Investigate Students' perceptions of using the Internet for Learning

A thesis submitted in partial fulfillment of the requirements of the degree of Master of Science in Technical Education with specialization in Electrical and Electronics Engineering.

Muaadh Abdul Aziz Almujahid

STUDENT NO: 181031201

M.Sc.TE (EEE)

Supervisor: **Assoc. Prof. Md. Rashedul Huq Shamim**

DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
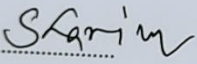
DHAKA-BANGLADESH

January 2021

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANIZATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)

7th January 2021

We hereby recommend that the thesis prepared by Muaadh Abdul Aziz Almujahid (student No: 181031201) titled "**Investigate students' perceptions of using the Internet for learning**" be accepted as fulfilling the part of the requirement for the degree of Master of Science in Technical Education (M.Sc.T.E) with specialization in Electrical &Electronic Engineering(EEE).

BOARD OF EXAMINERS

1. ....

   Muhammad Rashedul Huq Shamim

   Associate Professor

   Department of Technical and Vocational Education (TVE)

   IUT

Chairman (Supervisor)

2. ....

   Prof. Dr. Md. Abu Raihan

   Head

   Department of Technical and Vocational Education (TVE)

   IUT

Member (Ex-Officio)

3. ....

   Prof. Dr. M. Hafizur Rahman, IER,
   University of Dhaka.

External Member

4. ....

   Prof. Dr. Md. Shahadat Hossain Khan

   Department of Technical and Vocational Education (TVE)

   IUT

Internal Member

بسم الله الرحمن الرحيم

In the name of Allah, the Entirely Merciful, the Especially Merciful.

I wish to dedicate my Thesis work to my parents,

two brothers, and sisters, the Red heaven.

Acknowledgment

I am immensely indebted to Almighty Allah (SWA) for granted me health, protection, and made it possible for me to start and accomplished this work.
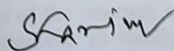
My appreciation goes to my supervisor **Md. Rashedul Huq Shamim** for his patience, advice, and spending his scarce time to read this work and make the necessary correction. I am proud to have you as my supervisor. The researcher likes to convey his deep gratitude and appreciation to **Prof. Dr. Md. Abu Raihan**, Head of Technical and Vocational Education (TVE) Department, Islamic University of Technology (IUT) for his guidance and mentoring which gave a significant contribution to the success of my study.

I equally recognize the effort of my lecturers from the Technical and Vocational Education (TVE) Department, and Electrical and Electronic Engineering (EEE) department, Islamic University of Technology (IUT) for giving me great insight on the task before me.

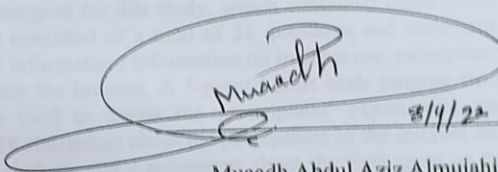My deepest thanks and heartfelt gratitude go to my parents Abdulaziz Qasim Almujahid and Ghania Ahmed Almujahid who are always the source of my inspiration. To my friends as well as my brother Faysal and Mahammed and my sisters, who have endured my absence of contacting them. Many thanks also go to all my classmates' M.Sc.TE class of 2020 who contributed in one way or the other to the success of my study.

Declaration of the Author

This is to certify that the work presented in this thesis is the outcome of the investigation carried out by Muaadh Abdul Abdul Aziz Almujahid under the supervision of Mr. Md. Rashedul Huq Shamim in the Department of Technical and Vocational Education (TVE), Islamic University of Technology (IUT), Gazipur, Bangladesh. It is hereby declared that this thesis/report of it has not been submitted elsewhere for the award of any Degree or Diploma.

Mr. Md. Rashedul Huq Shamim
Supervisor
Department of Technical and Vocational Education
IUT, Gazipur, Bangladesh

Muaadh Abdul Aziz Almujahid
Student No: 181031201
Academic year: 2019-2020

Abstract

Using the internet in higher education has become an important issue. Thereby, using the internet for learning has grown significantly over the past decade due to its real and perceived benefits. However, not so much research has been carried out to study students' perceptions of the use of the Internet for learning. It is imperious that all participants involved in learning understand the perceptions and experiences of students about the use of the internet for their learning. In this paper, we present a study that aims to examine student perceptions, experiences, and time spent daily with the use of the Internet for learning. Our research is based on a questionnaire designed for this study, which contained items drawn from previous research. The questionnaire consisted of a total of 31 questions and statements grouped in four sections: basic demographic information; information on Internet use; perceptions of students of the internet; experiences about the Internet. A 5-point Likert scale ranging from "totally disagrees to totally agrees" was used to assess the participants' experiences and perceptions about the Internet. There were 16 statements about the perceptions of the Internet and 13 statements about the experiences of the students and 2 statements about the time spent on the internet for learning. The target population for this study was defined as students enrolled in graduate and postgraduate studies with different profiles (gender and academic level) and from the different departments were located at IUT. In this research, we present the findings of our study, which reveals that students' perceptions are influenced based on the daily use of the Internet. However, their general attitude toward the use of the Internet for learning is positive. Moreover, the results showed no significant differences in gender, academic level, department, year of study, and type of student. In general, all the students agreed with the statement that learning to use the Internet is crucial for learning nowadays. Besides, most of the students reported that the Internet makes life easier and more comfortable.

Key words: Internet, Perceptions, and Teaching-Learning.

Table of contents

List of tables

List of figures

Chapter 1   Introduction

1.1   Background of the problem

The Internet is a global communication system for transmitting data across different types of media, and it can be described as a global network and also connecting different networks, whether they are private, public, commercial, or academic networks.

The Internet has developed greatly during the period from the fifties to the present, as there has been a steady increase in the size of the networks and the diversity of the services they provide.

Education via the electronic network is a new thing in our life with the abundance of resources and our focus is less on what we want to achieve from the Internet and from this point it was the research plan of the Islamic University of Technology to verify the use of the Internet in the life of the student today in education and other fields.

In the last decade, many educational researchers indicated that the use of the Internet for academic purposes growing rapidly in higher-education institutes (Jones, 2002; Jones, Johnson-Yale, Millermaier, & Perez, 2008). For educators, it is no longer a question of whether students should use the Internet for academic work or not; rather, it is a question of how students can benefit the most from Internet-based learning (Lee & Tsai, 2011). The highly developed network has a profound influence on education: the traditional superiority of teachers in knowledge and information is losing. So in the informational society, the teachers must adjust themselves to a higher request proposed to them; the traditional way of learning of students has been passive but using the network they may carry on faster in their study. This will certainly enhance the efficiency of classroom instruction. In the US, the network higher education has come up to half of the total today (Liang Linmei & Liu Yonggui, 2009). Improvements in technology and the increasing bandwidth of Internet access have led to increasing popularity for synchronous solutions for instruction. Not only do they provide savings in terms of time and cost, but in many situations, they can also outperform both asynchronous online instruction and traditional face-to-face education. However, until now, the lack of a pedagogical framework for synchronous instruction has limited the effective use of this medium (Chen, Ko, Kinshuk, & Lin, 2005). In the present situation, students are more inclined to learn through the Internet because this is the day of online education. Most of the developing countries are offering online education and the Internet is the technology that facilitating the process.

According to Hamid et al. (2015), social technologies are a part of the Internet and the Internet is part of technology; it provides us to get efficient and fast information, establish contact with everyone, and to have a chance for searching all types of data with its globalization effect. Internet facilities contribute individuals to search for loneliness to get information stably and comfortably. The study is that attitudes of students about the Internet by considering their tendencies emerging with described statements to realize new generation perspectives whose are graduate and postgraduate students.

Contemporary social technologies are used by hundreds of millions of users, available for free, and are engaging and fun to use, making them appropriate to be harnessed for teaching and learning and in particular to enhance social interactions (Hamid et al. 2015). Few studies have explored science students' preferences toward these environments. If science educators can have more information about students' perspectives or expectations about Internet-based learning environments, they can create more favorable environments or systems for science students (Tsai, C.C., 2005). The students' responses also showed that they strongly preferred the Internet-based learning environments that could connect scientific knowledge with real-life situations. Moreover, female students tended to place more emphasis on the instructional guidance offered by the Internet-based environments for science learning, as well as the presentation of scientific knowledge in authentic contexts than did male students (Tsai, C.C., 2005).

1.2   Problem statement

The Internet plays a vital role in the teaching and learning process whereas both the students and teachers are benefited from this technology. However, an Internet-based learning environment, which provides opportunities to the students to search for learning materials from online search engines, whereas these contents are supplementary to traditional textbooks or course materials. According to Hamid et al. (2015), social technologies are a part of the Internet and the Internet is part of technology; it provides us to get efficient and fast information, establish contact with everyone, and to have a chance for searching all types of data with its globalization effect. Internet facilities contribute individuals to search for loneliness to get information stably and comfortably. Recently, increasing studies investigated information seeking or searching practices for learning. The researcher, in this study, is trying to investigate students learning attitudes as well as their perceptions of using the Internet and how the Internet influences their education? The student can

achieve what he dreams about, but what are the problems or obstacles that the student faces during the learning journey, and can they be solved so that the student can achieve what he wants.

1.3   Research objectives

1.3.1   General Objective:

The main objective of the study is to investigate students' perceptions of using the Internet for learning.

1.3.2   Specific Objectives:

The specific objectives of the study are

1. To understand the perceptions of students in using the internet for learning
2. To determine the learning experience of students by using the internet for learning
3. To identify the learning outcomes of the students using the internet.

To achieve those objectives the following research questions can guide:

1.4   Research questions.

1.4.1   Research Question 1:

What are the perceptions of students in using the internet for their learning?

1.4.2   Research Question 2:

How to determine the learning experiences of the students by using the internet?

1.4.3   Research Question 3:

What are the learning outcomes of the students using the internet?

1.5   Possible outcomes:

This study is to seek students' perceptions of using the Internet for learning in higher education. The main focus of this study is to find out the perceptions of the students regarding learning through using the Internet. These beliefs are expected to be positive or negative towards using the Internet. If positive for example the facilitating conditions being in favor of using the Internet as per the specific objectives stated above in this presentation then the university, and the education system will be advised to light up the benefits of the study in favor to improve the use of the internet facilities on the campus. If negative the necessary solutions needed will be explored and incorporated so that using the internet is implemented without any obstacles.

1.6   Assumption

The researcher assumes (a pilot phase) that the required information will be available for students of IUT in Bangladesh and the work is communicable to the general students for practical consumption. To serve as a guide for TVE officials. To encourage other persons of OIC member countries to take up some related problems for further Investigation especially in the Islamic University of Technology campus. To suggest some new problems for further studies as the research report reviews the related studies and discusses the result of the study. To provide a clear picture of the research method, sample, and techniques used in conducting the research work.

1.7   Delimitations
The study was limited to the Islamic University of Technology (IUT) case studies that were conducted specifically for IUT students.

1.8   Definition terms & Acronyms
1.8.1   Definition terms:

1. **Likert scale:** It refers to a rating scale, often found on survey forms, that measures how people feel about something, it includes a series of questions that you ask people to answer, and ideally 5-7 balanced responses people choose from. It often comes with a neutral midpoint.

2. The problems in the use of the internet: The internet and extraneous causes (like physical facilities, knowledge, skills, attitudes, and awareness) are barriers in the use of the internet and resources from the internet in classrooms, laboratories, and workshops to achieve educations objectives.

3. Internet: the internet is a massive networking infrastructure that connects millions of computers globally, forming a network in which any computer can communicate with any other computer as long as they are both connected to the internet. That provides, uses, or makes accessible, either publicly or privately, high-level services layered on the communications and related infrastructure described herein.

1.8.2   Acronyms

1. IUT, Islamic University of Technology

2. BSc, Bachelor of Science

3. MSc, Master of Science

4. PhD, Doctor of Philosophy

5. TVET, Technical and vocational Education and Training

6. SPSS, Statistical package for social sciences, version (2015)

Chapter 2   Literature Review

2.1   Introduction

In the 1980s we witnessed the dawning of the information age. Today, the use of information technology has become an integral part of our lives whereas education is no exception.

The Internet provides students many interesting tools that can be used to improve the learning activities. Students are presented with a new platform for interaction and exchanging ideas. A review of the literature however reveals few empirical studies examining the relationship between the use of the internet and student learning. Furthermore, despite the growing interest in research on using the Internet for learning, researchers continue to overlook cultural variations when enumerating students' learning benefits through using the internet for learning.

Because of the increased dependence on the internet, the use of information and communication technology (ICT) has also grown manifold in education. Increasingly, there is a growing perception amongst teachers that ICT is an effective way to connect with and engage their students in learning. It is important to acknowledge the fact that students have become more sophisticated in terms of IT and internet 'consumption' and as such can process learning differently through a constant exchange of information and discussion. Students are growing up immersed in digital media which they use for entertainment, communication, learning, and even shopping. Increasingly, these internet generation learners will demand that schools are technologically relevant and provide technology-rich learning environments. Technology is a tool that can help teachers exemplify best practices to create enriched and collaborative learning environments by addressing different learning needs, supporting the transfer of learning, encouraging higher-order thinking, incorporating real-world problems and authentic assessments, and preparing students for lifelong learning (Fullan, 1998). These views are consistent with current learning theories in that they emphasize "interactivity, activation of prior knowledge, connecting the theoretical to the experiential, and using relevance and efficacy to assess information" (Coutinho 2007, p.2028). Learning in today's context is essentially more than assimilating knowledge transmitted by textbooks and teachers. It requires the individual to take personal responsibility to build and communicate the knowledge with others (Harada, 2003).

Previously the days where the focus was only on exploiting the ability of IT in making lessons more visually engaging or making the materials more entertaining. IT is now seen as an essential tool in bringing about new elements of teaching and learning as well as communication between users.

2.2   Web 2.0 applications in Educations

The internet is more than just a massive network of computers linked together to enable people to exchange information. With the introduction of Web 2.0, the internet has now become a global platform for social interaction (Alexander, 2006). Current popular communication applications on

the internet include Facebook, Instant Messaging, Wikipedia, and Weblogs. These internet communication tools allow users to create their own personal or image on the World Wide Web (Thompson, 2007). Acknowledging these emerging Web 2.0 applications, educators have come to accept the need to explore the effectiveness of such tools in their classroom teaching.

Web 2.0 applications, such as the popular YouTube, online video network, may enhance health care students' learning and retention while providing connections with peers and faculty. Today's students are consumers of popular social networking tools, such as "Facebook" and "Myspace," as well as the personal video sharing site, YouTube. Web 2.0 tools are when used in an educational setting? Web 2.0 tools are tools of technology that allow teachers and students alike to create, collaborate, edit, and share content on-line that is user-generated. These can include tools for presentation, research, collaboration, audio, video, slideshow, images, music, drawing, writing, organizing, mapping, quiz and test generation, file storage and web pages, and also tools for graphing and conversion. New tools are being developed all the time, so it is important to be informed about the newest trends in education to keep up with the technology that surrounds the lives of your students.

Using technology in your classroom can have many benefits for you as a teacher by supporting your teaching goals and increasing the learning capabilities of your students. Web 2.0 tools are becoming more prevalent in the classroom but can seem daunting for teachers who are not confident in their technological ability. There's some good news though these tools are generally designed to be extremely user-friendly. Even a novice can master them!

This text lesson will break the Web 2.0 tools into four groups:

- Tools for the creation and support of a web-based learning environment
- Tools for communication and the cultivation of relationships
- Tools for collaboration
- Tools for students to create

2.3   Role of the internet in education

Internet, the most useful technology of modern times which helps us not only in our daily lives but also in our professional lives. For educational purposes, it is widely used to gather information and to do research or add to the knowledge of various subjects.

The Internet plays a very vital role in education. It is no doubt that in this modern era everyone prefers Google for their queries, problems, or doubts. Popular search engines like Google, Yahoo, etc. are the topmost choice of people as they offer an easy and instant reach to the vast amount of information in just a few seconds. It contains a wealth of knowledge that can be searched at any time. The internet has introduced improvements in technology, communication, and online entertainment.

Today, it has become more important as well as a powerful tool in the world which is preferred by everyone. Everybody needs the internet for some or other purposes. Students need the internet to search for information related to exams, curriculum, results, etc. You can also follow these steps

for students to achieve success in student life. Importance of internet in education to the students' means that it makes easier for them to research things, and relearn the content taught in the school. People use it according to their needs and interests.

There are many benefits of the internet in the field of education. Some of these are:

2.3.1.1   *Cost Effective and Affordable Education*

One of the largest barriers to education is high cost. The Internet improves the quality of education, which is one of the pillars of sustainable development of a nation. It provides education through Videos (like YouTube tutorial videos) and web tutorials which is affordable to everyone and cost-effective.

2.3.1.2   Student-Teacher and Peer Interaction

The internet has allowed students to be in constant touch with their teachers or with other fellow classmates with the help of social media, messaging apps and chat forums. Parents can interact as well as communicate with teachers and school authorities about their kid's performance in the school. Interaction with the like-minded people on forums can help students to explore new ideas and enrich their knowledge.

2.3.1.3   *Effective Teaching and Learning Tool*

The Internet has become a major tool for effective teaching as well as a learning tool. Teachers can use it as a teaching tool by posting their teaching materials (notes and videos) on the school website or forum. The learning process becomes interesting and diverse with the use of tutorial videos and notes. Teachers can teach with the use of animation, PowerPoint slides, and images to capture the students' attention.

2.3.1.4   *Easy Access to Quality Education*

Students can easily access quality education materials like tutorial videos on YouTube for free or pay fees online for more quality study materials. Teachers can also make use of the internet by proving the students with extra study material and resources such as interactive lessons, educational quiz as well as tutorials. Teachers can record their lectures and provide them to the students for revisions which is better than reading from notes.

2.3.1.5   *Interaction with Digital Media*

Regular use of digital media is one of the most basic parts of our lives. Digital bulletin boards save paper, allow displaying of videos and audio to attract the attention of students. Nowadays, there are many paid sites that provide educational resources that are rich in quality and easily understandable to the masses.

2.3.1.6   *Keeping you updated with Latest Information*

Information is the biggest advantage which the internet is offering. There is a huge amount of information available for every subject. It keeps us up to date with the latest information regarding the subjects in which we are interested.

2.3.1.7 *Learning with Multimedia*

It helps the students with the learning process as it helps to simplify the knowledge. Also, it helps to visualize what is being taught by the teachers in school. If you want to prepare for final exams, you can access Video Tutorials and other resources online through the Internet.

The Internet is a boon to the people, which is used all over the world. Hence, it should be used for a good purpose. It has had a great impact on imparting education to the children. If this is used in appropriate ways that meet children's development level, they can benefit and learn from the Internet.

2.4 Present status of using the internet in IUT

2.4.1 Internet statistics use

The amount of time that IUT gives to students in 2015 is (2500) Two thousand five hundred minutes, which is equivalent to approximately 42-hours, during the lockdown in 2020 April, IUT has given their students 18000 minutes for undergraduates, 19200 minutes for postgraduates.

2.5 Availability of the Internet on IUT campus

2.5.1 Internet

Implementing CAN (Campus Area Network) to develop and proliferate high-speed internet facility through wired and wireless technology for every student, faculty, and staff members.

2.5.2 Wi-Fi System

Facilitating extensive opportunities for the use of wireless networks. The Wi-Fi network is available for every student, faculty, and staff members.

Chapter 3   Methodology

3.1   Introduction

In this section, the research design, the scope of the study, population, sample of the population, sampling technique, and instrument for data collection, validation and administration of the questionnaire, and the method of data analysis have been discussed. The method adopted was geared towards meeting the objectives stated previously.

The study was launched to this end, multiple stakeholders in the respective Institutions that promote the use of technology through relatively seamless wireless access, with an onsite supply of devices for students unable or unwilling to bring their own to class.

In terms of percentages, average score, Weighted average, one-way ANOVA, etc. the scores were calculated by combining the different items of the questionnaire to form two (2) categories, which were formed according to the objectives of this study. The second part included the five option Liker scale (31 questions).   The question items are of thirty-five (31) closed-ended degrees of opinions. For the closed-ended items, a five-point Likert type scale in the form of strongly agree (rated 5) Agree (rated 4), Neutral (rated 3), Disagree (rated 2) &strongly disagree (rated 1) were used. The questionnaires were validated by experts in this area' and were adapted and modified from different sources.

The questionnaires were posted online to the sample population through the stratified sampling technique and have used Google forms. Hence, the required data were collected either through a shared link between the researcher and the target interest groups and /or via WhatsApp, etc. which is an online form all responses were received in real-time upon completion of the form by the students and also the activities of Islamic University of technology in this field, noted.

3.2   Research Design

This study is a quantitative survey aimed to investigate students' perceptions of using the Internet for learning. The quantitative research approach is to be used because it is effective in gathering data from the population and the results are generalized to the large population. The study is to be conducted in Bangladesh particularly in the Dhaka Division because it consists of many students

from different divisions of Bangladesh, and information obtained from them can be used to represent other divisions of Bangladesh.

3.3   Data Analysis

From the responses, data were analyzed using the Statistical Package for the Social Sciences (SPSS) the software in which regression analysis was used to determine the extent to which all the research parameters (students' beliefs or perceptions, experiences of students, and time spent) are to be measured. Two statistical analyses were employed for this study. The first analysis utilized the matching independent sample t-test for within-subject comparison based on gender and student type. The second analysis used one-way ANOVA tests for examining differences of the perceptions of Internet-based learning due to participants' Academic level, Year of study, and Department. Whereas Mean, Standard Deviation, and frequency to find out the time spent on the internet for learning.

These categories are; first part on student's particulars such as gender, specialization, Student type, Academic Level, etc.

I received following responses, Male 16.0 % (25.0) and female 84.0 % (131.0).

Mechanical and Production Engineering (MPE) 11.5% (18.0)

Civil and Environmental Engineering (CEE) 00.0% (00.0)

Electrical and Electronics Engineering (EEE) 27.6% (43.0)

Technical and Vocational Education (TVE) 23.1.0% (36.0)

Computer Science and Engineering (CSE) 43.0% (27.6)

Business of Technology and Management (BTM) 10.3% (16.0)

Showing Demographic Data of the participants

Name	No. of Response	Percentage (%)
Gender		
Male	131	84.0%
Female	25	16.0%
Student Type		
International Student	123	78.8%
Domestic Student	33	21.2%
Academic Level		
Postgraduate	17	10.9%

Undergraduate	129	82.7%
Diploma	10	6.4%
Year of Study		
First Year	43	27.6%
Second Year	59	37.8%
Third Year	35	22.4%
Fourth Year	19	12.2%
Department		
MPE	18	11.5%
EEE	43	27.6%
TVE	36	23.1%
CSE	43	27.6%
BTM	16	10.3%

The sample was categorized according to independent variables such as gender, department, etc.

The table discussed the demographic data of the respondents
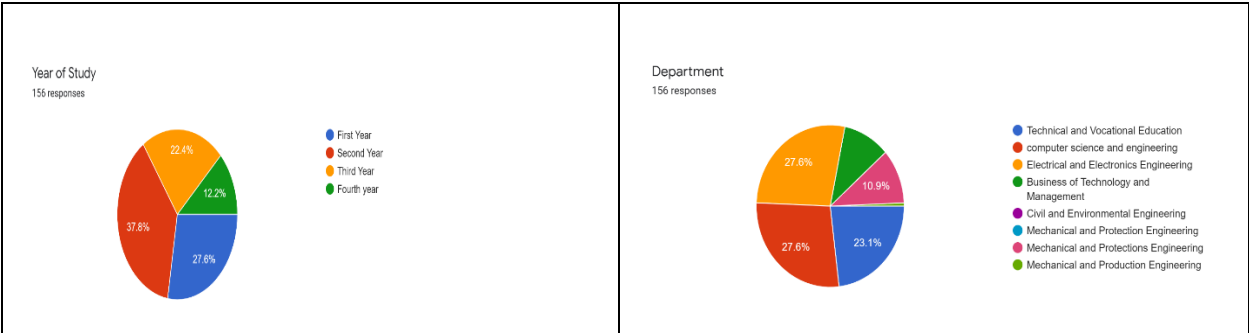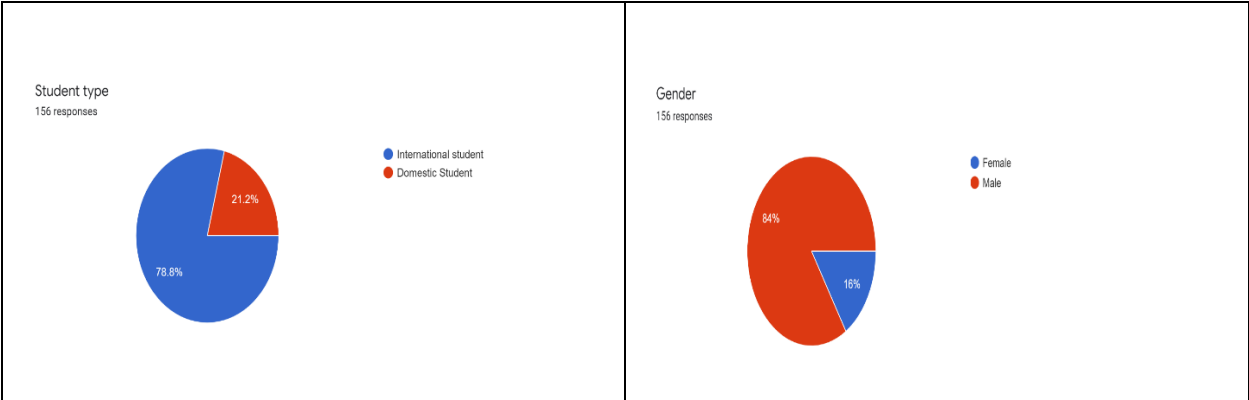
3.4   Ethical consideration

The subject of this study were students at Islamic university of Technology in Bangladesh. The selection process of respondents and to providing information and opinions were required a request letter with questionnaires. The subject was provided proper information and opinions regarding with questionnaires. Along with the data collection process, the subject and researcher followed the ethical requirement of the University of IUT.

Chapter 4   Data analysis and results

4.1   Introduction

This chapter comprised the analysis and interpretation of the data collected using a questionnaire. Analyses of the data were performed using both descriptive and correlation statistics. Descriptive measure including percentage means of items and the standard deviation of each item was calculated to describe relevant information about research questions.

Responses have been taken into consideration while examining students' perceptions of using the Internet for learning. Gender, Department, Academic level, Student type, Year of Study were the factors taken into concern while examining students' perceptions of using the internet for learning. After the survey, 156 responses were obtained after the data collection from IUT (Islamic University of Technology). From the responses data was analyzed using the Statistical Package for the Social Sciences (SPSS) software version 23. The data were analyzed in line with the three specific objectives of the study i.e., finding out students' perceptions of using the Internet for learning, the experiences of using the internet for learning, learning outcomes and time spent by students in using the internet for learning.

4.2   Demography information of the students

The data was collected from 156 respondents drawn by sampling from IUT (Islamic University of Technology). The sampled students were presented in terms of the demographics of respondents, highlighting the groups of students.

4.2.1   Gender

The respondents have therefore been categorized according to gender as the sample consist of both male and female students.
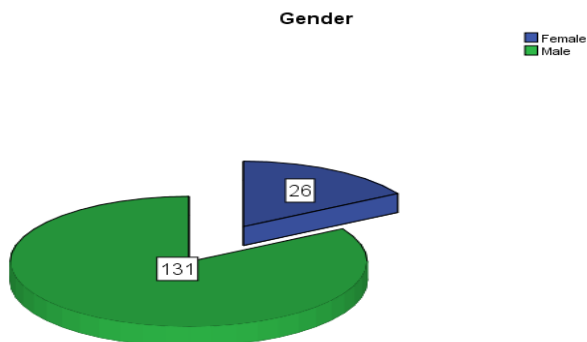
Figure 4-1: Gender frequency

Figure: 4.1 above shows that out of 156 students of IUT who responded to the questionnaires 131 (84%) were males and 26(16%) were females. This showed that there were more male students at IUT than females in the study area.

4.2.2 Department

Department

Legend:
- TVE
- CSE
- EEE
- BTM
- MPE

Pie chart values: 37 (TVE), 43 (CSE), 43 (EEE), 16 (BTM), 18 (MPE)
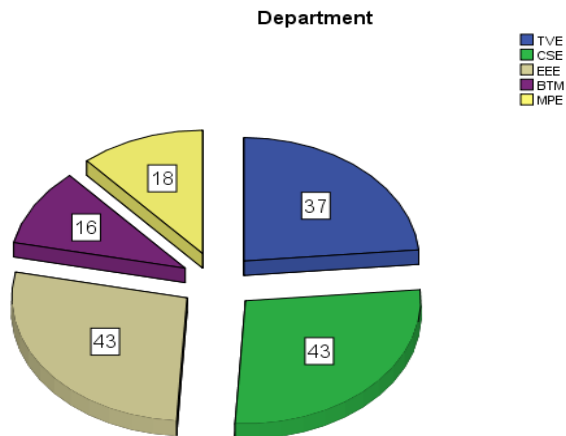
Figure 4-2: Departments

Table 4.2 shows the distribution of respondents in terms of the department. 37 (23%) TVE, 43 (27.4%) CSE, 43(28%) EEE, 16(10.2%) BTM, 18(10.8%) MPE.

4.2.3 Academic level

Academic Level

Legend:
- Postgraduate
- undergraduate
- Diploma

Pie chart values: 18 (Postgraduate), 129 (undergraduate), 10 (Diploma)
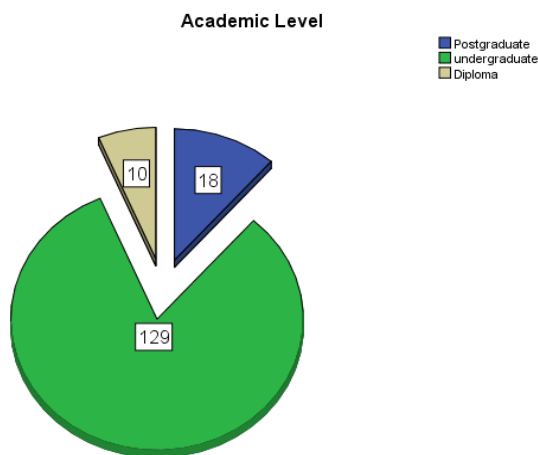
Figure 4-3: Academic level

Figure 4.3 shows the distribution of respondents in terms of the academic level. 129(82.8%) Undergraduate, 18(11%) Postgraduate, 10(7.2%) Diploma.

4.2.4 Students type

Student type

■ International student
■ Domestic student
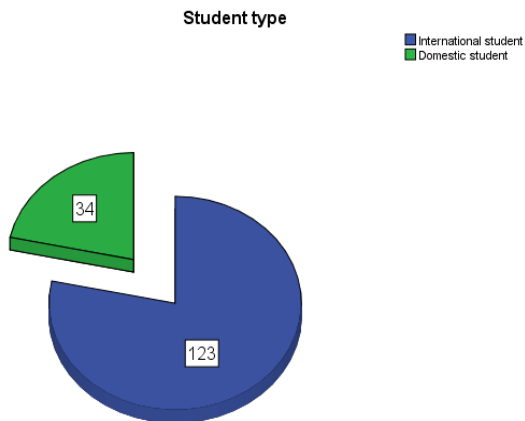
Figure 4-4: students' type

Figure 4.4 shows the distribution of respondents in terms of student type. 123 (79%) International student, 34 (21%) Domestic students.

4.2.5 Year of study

Year of Study

■ First Year
■ Second Year
■ Third Year
■ Fourth Year
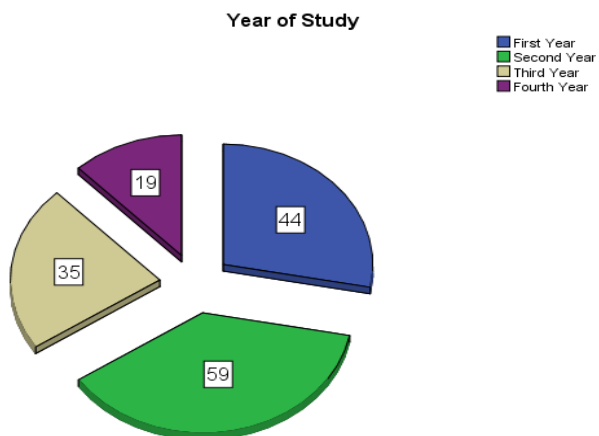
Figure 4-5: Year of Study

Figure 4.5 shows the distribution of respondents in terms of the Year of the student. 44 (28%) First-year, 59 (37.6%) Second-year, 35 (22.3%) Third-year, 19 (12.1%) Fourth year.

4.3   Reliability of Items Questionnaire

The reliability of items was examined by using Cronbach's Alpha which is generally used in questionnaires research to measure the reliability of a set of items. Reliability Coefficient was examined the two main categories of questionnaire items as shown in table: 1 below.

Table 1: Reliability Test

Category of Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
Perceptions	.897	.899	16
Experience	.809	.816	13
General	.923	.925	29

To establish the reliability of the Research Instrument Items, Cronbach's alpha test was carried out whose results were as shown in Table 4.1

From Table 4.1 both the individual categorical items in the questionnaire produced a Cronbach alpha score above .8 indicating the internal consistency was good (Briz-Ponce, Pereira, Carvalho, Juanes-Méndez, & García-Peñalvo, 2017) and the general Cronbach alpha coefficient for combined items was .893 which is excellent (Briz-Ponce et al., 2017)showing the research instrument was reliable for its internal consistency.

4.4   Perceptions and experiences about using the internet for learning.

In the questionnaire, students were asked about their perceptions of using the Internet for learning and what they do while surfing off the problems of the internet. In general, most students agreed with the statement that learning to use the Internet is crucial for education and, above all, work.

Table 2 The mean of perceptions and experiences

	Number	Mean	Std. Deviation
Perceptions	157	3.9715	.58802
Experiences	157	3.8697	.50115
General	157	3.9255	.52085

In terms of mean scores, the scores were calculated by combining the different items of the questionnaire to form two categories which were formed to reflect the specific objectives of this study. Therefore, giving mean scores in terms of students' perceptions mean (3.9715), students' experiences mean (3.8697). These mean score values were above the cut-off point of 2.5 as shown in Table 2. These mean values indicated that students perceive using the internet for learning to be suitable for their learning as it provided ways through which they can use the internet for learning. And this positive perception was based on the presence of experiences that drive them to use the internet for learning.

4.4.1 Mean scores according to items of perceptions and experiences

Items of Perceptions

Item	Value
I find the Internet is useful for my learning.	4.276
	4.269
The Internet can enhance my learning performance.	4.128
	4.083
I would feel confident that I can use the Internet.	4.045
	4.032
Knowledge of internet usage is important for the…	3.981
	3.974
I expect that I can become proficient in using the…	3.968
	3.949
The Internet provides information that is easy to…	3.904
	3.865
If I get to use the Internet, I expect that will use the…	3.827
	3.809
If I get to use the Internet, I intend to use the course…	3.808
	3.705

Figure 4.6 Results of questions about students' perceptions

Items of Experience

Item	Value
I find that the Internet is very easy to use.	4.192
Using the Internet is compatible with most of my learning.	4.083
Internet leads to less face-to-face interaction.	4.051
The Internet increases my learning output.	4.026
The Internet provides the service I need.	4.019
It is easy to operate the Internet and I get it to do what I want it to…	3.968
I feel comfortable in using the functions and services provided by…	3.955
I find that the human interface of the Internet is clear and easy to…	3.859
It is easy to navigate the Internet.	3.853
I like trying technological novelties.	3.827
The layout and user interface design of the Internet is friendly.	3.686
My relationship with the internet is purely for practical reasons.	3.65
I find that interacting with the Internet doesn't demand much care…	3.199

Figure4.7 Results of questions about experiences

Fig.1.6 &1.7 showed the results of all the questions of perceptions and experiences: a value close to 1 means "totally disagreed", whereas a value close to 5 means "totally agreed". Research items under perceptions of using the internet for learning had a score mean above 2.5 on a five-point scale. This showed that these were an attitude of which students would use the internet for their learning. Therefore, using the internet for learning is suitable and capable of being used to facilitate and enable learning through these available abundant of using the internet for learning.

4.4.2 Correlations matrix

Table 3 Correlations matrix for the categorized questionnaire items

		Perceptions mean	Experience mean
Perceptions mean	Pearson Correlation	1	.797**
	Sig. (2-tailed)		.000
	Number	157	157
Experiences mean	Pearson Correlation	.797**	1
	Sig. (2-tailed)	.000	
	Number	157	157

**. Correlation is significant at the 0.01 level (2-tailed).

A Pearson correlation test was conducted to test the relationship between students' perceptions and students' experiences using the internet for learning as shown in the Pearson correlation matrix Table 3. This test indicated the positive relationship between specific objectives 1 and 2 since there was a positive significant relationship between perceptions and experiences for using the internet for learning (r=.797, n=157, p<0.0001)(Chaka & Govender, 2017). This indicated that the two specific objectives of this study are highly inter-dependent on each other. This inter-dependence is particularly in such a way that using the internet for learning and experiences highly influence students' perceptions using the internet for learning.

4.4.3 Perceptions and experiences by gender

Is there any significant difference among the students using the internet for learning in terms of gender? An independent t-test was carried out to examine if there exists any statistically significant difference among the students' perceptions of using the internet for learning concerning their gender.

Table 4 perceptions and experiences by gender

Gender	N	Mean	SD	T-test	Significance
Female	26	4.0459	.48113	1.276	0.204
Male	131	3.9028	.52956		

The results imply that the mean values for both male and female students do not indicate any significant differences among the students in terms of their gender as their mean difference is .14304 between male and female perceptions mean is negligible. From the results of independent sample t-test table 5, where (p value=.923, p>0.05), this indicated that there was no significant difference among the students' perceptions of using the internet for learning in terms of gender.

Basing on the mean values (Table 4) obtained measured on a five-point scale which was above 4 with a negligible mean difference and calculated t value showing there was not a significant difference in the scores for male (M=3.90, SD=0.52) and female (M=4.05, SD=0.48) Conditions; t (155) =1.276, p=0.204."

4.4.4 Perceptions and experiences by student type

Table 5 perceptions and experiences by student type

Student type	N	Mean	Std. Deviation	T-test	Significance
International student	123	3.9390	.50104	0.569	0.570
Domestic student	34	3.8812	.60231		

Table 5 showed that the mean values for both international students and domestic students do not indicate any significant differences among the students in terms of their student type as their mean difference is .05780 between international and domestic students' perceptions mean is negligible.

There was not a significant difference in the scores for international students (M=3.93, SD=0.50) and female (M=3.88, SD=0.60) Conditions; t (155) =0.569, p=0.570."

4.4.5 Perceptions and experiences by year of study
A one-way ANOVA was conducted to compare the effect of [Year of study] on the (perceptions and experiences).

Table 6 perceptions and experiences by year of study

Year of Study	N	Mean	SD	df	F	Sig.
First Year	44	3.89	.507	3	.428	.733
Second Year	59	3.92	.561	153		
Third Year	35	4.00	.514			
Fourth Year	19	3.84	.472			

An analysis of variance showed that the effect of year of study on perceptions and experiences of using the internet for learning was not significant, F (3,153) =0.428, p=0.733

4.4.6 Perceptions and experiences by Academic level

Table 7 perceptions and experiences by Academic level

Academic Level	N	Mean	SD	df	F	Sig.
Postgraduate	18	3.8	0.61	2	0.882	0.416
Undergraduate	129	3.9	0.51	154		
Diploma	10	4.1	0.47			

An analysis of variance showed that the effect of academic level on perceptions and experiences of using the internet for learning was not significant, F (2, 154) =0.882, p=0.416

4.4.7 Perceptions and experiences by Department

Table 8 perceptions and experiences by Department

Department	N	Mean	SD	df	F	Sig.
BTM	16	3.8	.626	4	.461	.764
MPE	18	3.8	.541	152		
TVE	37	4.0	.511			
CSE	43	3.9	.462			
EEE	43	3.8	.553			

An analysis of variance showed that the effect of the department on perceptions and experiences of using the internet for learning was not significant, F (4, 152) =0.461, p=0.764

4.5 Time spent

Table 9 Mean scores of Items of Time spends

		Daily average time spent on the Internet.	Daily average time spent on the Internet for learning.
N	Valid	157	157
	Missing	0	0
Mean		5.153	4.484
Std. Deviation		1.4240	1.3234
Minimum		1.0	1.0
Maximum		6.0	6.0

Table 9 above showed the mean score of the daily average time spent on the internet in general and on the internet for learning. The maximum range of the questions is 6.0 and the minimum range of the questions 1.0. The total mean of daily time spends on the internet is 5.153 the individual mean values in the questionnaire about the time spent on the internet were above the cut-off point of 3.0.

4.5.1 Time spends on the internet

Table 10 Daily Frequency of Time spends on the internet

		Daily average time spent on the Internet.			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No use	11	7.0	7.0	7.0
	Below 1 hour	1	.6	.6	7.6
	1-2 hours	5	3.2	3.2	10.8
	2-3 hours	17	10.8	10.8	21.7
	3-4 hours	25	15.9	15.9	37.6
	4 hours and above	98	62.4	62.4	100.0
	Total	157	100.0	100.0	

Table 10 above showed the frequency of daily average time spent on the internet. The highest range of the question is 4 hours and above were 98 respondents out of 157. (62.4%).
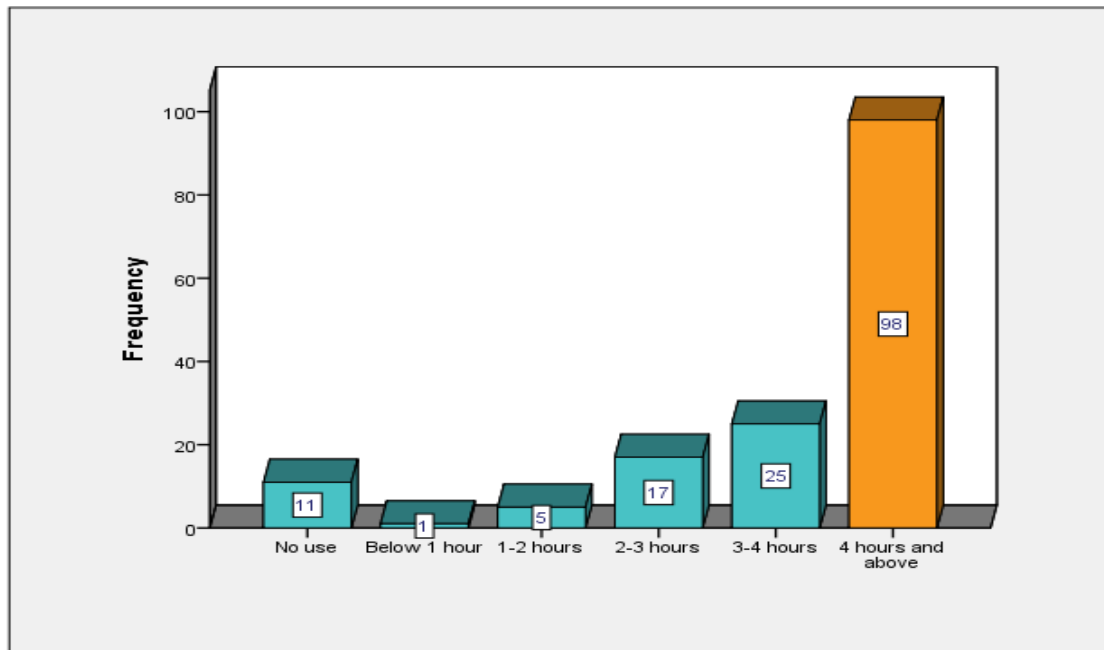
Figure 4-8 Daily average time spent on the internet

Figure: 4.5 above shows the "Daily average time spent on the internet" of the total respondents. As the tangerine color shows the highest of the time spent on the internet, 98 of the participants are using the internet for more than 4 hours and above.
The number of minutes that have been given to the students inside the campus is equal to or around 18000 minutes, 300 hours, monthly. The daily average of time given to students on the IUT campus 10 hours during the lockdown. 6000 minutes 100 hours in the normal school, the average daily of time given to students on the IUT campus 3.33 hours in the normal school. This study has been made during the lockdown in the pandemic.

4.5.2 Time spends on the internet for learning
Table 11 Daily Frequency of Time spends on the internet for learning

Daily average time spent on the Internet for learning.				
Items	Frequency	Percent	Valid Percent	Cumulative Percent
No time for study	6	3.8	3.8	3.8
Below 1 hour	6	3.8	3.8	7.6
1-2 hours	22	14.0	14.0	21.7
2-3 hours	36	22.9	22.9	44.6
3-4 hours	46	29.3	29.3	73.9
4 hours and above	41	26.1	26.1	100.0
Total	157	100.0	100.0	

Table 8 showed that the frequency of the daily average time spent on the internet for learning. The highest and accurate time that students use to spent time on the internet for learning is 3-4 hours, (29.3%) of the respondents. And that shows where students stand for spending time for learning.
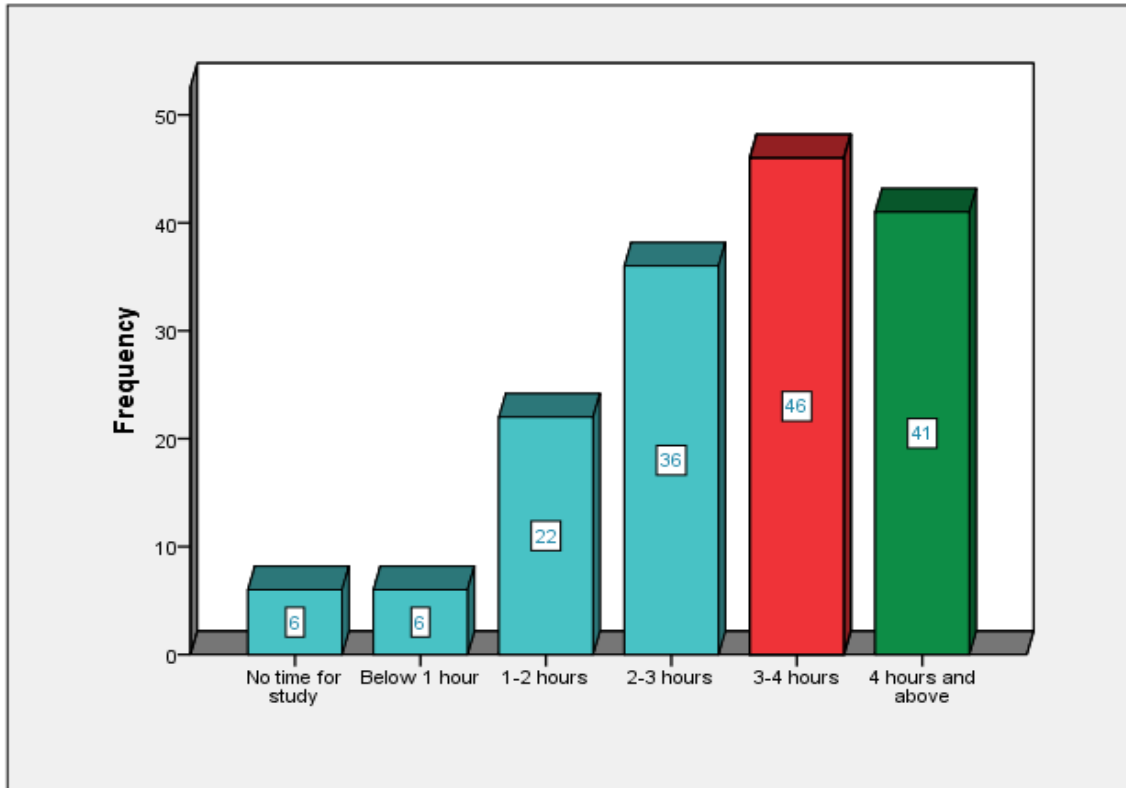
Figure 4-9 Daily average time spent on the internet for learning

Figure: 1.9 above shows the "Daily average time spent on the internet for learning" of the total respondents.

As the red color shows the highest of the time spent on the internet for learning, 46 of the participants are using the internet for learning for around 3-4 hours. And with that positions of student's use, the time that student in daily average time spent on the internet for learning is 3-4 hours for learning purpose

Chapter 5 Findings and Conclusion

5.1 Findings and Discussion

The findings presented the data collected from the survey students in real-time online. It provides a measure (pilot study) for the assessment of using the internet for learning. While no statistical significance was found concerning this assessment usage. The findings and results highlight the use of the internet for learning which are consistent with best practices. Finally, the findings and results reveal the processes these students were engaged in to learn about their experience and how they have.

It is imperative to note that; The Researcher used the following approaches together to draw a better interpretation of the results.

1. Mean and Standard deviations
2. The independent sample T-test
3. One-way AVONA
4. Cronbach's Alpha
5. Correlation

After reviewing and analyzing the quantitative data in line with the Research objectives from the study the following conclusions were made;

5.1.1 Objective One and Two: Perceptions and experiences

This study was conducted to explore the University students' perception of using the internet for learning. The mean scores for categorized items in the questionnaire had a score above 3 on a five-point scale which signified students' positive perception of using the internet for learning.

Positive perception of students obtained of the internet accepting in their learning is attributed to the efficiency of their experience as shown by the results of this study Table 4.

The positive relationships according to correlations Table 4.is in line with one study about online learning in which the results indicated that using the internet for learning is an alternative to traditional face-to-face education. The proportion of higher education students taking at least one online course now stands at 32 percent obtained by (Allen, I. E., & Seaman, J. 2013). However, sometimes it is still unclear whether students prefer traditional face-to-face classes or online learning.

There were no mark differences in gender, departments, level of study, year of students, and type of students in terms of using the internet for learning.

5.1.2 Objective three: Time spent

The time spent on internet browsing daily average is four hours and above. The researcher conducted this study during the pandemic of COVID-19, where students in lockdown browsing the internet for their learning. The time spent on the internet for learning daily average is three to

four hours as the highest responses were 46 of students responded of the total 157. The result of no use of the internet is no-response has been found as the survey were online form assessing the internet is inevitable.

1.1 Limitations and Future work

First of all, our samples are not representative, which may affect the generalization of the results. However, the significance can be easily overridden by widening the scope of the study. Extending this study to include a larger population and collect information on the appearances of the students will allow us to identify educational aspects that might underwrite to a better understanding of the differences in the use of the Internet in IUT and other universities in comparison.

The clarity of whether students prefer traditional face-to-face classes or using the internet for their learning process. Need to be examined to assess their perceptions of what they preferred.

A follow-up study is underway to explore some interesting questions that appeared during this research, such as:

- o Unclear whether students prefer traditional face-to-face classes or online learning.
- o Examination if frequent computer usage is beneficial to students' academic accomplishment.
- o Evaluating the effect of students' computer knowledge on their attitudes and perceptions toward using them for learning.
- o Explore motivational factors affecting students in taking elective and required courses in traditional, online, and blended approaches to instruction, along with students' computer experience related to satisfaction with online instruction.

1.2 Conclusion

Learning through using the internet is an alternative to traditional face-to-face education. The only fair results of this study may the value of incorporating the use of the internet for learning with a traditional course. This research was not about assessing the difference between online vs. face-to-face instruction; rather, this research is more about perceptions, experiences, and time spent on the internet for learning and how students react to it. Technologies with the availability of the internet have the potential to enrich the learning experience, to do more than what can be done in face-to-face or other approaches. The results from this study provide clues in how internet usage might be implemented to enhance learning in the 21st century, specifically as we work to engage students actively in learning, to provide real-world contexts for learning, and to promote critical thinking and deep learning. Further research may be done based on large sample size and qualitative data may be collected to justify the present research findings.

References:

1. Alexander, B. (2006). Web 2.0: A new wave of innovation for teaching and learning? Educause Review, March/April, 28–35.

2. Al-Fahad, F. N. (2009). Students' attitudes and perceptions towards the effectiveness of mobile learning at King Saud University, Saudi Arabia. Online Submission, 8(2).

3. Allen, I. E., Seaman, J. (2013). Changing Course: Ten Years of Tracking Online Education in the United States. Babson Survey Research Group & Sloan Consortium, Newburyport, MA.

4. Chaka, J. G., & Govender, I. (2017). Students' perceptions and readiness towards mobile learning in colleges of education: A Nigerian perspective. *South African Journal of Education, 37*(1).

5. Chen, N., Ko, H., Kinshuk, & Lin, T. (2005). A model for synchronous learning using the Internet. *Innovations in Education and Teaching International*, *42*(2), 181–194.

6. Coutinho, C. P. (2007). Infusing technology in pre service teacher education programs in Portugal: An experience with weblogs. In R. Craslen et al. (Eds.) Proceedings of the 18th International Conference of the Society for Information Technology and Teacher Education (pp. 2027-2034). Chesapeake: SITE.

7. Fullan, M. (1998). The meaning of Educational Change: A quarter of century of learning. In A. Hargreaves, A. Liebermen, M.

8. Hamid et al. (2015). Understanding students' perceptions of the benefits of online social networking use for teaching and learning. Internet and Higher Education, 26(7), 1-9.

9. Harada, V. (2003). From instruction to construction: Learning in the information age. In M. Fitzgerald, M. Orey, & R. Branch (Eds.) Educational Media and Technology Yearbook 2003 (pp. 40-48). Westport, CT: Libraries Unlimited.

10. Jones, S. (2002). The Internet goes to college: How students are living in the future with today's technology. Pew Internet & American Life Project. Retrieved April, 4, 2009, from http://www.pewinternet.org/Reports/2002/The-Internet-Goes-to- College.aspx.

11. Jones, S., Johnson-Yale, C., Millermaier, S., & Perez, F. S. (2008). Academic work, the Internet and US college students. Internet and Higher Education, 11, 165–177.

12. Lee, S. W. Y., & Tsai, C. C. (2011). Students' perceptions of collaboration, self-regulated learning, and information seeking in the context of Internet-based learning and traditional

learning. *Computers in Human Behavior*, *27*(2), 905–914. https://doi.org/10.1016/j.chb.2010.11.016

13. Liang Linmei and Liu Yonggui , (2009). "The network higher education in US: historical spanning from edge to half of total," in Distance Education in China, vol. 4, pp.75-78.

14. Thompson, J. (2007). Is Education 1.0 Ready for Web 2.0 Students? Journal of Online Education, 3(4). Retrieved on March 29, 2010, from http://www.innovateonline.info/index.php?view=article&id=393&action= article.

15. Tsai, C.C. (2005). Preferences toward Internet-based Learning Environments: High School Students' Perspectives for Science Learning. Educational Technology & Society, 8 (2), 203-213.

16. Briz-Ponce, L., Pereira, A., Carvalho, L., Juanes-Méndez, J. A., & García-Peñalvo, F. J. (2017). Learning with mobile technologies–Students' behavior. *Computers in Human behavior, 72*, 612-620.

The questionnaire used for the survey

Investigate students' perceptions of using the Internet for learning.

Dear Students,

I am Muaadh Abdulaziz, pursuing a Masters in Technical Education at the Islamic University of Technology, Dhaka Bangladesh. As part of my Master's thesis requirement, I therefore humbly request you to be one of the participants in this study titled: "Investigate Students perceptions of using the Internet for learning"

Any information you give here will be kept confidential and please note that your honest response and contribution will highly contribute positively towards the success of this study.

Thank you.

4.6 Part A

Please select the appropriate option for you.

Department:

1. Technical and vocational education.
2. Computer science and engineering
3. Electrical and electronics engineering
4. Business of Technology and Management
5. Civil and Environmental engineering
6. Mechanical and protections engineering

Academic level

◯ Postgraduate

◯ Undergraduate

◯ Diploma

Gender

◯ Female

◯ Male

Year of Study

◯   First Year

◯   Second Year

◯   Third Year

◯   Fourth Year

Part B: Questionnaire

The following rating scales give the weighted average of the opinion.
1. Strongly Disagree (SD)
2. Disagree (DA)
3. Neutral (N)
4. Agree (A)
5. Strongly Agree (SA)

4.7   Sections A: Perceptions

1.   Using the internet is appropriate for my learning style.

●   ●   ●   ●   ●

1.Strongly disagree 2. disagree   3. neutral   4. Agree   5. strongly agree

2.   Using the internet is appropriate for my learning.

●   ●   ●   ●   ●

1.Strongly disagree 2. disagree   3. neutral   4. Agree   5. strongly agree

3.   The internet can improve my learning efficiency.

●   ●   ●   ●   ●

1.Strongly disagree 2. disagree   3. neutral   4. Agree   5. strongly agree

4.   The internet can enhance my learning performance.

1.Strongly disagree   2. disagree   3. neutral   4. Agree   5. strongly agree

5. I find the internet is useful for my learning.

1.Strongly disagree   2. disagree   3. neutral   4. Agree   5. strongly agree

6. The internet provides complete learning information.

1.Strongly disagree   2. disagree   3. neutral   4. Agree   5. strongly agree

7. The internet provides information that is easy to comprehend.

1.Strongly disagree   2. disagree   3. neutral   4. Agree   5. strongly agree

8. I expect that I can become proficient in using the internet

1.Strongly disagree   2. disagree   3. neutral   4. Agree   5. strongly agree

9. I would feel confident that I can use the internet.

1.Strongly disagree 2. disagree   3. neutral   4. Agree   5. strongly agree

10. If I get to use the internet, I expect that will use the course websites.

1.Strongly disagree 2. disagree   3. neutral   4. Agree   5. strongly agree

11. If I get to use the internet, I intend to use the course websites.

1.Strongly disagree 2. disagree   3. neutral   4. Agree   5. strongly agree

12. Knowledge of internet usage is important for the working environment.

1.Strongly disagree 2. disagree   3. neutral   4. Agree   5. strongly agree

13. The internet makes life easier and more comfortable.

1.Strongly disagree 2. disagree   3. neutral   4. Agree   5. strongly agree

14. Learning to use the internet is crucial in education

1.Strongly disagree 2. disagree   3. neutral   4. Agree   5. strongly agree

15. If it was less expensive, I would use the internet more often

1.Strongly disagree 2. disagree   3. neutral   4. Agree   5. strongly agree

16. If I were taught, I would use the internet more often.

1.Strongly disagree 2. disagree   3. neutral   4. Agree   5. strongly agree

4.8 Sections B: Experiences

1. Using the internet is compatible with most of my learning.

1.Strongly disagree 2. disagree   3. neutral   4. Agree   5. strongly agree

2. The internet increases my learning output.

1.Strongly disagree 2. disagree   3. neutral   4. Agree   5. strongly agree

3. It is easy to operate the internet and I get it to do what I want it to do.

1.Strongly disagree 2. disagree   3. neutral   4. Agree   5. strongly agree

4. I find that the internet is very easy to use.

1.Strongly disagree 2. disagree   3. neutral   4. Agree   5. strongly agree

5. I find that the human interface of the internet is clear and ease to understand.

1.Strongly disagree 2. disagree   3. neutral   4. Agree   5. strongly agree

6. I find that interacting with the internet doesn't demand much care or attention.

1.Strongly disagree 2. disagree   3. neutral   4. Agree   5. strongly agree

7. The layout and user interface design of the internet is friendly.

1.Strongly disagree 2. disagree　　　　3. neutral　　　　4. Agree　　　　5. strongly agree

8. It is easy to navigate the internet.

1.Strongly disagree 2. disagree　　　　3. neutral　　　　4. Agree　　　　5. strongly agree

9. The internet provides the service I need.

1.Strongly disagree 2. disagree　　　　3. neutral　　　　4. Agree　　　　5. strongly agree

10. I feel comfortable in using the functions and services provided by the internet.

1.Strongly disagree 2. disagree　　　　3. neutral　　　　4. Agree　　　　5. strongly agree

11. I like trying technological novelties.

12. Internet leads to less face-to-face interaction.

⬤   ⬤   ⬤   ⬤   ⬤

1.Strongly disagree 2. disagree   3. neutral   4. Agree   5. strongly agree

13. My relationship with the internet is purely for practical reasons.

⬤   ⬤   ⬤   ⬤   ⬤

1.Strongly disagree 2. disagree   3. neutral   4. Agree   5. strongly agree

4.9   Sections C: Time Spent

Please select the average 'time period' normally you have spent on a daily basis for each of the statement below

Daily average time spent on the internet for learning

☐   4 hours and above

☐   3-4 hours

☐   2-3 hours

☐   1-2 hours

☐   Below 1 hour

☐   No use

Daily average time spent on the internet

- [ ] 4 hours and above
- [ ] 3-4 hours
- [ ] 2-3 hours
- [ ] 1-2 hours
- [ ] Below 1 hour
- [ ] No time for study

Table.   Time allocation of activities (Garbett chart)

Tasks/activities	Week-3, July 2019				Week-4, August 2019				Week.5, September 2019				Week-6, October 2019			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.Submitting research proposal	▮															
2.Preparation of survey	▬	▬	▬	▬												
3.Data collection time					▬	▬	▬	▬	▬	▬	▬					
4.Data Analysis								▬	▬	▬	▬					
5.Submitting 1st draft to an internal supervisor											▬	▬	▬			
6.Corrections/reviews														▬		
7.Submit final draft thesis to external supervisor															▬	
8.Final correction & submitting final thesis															▬	
9.Binding & submission																▬