 2021). This method of instruction is based on the advancement of Information Technology (IT) through the Internet, which has given rise to e-learning, also known as e-education or educational activities involving electronic media, mainly the Internet (Almajali et al., 2022). The quantity of feedback received during the learning process is what defines learning activities causing lowering the degree of student participation in educational activities (Omole et al., 2021). Over the past 16 years, there has been a notable increase in the number of students with personal computers and in their use of the internet and newer technologies, as reported by Lee et al. (2019). The best way to learn social behavior is when it is given in a meaningful and relevant context. Hoffman and Elmi (2020) conducted a review of the literature and discovered a relationship between technology integration attitudes and intents and a classroom teacher's self-efficacy in utilizing emergent technology in the learning process. Students are willing to sign up for more online courses in the program is influenced by their performance

in the course (Müller & Mildenberger, 2021). To study the impact of E-learning on academic performance, it will be better to be presented with a brief discussion of E-learning concept. Different terminologies are used to define E-learning. For instance, it has been defined by Kosassy et al. (2018) as a type or system of learning that utilizes electronic technologies to access educational curricula outside traditional classrooms. Sangra et al. (2012) defined E-learning as a method of teaching and learning that fully or partially signifies the educational model used, based on the use of electronic media and devices as tools for enhancing the availability of training, communication, and interaction that helps in accepting novel ways of comprehending and establishing learning.

Theoretical Background and Development of Hypotheses

The internet opens people's eyes to the size of the globe around them. Both college and university students utilize the Internet to obtain various kinds of academic data. The more people have access to the internet, the more they will utilize it. According to recent data, the internet enables people to access data sites like social networking sites, online sports, and cybersex. Because of the Internet's accessibility, the majority of students have access to it on their mobile devices (Anwar et al., 2024). This study planned to analyze the effectiveness of the use of the Internet as a supplementary tool for academic learning. This research work is a comparative study of male and female students of the University of Sargodha. The basic aim of this research study is to dig out the perception and effectiveness of the use of the Internet in the academic studies of students of the University of Sargodha. This research study is based on the Diffusion of Innovation Theory. This theory is discussed further down in the present study.

Diffusion of Innovation

Everett Rogers merged studies on the flow of information and human impact from anthropology, sociology, and rural agricultural extension work with the results of the information flow study in 1962. He came up with the diffusion theory. So even though it is regarded as a significant theory in the field of communication, Diffusion of Innovations has been recognized to have real-world applications in many other fields such as sociology, rural sociology, economics, and medical sociology. According to the Diffusion of Innovation hypothesis, innovations such as new ideas, methods, or technologies diffuse or spread throughout society predictably. A small percentage of people will adopt an innovation as soon as they learn about it, while others will wait longer and still others will take considerably longer. The design resembles an S-shaped curve. As far as this research is concerned, it aims to determine the effectiveness of internet use in academic studies by the University of Sargodha students as well as to elicit respondents' levels of satisfaction and perception. This study's major goal is to determine the causes of the internet's undeniable appeal and its instructional content. This process was undertaken by asking through a well-designed questionnaire containing 14 close-ended questions.

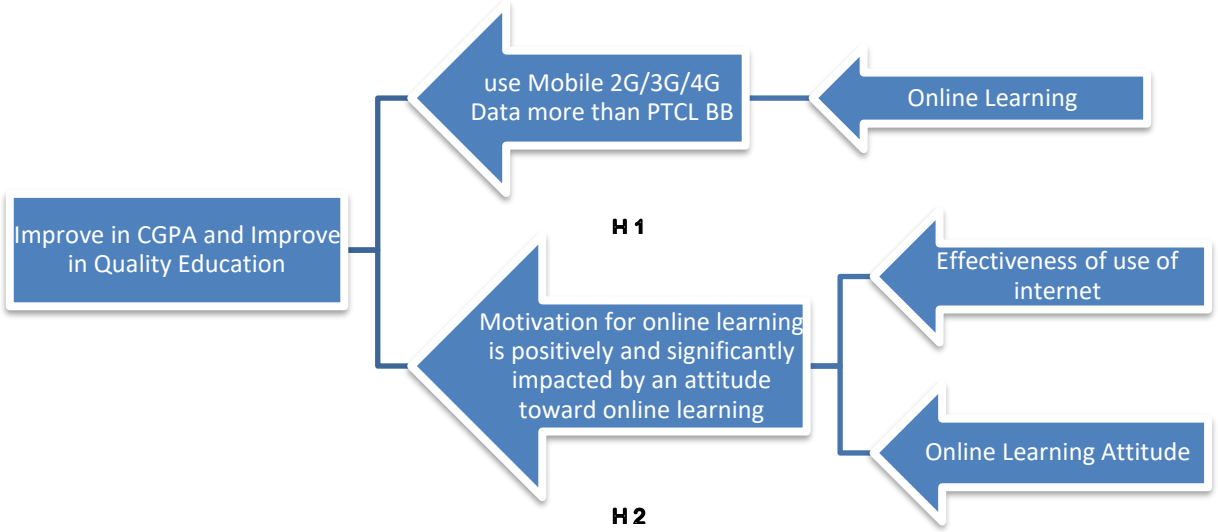
Study's Main Hypotheses

A hypothesis is a proposition that is narrated in testable form. A hypothesis can predict a particular relationship between two or more variables. These variables can be independent and dependent form of variables. In this research work, there are two hypotheses to be tested.

H1: It is more likely that students prefer to use Mobile 2G/3G/4G Data more than PTCL BB

H-2: Motivation for online learning is positively and significantly impacted by an attitude toward online learning.

Figure 1.
Conceptual Framework



One of the ICT applications that are used extensively worldwide is the Internet. The internet is such a vast and fascinating place. People search for or learn about information, listen to music use the internet, view movies, and stay in touch with friends. The Internet is a widely used program that offers inexpensive, unlimited access. Additionally, the internet is being employed as a platform for portals and websites that both lecturers and students can use to find information and make discoveries. Individuals of all ages frequently use the internet to find information. In a split second, they can obtain the information through the advancement of technologies. The aforementioned factors render the Internet a fascinating technological tool for both exploration and practical application. Online learning is a type of remote instruction that makes use of electronic instructional resources and digital devices (Hussain et al., 2020). Higher flexibility and availability were identified in online learning as compared to traditional classroom instruction. The epidemic has led to a proliferation of online learning, which is reported to have numerous notable qualities, including high learning satisfaction and a wealth of educational resources. However, issues with online learning persist, particularly regarding inadequate real-time feedback, reduced social engagement, and unpredictable circumstances. The pandemic has forced various configurations of learning and teaching processes to focus more on blended learning, remote learning, online learning, and smart learning (Anwar & Basit, 2023). As a result, e-learning has become an essential strategy for higher education institutions.

H1: *It is more likely that students prefer to use Mobile 2G/3G/4G Data more than PTCL BB*

There has been an epidemic increase in the use of information technology (IT) within the past 20 years. In the era of the global internet, mobile and wireless communication has emerged as the most popular and extensively utilized technological innovation. Even young children now own tablets and smartphones equipped with mobile broadband connectivity. In Pakistan, Pakistan Telecom Companies introduced a fast 3G/4G mobile network. The primary goal of introducing high-speed 3G/4G mobile broadband is to increase educational growth and increase services for the good of the public and society. University students due to the feasibility of the using internet prefer mobile 3G/4G internet connections as compared to PTCL BB Connection.

H-2: *Motivation for online learning is positively and significantly impacted by an attitude toward online learning.*

A crucial component of any educational process, particularly when it comes to e-learning, is motivation towards online learning. Motivation can be defined in a variety of ways. The fact that there are so many different conceptions illustrates how challenging it is to define motivation. Therefore, what encourages students to freely devote time to certain tasks might be characterized as motivation. Additionally, as well as how they feel and behave toward the work and how long they stay focused on it. According to Keller (2010), the complexity of motivation research stems from the abundance of motivating theories, concepts, and ideas developed to describe its various components and the interaction of environmental, cultural, and individual factors.

Main Concepts of This Study

Conceptualization is a careful, scientific, and systematic explanation of a construct, which is written to explain individual thinking. It is habitually linked to other concepts or theoretical declarations. Conceptualization is the process of defining and framing the problem on the researcher's side (Corbin et al., 2014). A *concept* is an abstract idea representing the fundamental

characteristics of what it represents. *Concepts* **a**rise as abstractions or generalizations from experience (Medin, 1989). The basic concept is "effectiveness of the use of the internet". In this research study main concepts, conceptualization and operationalization have been elaborated as under:

Education
Conceptually, it refers to facilitating the learning process or the gaining of information and knowledge, personal skills, values, beliefs, and habits towards the education of respondents like Graduate and undergraduate students of the University of Sargodha.

Internet
Conceptually it refers to means of linking a computer to any other computer across the world via digital devices like routers and servers. The Internet can receive and send all kinds of information such as text, graphics, voice, video, and Internet content like Google, Google Scholar, Search Engines, Blogs, Browsers, Wikis, E-Research sites, E-Journals, E-Books, Facebook, YouTube, and other sites of internet, which have broadly used by the male and female students of the University of Sargodha.

Frequency of Use of Internet
Conceptually it refers to the regularity of use of the internet by students of the University of Sargodha.

Access to Internet Sites
It is another aspect of the study's concept that refers to the student's access to internet sites like Google, wikis, etc. for academic studies.

Internet Service Providers (ISPs)
Conceptually, it refers to the connecting device directly *accessing* the *internet* through a modem. These devices can communicate with each other with an *Internet* Service Provider (ISP) or the modems. Through these connecting devices, internet links would be shared via a "Local Area Network (LAN)". This connection could provide *access* to a limited area such as a home, school, and computer laboratory. Internet is accessed through different ISPs like PTCL BB, ZONG, Jazz, Telenor, and Mobile 2G/3G/4G Networks.

Operationalization
Operationalization is a scientific and structured process of moving forward from the conceptual definition of a construct. The operationalization process is a set of different specific actions, which allows every researcher to scrutinize and work for it empirically.

Major Concepts and Operationalization

Age:	Operationally it refers to the age of respondents, Up to 20 years & More than 20 years.
Gender:	Operationally it refers to the Biological construction of respondents like Male and Female students of the University of Sargodha.
Education:	Operationally it refers to the academic qualification of the respondents like Graduate & Under Graduate students of the University of Sargodha.
Use of the Internet:	Operationally it refers to what extent to students of the University of Sargodha use the internet for their academic studies.
Time spent per week:	Operationally it refers to how many hours a respondent spends time on the internet per week like 1 to 4 hours, 4 to 6 hours, 6 to 10 hours, and more than 10 hours.
Access to ISPs	Operationally it refers to what extent a respondents access the internet through different ISPs like PTCL-BB and Mobile 2G/3G/4G
Place	Operationally it refers to how frequently respondents prefer places for use of the internet like net café, UOS Central Library, Students' homes, Friends' homes, Classrooms, and Cooperative Stores.
Internet Devices	Operationally it refers to how frequently users prefer internet devices like Mobile, PC, Laptop, and Tablets.
Future learning	Operationally it refers to what extent respondent agrees to use the internet in their future academic learning.
Attention	Operationally it refers to what extent respondents pay attention to the contents of the internet for academic purposes like MS Word Files, PowerPoint presentations, PDF Files, Excel Sheets, JPS (Picture files), and Video and Text Files.

Data Retention	Operationally it refers to how frequently respondents accessed to retrieve data from Google Search, Wikis, E-Research Sites, E-Research Journals, E-Books, and Google Scholar for academic purpose
The traditional method of learning	Operationally it refers to how frequently respondents prefer traditional methods of academic learning like, classroom study, libraries, books, seminars, face-to-face study, group study, verbal discussions, printed material/notes, etc.
Understanding	Operationally it refers to what extent respondents agree that the use of the internet helps university students in understanding their academic needs.
Information	Operationally it refers to what extent respondents agree that the use of the Internet can increase information level rather than Traditional Methods.
Satisfaction	Operationally it refers to what extent respondents agree that University students are educationally satisfied with the Internet regarding their academic performance.
CGPA increase	It is operationalized as to what extent respondents agree that academic learning through the Internet can increase respondents' CGPA level.

Methodology

The methodology aims to give a proper plan of research work. According to the need of this study, the survey research method has been designed to collect data from the target population. A researcher must create an appropriate approach for each study design's research difficulties. A researcher needs to understand not only "how to calculate mean, variance, and distribution function for a set of data. How to find a solution to a physical system described by a mathematical model," "how to determine the roots of algebraic equations," and "how to apply a particular method," but also "how to find the solution of a physical system described by a mathematical model.

Table 4.1

Respondents' Profile, Demographic Distribution

		Frequency	**Percentage**
Gender	Male	207	53.9
	Female	177	46.1
	Total	**384**	**100**
Age	18-22	191	49.74
	23-29	148	38.54
	30 and above	45	11.72
	Total	**384**	**100**
Education	Undergraduate	199	51.82
	Graduate	122	31.77
	Post-Graduate	63	16.41
	Total	**384**	**100**

No. of responses (n=384)

Sample Size

The number of data sources from the planned population that makes up a sample size. It is extremely difficult for researchers to collect data from the big varied population because of time constraints and budget constraints. To find the absolute lowest number of samples needed to meet the desired statistical requirements, use Andrew Fisher's formula. On the University of Sargodha's main campus, 19000 male and female students are enrolled in all departments. This suggests that an additional 384 measurements are needed to get a 95% confidence level that the true value is within (±5 %) of the measured value. 384 respondents had been carefully selected from the University of Sargodha. The two genders of the chosen sample were males and females. Of the total responses, 207 (53.90%) are men and 177 (46.1%) are women. The age and education categories are collected at the same time. There are three age groups under the age category as well. The age groups are as follows: 18–22 years old, 23–29 years old, and over 30 years old. The age group of 18 to 22 years old has the highest percentage of responders (49.74%) of the overall population, followed by the age group of 23 to 29 years old (38.54%). Nonetheless, among the responders (11.72 %) are individuals who fall into the over-30 age group. There are three more divisions under the education heading. .Undergraduate, graduate, and postgraduate students make up the three groups (51.82 %) of the total responses were undergraduate students, followed by graduate students (31.77%) and postgraduate students (16.41 %). A convenience sample is a group of easily accessible subjects for study, also known as an available sample. A phenomenon,

characteristic, or attribute should appear in any sample, according to proponents of utilizing convenience samples. In most cases, the convenience sampling strategy is beneficial for pretesting questionnaires.

Unit of Analysis

Unit of analysis is a type of empirical case or unit, which is observed, measured, and then analyzed by the researcher in research work. In this research study, the Units of analysis are 384 male and female students from all departments of the University of Sargodha.

Data Collection

In research work after the description of the demographic characteristics of respondents and the determination of their subgroups completed by probability sampling, a convenience method for data collection has been carefully chosen. For data collection, the researcher adopted a face-to-face process, for this purpose, the respondents communicated personally to every respondent. The data for this research study was collected with a well-designed questionnaire. This questionnaire consisted of 14 close-ended questions. The research questionnaire was used to collect quantitative data. Quantitative data provides statistical descriptions, statistical relationships, and broad analysis of collected data. Scientific research techniques require data gathering. The practice of reducing data from unmanageable to manageable summaries is known as data reduction. SPSS Software is employed by computers to analyze data. Assigning codes and figures rather than letters and words is usual in computer analysis. Following the completion and assignment of the coding process, the findings needed to be calculated using statistical methods. Version 19.0 of the "SPSS" program has been used for this. Data was first meticulously entered into MS Excel sheets before being imported to SPSS. All variables were carefully created in data-feeding files with cumulative columns and rows that are automatically available following data entry. After this process, numerical figures from (1 to 5) were assigned according to variables to all responses.

Data Presentation

In this research study after analysis and data deduction, the entire data is presented and illustrated in shapes of tables and graphics. Textual interpretation of data makes it visible and understandable. After data presentation, statistical tests were applied with the help of SPSS Software to test of research hypothesis. SPSS software is being used for the analysis of data. Initially, data is entered and then analyzed through different commands of SPSS.

Validity and Reliability of instruments

Using Cronbach's alpha, the objects' internal reliability has been confirmed. A minimum alpha of 0.6, according to the researcher, was sufficient for the early stages of research. The interpersonal scale's assessed Cronbach alpha was .818, and the study questions and objectives outlined at the start of this research activity were topics that the instruments were created to cover (Ferguson, 1981). The instrument has been created to cover additional topics as well, supporting the solutions to the primary problems. The research assisted in ensuring that the questions were enough to cover all study-related aspects and that replies were consistent (Brownlow, 2007).

Table 4.1.

Reliability Statistics

Cronbach's Alpha	N of Items
.818	45

***No. of responses (n=384)*

Analysis

Table 5.1

Daily time spent on the internet

Response Category	Overall	Male	Female
1-6 Hours	38.16	20.56	17.59
4 TO 6 hours	24.35	13.12	11.22
6 TO 10 hours	22.43	12.08	10.34
More than 10 hours	15.06	8.11	6.94
Total Frequency	100	53.9	46.1

***No. of responses (n=384)*

Students use the internet around the clock to access academic info from all over the world. The table shown above (Table 5.1) shows how much time respondents spend online during the day. The researcher is posing questions in four areas of time spent. These categories pertain to the amount of time spent on the internet every day: 1 to 4 hours, 4 to 6 hours, 6 to 10 hours,

and more than 10 hours. According to the total response, (38.16 %) of respondents said they use the internet for one to four hours every day, while (24.35 %) said they use it for four to six hours. Additional research reveals that (22.43 %) of respondents spend six to ten hours a day. Similarly, (15.06 %) percent of users use the internet for more than ten hours every day. In the category of one to four hours spent online, female students spend more (17.59 %) than male students (20.56 %), according to an extensive analysis of their usage habits. In contrast, male students use the internet more frequently (13.12 %) than female students (11.22 %) in the time category of up to 4–6 hours each day. Further empirical results show that there is no significant difference (12.08 %) for males and (10.34 %) for both gender responder groups in the 6 to 10-hour category.

Table 5.2
Frequency *of use of Internet devices PTCL*

PTCL	Overall	Male	Female
Very much	38.14	20.55	17.59
Much	24.68	13.3	11.37
Somewhat	17.95	9.67	8.27
Rarely	11.22	6.04	5.17
Not at all	8.01	4.31	3.69
Total Frequency	38.14	53.9	46.1

***No. of responses (n=384)*

The extent of taking interest through various Internet service providers (ISPs), such as PTCL BB and Mobile 2G/3G & 4G, is displayed in Table (5.2). Overall results for PTCL BB are (38.14 %) very much and (24.68 %) considerably, followed by (17.95 %) somewhat and (11.22 %) rarely, according to the review of empirical findings. (8.01 %) of respondents said they did not at all use PTCL BB for their academic purposes. According to the gender-specific exclusive analysis, (20.55%) percent of males and (17.59 %) of females use PTCL BB very frequently. This is followed by the much response category, which is used by (13.3 %) of males and (11.37 %) of females. Additionally, empirical research has shown that male respondents are using PTCL BB more frequently as compared to female students.

Table 5.3
Frequency of use of Internet devices Mobile 3G/4G users

	Overall	Male	Female
Very much	55.45	29.89	25.56
Much	20.51	11.05	9.46
Somewhat	10.26	5.53	4.73
Rarely	7.37	3.97	3.4
Not at all	6.41	3.45	2.96
Total Frequency	100	53.9	46.1

***No. of responses (n=384)*

The table above also shows the outcomes of using mobile 2G, 3G, and 4G networks for internet usage. According to empirical findings, a total of (55.45 %) of respondents indicated they answered very much, followed by those who responded as much (20.51%) and those who reacted slightly (10.26 %). Male respondents utilize mobile networks more frequently (29.89 %) than female respondents (25.56 %), according to empirical results across genders. Similarly, mobile network usage frequency differs greatly from that of PTCL BB subscribers. Because of this, the results show that compared to other networking devices like PTCL BB, both male and female students at the University of Sargodha utilize mobile phone networks in a highly important way. This idea backed up the researcher's hypothesis as well.

Table 5.4
Places where respondent uses the internet

Response Category	Net café	Central Lib	Home	Friends Home	Class Room	Corporative Store
Very much	23.7	23.4	50	9.9	16.7	35.9
Much	30.8	27.2	18.3	14.4	15.4	11.5
Somewhat	10.9	19.2	20.5	15.4	17.6	29.2
Rarely	8.3	17.4	6.1	9.3	15.4	7.4
Not at all	26.3	12.8	5.1	51	34.9	16.0
Total Frequency	100 %	100 %	100 %	100 %	100 %	100 %

***No. of responses (n=384)*

The preferred locations for respondents to utilize the Internet for academic purposes are indicated in Table (5.4). This question has six different categories for responses. These categories include the University of Sargodha's cooperative store, the respondent's home, the respondent's friends' home, the net café, the classroom, the cooperative store of UOS, and the Central Library of UOS. Based on systematic and scientific research, empirical results show that students who use net cafés for internet access report using it very much (23.7%), and (30.8 %) as much followed by somewhat (10.9%), and not at all (26.3%). Students can also use the University of Sargodha's central library to use the Internet for their academic work. Regarding the Central Library of UOS, respondents gave a response category of (23.4%) for very much and (27.2%) for as much. Students also said that theyused the University of Sargodha's central library slightly (19.2%), infrequently (17.2%), and not at all (12.8%) for their academic study. Additionally, students can fulfill their online needs at the University of Sargodha Cooperative Store. According to study findings, students in the whole sample utilize the internet at a rate of 35.9%, and at the University of Sargodha's cooperative store, at a rate of 11.5%. Also, according to the students, (16%) and (29.2%) of them said they didn't know at all about the cooperative store, while 7.4% said they did so occasionally. Table 2 further data shows that (50 %) of respondents said they use the internet at home a lot, and (18.3%) said they use it a lot. In a similar vein, the answer group of seldom (6.1%) came in first, followed by somewhat (20.5%). An analytical look at the data reveals that 9.9% of the sample as a whole indicated they used the internet a lot, while 14.4% said they used it a lot at their friends' houses. It is also noted that the majority of students (51%) disagreed with this idea, believing it to be untrue. Internet users in the classroom group also showed an unusual response, with 16.7% of respondents indicating they use it a lot 15.4% indicating they use it a lot, followed by 17.6% indicating they use it somewhat, and 15.4% indicating they use it infrequently. The same evidence also reveals that most students disagree with the idea that they prefer to use the internet in the classroom (34.9%), at friends' houses (51%), at net cafés (26.3%), or not at all.

Table 5.5.
frequency of use of traditional methods of studies

Response category	Class room study	Libraries	Books	Seminars	Group studies	Printed material
Very much	38.5	12.2	23.4	9.9	11.2	28.2
Much	28.8	24.7	24.4	16	25.3	17
Somewhat	12.8	25	19.6	18.9	18.6	18.6
Rarely	12.5	18.6	15.4	24.4	16.3	22.4
Not at all	7.4	19.6	17.3	30.8	28.5	13.8
Total Frequency	100%	100%	100%	100%	100%	100%

***No. of responses (n=384)*

According to the results shown above (Table 5.5), the majority of respondents focus on their studies in the classroom very much (38.5%) and much (28.8%), followed by those who answered as somewhat (12.8%) and rarely (12.5%), while 7.4% answered as not at all. This is in contrast to libraries, where (12.2%) of all respondents indicated that they studied very frequently, (24.7 %) indicated that they studied frequently, and (25%) indicated that they studied somewhat. A thorough examination of the amount of information that books supply the University of Sargodha students reveals that respondents learn a great deal (23.4%) and a lot (24.4%) from books in comparison to seminars. Here students learn a great deal (9.9%) and regularly (16 %) from seminars. When group studies are conducted during sessions, students learn from and are attracted to one another. The exclusive analysis shows that (11.2 %) of the sample as a whole likes group studies very much, followed by (25.3 %) as much and (18.6 %) as somewhat as compared to the printed material response category, whereas (28.2 %) of respondents responded as very much and (17 %) as much. The exclusive analysis shows that overall, classroom studies provide students at the University of Sargodha with more information (67.3%) than books (47.8%), which is followed by printed material (45.2%).

Hypothesis Testing

H1: It is more likely that students prefer to use Mobile 2G/3G/4G Data more than PTCL BB (Accepted through Chi-Square Test)

Table 5.6.

Chi-Square Results

Chi-Square	PTCL BROADBAND	MOBILE 3G/4G
	56.875a	95.781a
Df	4	4
Asymp. Sig.	.000	.000

***No. of responses (n=384)*

****Path is significant at the 0.01 level.*

H-2: *Motivation for online learning is positively and significantly impacted by an attitude toward online learning.*

Table 5.7.

Direct and indirect effects

Effect type	Path	Estimate	p-Value	Hypothesis	Results
Direct	*students prefer to use Mobile 2G/3G/4G Data more than PTCL BB*	0.221	***	H1	Supported at 0.01
	e-Learning → *attitude toward online learning*	0.089	0.037	H2	Supported at 0.05

***No. of responses (n=384)*

***Path is significant at the 0.01 level.

Discussion

At the University of Sargodha, access to the internet is easy. The majority of students use their smartphones to access the internet. Students can use their laptops or mobile devices to access the internet in departmental computer rooms, central libraries, and classrooms. To obtain hard copies of the notes, there is no need to visit a cooperative store, nor is there a requirement to acquire any pertinent books for study purposes. Every student can respond quickly and readily to pertinent information thanks to the internet. Students who engage in this practice are more likely to have their educational requirements met. Students can obtain additional academic learning resources through the Internet. Students' accomplishments are also greatly influenced by traditional teaching approaches. Because of technological advancements, all students can now access the internet for educational purposes. Every kid makes an effort to do better academically and reach greater goals. In addition to conventional learning approaches, university scholars are becoming increasingly interested in innovative learning tools and strategies. University students show stronger support for the new online learning approach than for more conventional teaching approaches. To meet the diverse academic needs of teachers and students, online learning aids have integrated a variety of technological environments. The direct engagement of the teacher and students is the focus of traditional learning approaches. There are direct interactions between the teacher and the university students in conventional learning methods. Teachers have a decision-making role when it comes to curricular material and particular outcomes. The following areas of academic research on the internet can be the focus of future investigations. It is necessary to carry out additional research in this area. Evaluation of students' success in both the semester and annual systems should be the focus of future research. To improve students' academic achievement, online learning techniques, and traditional study methods should be combined. The study's findings suggest that there are not always any appreciable drawbacks to online learning, hence it is strongly advised that graduate and undergraduate students be encouraged to pursue online courses in the future. To sum up, the purpose of this study is to compare traditionaltechniquesتر عاتمعنت with e-learning side by side. It was also shown that various differ in how well people learn. Each has a unique set of benefits. In summary, there does not seem to be any negative impact on student accomplishment from the delivery of assignments online. Since the advent of online learning, everything has been going well, and there are no signs that this will change going forward.

Recommendations

This study looked at the level of interest, the reasons for using the internet, how it affects academic learning, how users understand how to use it and its educational contents, online communication trends, how students are understanding the new way that they are learning academic subjects online, and how the internet affects students' academic goals at the University of Sargodha. The findings of the study suggest that there are several differences between students enrolled in male and female classes at the University of Sargodha. However, several discrepancies also seemed to indicate a variation in the kind of materials. It is recommended t hat more locations on campus be upgraded to serve as Wi-Fi zones. The administration of the university should also establish a free internet zone that spans all campuses and standard internet facilities. Because students who learn online have a slightly higher CGPA than those who learn in traditional classroom settings, teachers are

advised to combine online and traditional course materials. It is important to encourage students to use the Internet for their academic work and to cite credible sources for their term papers and assignments to conduct successful investigations. Higher-level university students should use online databases, e-books, e-journals, and e-libraries as their academic resources. Ultimately, it is strongly advised that studentsuse a combination of traditional and online learning methods to maximize their success.

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