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Students' Perceptions of E-Learning

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Abstract

The purpose of this thesis is to discover students' opinions of e-learning, which is an alternative to traditional classroom teaching and learning. The research was done because, with the advancement in technology there are tools provided to make e-learning possible, hence the need to know what students make of the idea of e-learning, as they are the target and the main beneficiaries of this technology enabled learning. The research data was collected at Ho Polytechnic, Ghana, with 80 questionnaires.

The results of the research show that majority of the students think e-learning is an innovative idea and must be encouraged, however, few concerns such as the fear of employers' discrimination against those who study through e-learning were discovered. It was also realised that hybrid learning, which is a combination of online learning and face-to-face learning, is the preferred mode of learning for the respondents.

The researcher recommends that as students prefer hybrid learning, educational institutions in Ghana should make more effort to invest in tools that make e-learning possible, and not to be opening satellite campuses all over the country as is currently the case.

Keywords: E-learning, mixed mode learning, blended learning, hybrid learning, online learning, opinions of e-learning, perception of e-learning, quantitative analysis, students' perception, technology acceptance model (TAM).

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List of Abbreviations

AT	Attitude Toward Using
BTech	Bachelor of Technology
DBS:	Diploma in Business Studies
E-learning:	Electronic Learning
HND:	Higher National Diploma
IT:	Information Technology
IU	Intention to Use
PEU:	Perceived Ease of Use
PU:	Perceived Usefulness
TAM:	Technology Acceptance Model

1. Introduction

This chapter of the research focuses on the background of the study, as well as providing an explanation of the aims and research questions. Furthermore, it covers the limitations of the research and finally, details of the structure of the thesis are presented.

1.1 Background to the Study

The advancement of Information Technology (IT) has impacted on how things are done, its influence on teaching and learning, thus becomes increasingly complex and widespread. The use of latest technology means that one no longer needs to be located in a conventional classroom in order to be educated. Teaching and learning can be done with the help of technology – e-learning. The term e-learning has been widely used in education since the mid-1990s. Some researchers view e-learning as the delivery of teaching materials via electronic media, such as internet, intranet, extranet, satellite broadcast, audio/video tape, interactive TV, and CD-ROM (Engelbrecht, 2005). Others also see e-learning as internet based learning which utilizes web-based communication, collaboration, knowledge transfer, and training to add value to individuals and to organizations they work within (Kelly & Bauer, 2004). This research, therefore, seeks to study students' perceptions on e-learning, as they are the main beneficiaries of this IT enabled learning, hence the need to know what they think of this mode of teaching and learning is paramount.

Quite a number of universities in countries such as Sweden, India and the United States of America (USA) have taken advantage of e-learning, where they offer some of their programmes to students all over the world. Thus, programmes of study are accessible to students who do not have to leave their home countries in order to embark on them. Examples of programmes offered wholly through e-learning are the MSc. Information Security (Luleå University of Technology, 2015), the Master's Programme in Information and Communication Technology for Development (Stockholm University, 2015); and MBA (Blekinge Institute of Technology, 2015). University of the People in the USA is another institution using IT to offer their programmes completely online. At the current time, this university offers Associate and Bachelor degree programmes in Business Administration and in Computer Science (University of the People, 2015).

There are IT platforms available that enable universities and other institutions all over the world to offer some of their programmes through e-learning. Examples of these platforms are: www.coursera.org and www.edx.org. Universities making use of these websites to offer their programmes include Nanjing University, Vanderbilt University, Australian National University, Cornell University, National Taiwan University and University of Tokyo (Coursera, 2015 and EdX, 2015).

As of January 2015, there are 97 educational institutions in Ghana offering diploma and degree programmes. This is made up of 15 public universities/professional institutions; 57 private tertiary institutions offering degree programmes; 3 chartered private tertiary institutions; 11 tutorial colleges; 10 polytechnics; and 1 regional institution – jointly owned by the West African countries (National Accreditation Board Ghana, 2015). These institutions run various programmes on their campuses. Some of these programmes are also run on what is termed a 'distance education model' where the students have face-to-face teaching outside the main campus of their university, situated at various designated locations across the country. In his 2014 matriculation address Prof. Ernest Aryeetey, the Vice

Chancellor of the University of Ghana, (the premier university of the country) made mention of the efforts that are being made to include e-learning in the distance learning programmes provided by this institution. He noted that “distance learning ... is an opportunity for applicants to earn a University of Ghana degree without leaving the comfort of their homes”. He further indicated the intention that the mode of delivery for distance learning will be a mix of e-learning and face to face interactions. Furthermore, the programmes will be run in the regions (at off campus locations) thus, participants can remain at their current post while pursuing their degree programmes (Aryeetey, 2014).

According to a recent study (Docebo, 2014), it appears that there is universal agreement that the worldwide e-learning market will show fast and significant growth over the next three years. It was further indicated that while the aggregate growth rate of e-learning is 7.6%, several world regions have higher growth rates - Asia is at 17.3%, followed by Eastern Europe 16.9%, Africa 15.2% and 14.6% in Latin America. According to this study the potential for enhancing e-learning in Africa, and for that matter Ghana, is high due to the fast-growing market for mobile devices. The increase in uptake of internet ready mobile devices denotes an expansion of access that will support the development of e-learning in this region (ibid).

As can be seen in the earlier mentioned matriculation speech (Aryeetey, 2014), efforts are being made to incorporate e-learning into Ghana’s educational system alongside traditional face-to-face learning. On the basis of the Docebo (2014) report, it can also be said that the potential for e-learning in Africa, and, for that matter Ghana, is high as the region places third in terms of the growth rate of e-learning in the world. It can be projected that very soon, programmes delivered entirely through e-learning platforms will be offered by educational institutions in Ghana, just as is currently the case in some other parts of the world - examples discussed above. In view of the rapid development and potential for development of e-learning, it is appropriate to undertake this study to know what students think of it.

1.2 Aims and Research Questions

The potential for e-learning is said to be high, moreover, it is gradually being introduced into some Ghanaian educational institutions. Furthermore, some students are already showing interest in participating in e-learning to further their studies, which has led students to seek out for e-learning opportunities provided by institutions based overseas. It is believed that, with time, more institutions will want to consider introducing e-learning as part of their education delivery systems in Ghana, as indicated in the matriculation address by the Vice Chancellor of the University of Ghana (Aryeetey, 2014). It is therefore timely and prudent to seek to understand how students think and feel about this medium of teaching and learning. This research, therefore, aims to analyse the perceptions of students about e-learning. In order to address the research aim, the following research questions are posed:

1. What are the perceived usefulness of e-learning among students?
2. How do students think e-learning tools are easy to use?
3. What is the attitude of students towards e-learning?
4. What is the intention of students to use e-learning in the future?
5. How are the views of e-learning expressed by the male and female students compare with each other?

The first research question seeks to get students understanding of e-learning, their views on its uses and how they think it can help them to acquire their educational qualifications.

Research question two focusses on getting to know how students are able to use or had experienced using or they think they can use the various technologies that enable and enhance e-learning. The purpose of the third research question is to find out how students feel about e-learning, whether or not they like the idea of e-learning, and what factors influence or will influence their decision to pursue education through e-learning or not. The fourth research question is to explore students' intention to use e-learning in the future, and which of the modes of e-learning they prefer. The last research question enables the researcher to compare the various responses received among the male and female respondents.

It is hoped that this research work will help to uncover and explain the concerns and opinions of students on e-learning; illuminating any expectations and experiences they might have had in their encounters with e-learning. It is the proposal of this research that the findings presented here will be of interest to any institution wishing to implement this mode of teaching and learning, assisting them in their consideration of such concerns and, in the process of making e-learning appealing to students.

1.3 Limitations of the Thesis

As the research was done in Ho Polytechnic, which is one of the educational institutions in Ghana it will not be appropriate to conclude, based on this research finding that the opinions expressed cover views of all students' body in the country. It should also be noted that the respondents used in this study were studying for their HND and other non-tertiary courses. These courses can be classified as associate degrees, hence it must be noted that the research did not cover the views of post graduate students. Additionally, at the time of carrying out this research, all the respondents were studying fully through the traditional classroom setting, since the institution was not offering courses by e-learning mode. Therefore, by the time a similar study might be done, if the institution had started using e-learning tools to augment their teaching and learning activities, the views expressed might not necessary be the same as found out in this study. Furthermore, the high response rate of 80% to the questionnaires returned could be due to the fact that the questionnaires were administered and retrieved by students, however, efforts were also made to get good representation of the views of all students, such that those who administered the questionnaires were well distributed at various locations of the campus and even to the various student hostels. It must also be borne in mind that majority (96%) of the respondents were between the ages of 19 and 29 years, as such this research finding must be seen as representing these age groups.

As there are different definitions of e-learning, three types (fully-online, hybrid/blended/mixed and web assisted) and also two forms (synchronous and asynchronous) of e-learning, it must be made clear that by the use of the term e-learning in this thesis it does not refer to any particular type or form, except where explicitly indicated. The term e-learning is used interchangeably to refer to any of the types and forms of e-learning discussed in this thesis.

1.4 Organization of the Thesis

The remainder of this thesis is organised into the following chapters – chapter 2 presents a review of the literature pertinent to the topic, including related studies. Chapter 3 gives details of the theoretical framework for the study. Chapters 4 and 5 give details of the methodology used and the analysis of the results of the fieldwork respectively. Chapter 6 includes discussion of the findings while chapter 7 gives the conclusion, recommendations and suggestion for further studies.

2. Literature Review

This chapter covers definitions of the term ‘e-learning’, it also includes discussion on three types of e-learning: fully-online, hybrid (also called mixed mode or blended) and web-assisted. Two forms of e-learning available - synchronous and asynchronous and their various tools that make them possible are also examined. This chapter also takes a look at the challenges and success factors of e-learning. Finally, there are discussion of previous studies relating to the topic.

2.1 Definitions of E-Learning

Electronic learning (e-learning for short) has been variedly defined by researchers, including the following - it is the use of computer network technology, primarily over or through the internet, to deliver information and instructions to individuals (Ong & Lai, 2006; Welsh et al., 2003). Another similar definition is one that sees e-learning as any form of education that is facilitated by the internet and its technologies, and encompasses the use of the World Wide Web (www) to support instruction and to deliver course content (Masrom, 2007).

The second set of definitions view e-learning as learning facilitated and supported through the utilization of information and communication technologies (Jenkins & Hanson, 2003). E-learning is further defined as instruction delivered via a computer that is intended to promote learning (Clark & Mayer, 2003).

Thirdly e-learning is defined as “the use of new multimedia technologies and the internet to improve the quality of learning by facilitating access to resources and services, as well as remote exchange and collaboration” (EC, 2001).

It can be deduced that the definitions were based on the medium of delivery that the authors are familiar with, for example, the authors that think e-learning is done through the internet their definition is concerned with that area. Similarly, the author that thinks e-learning is delivered through multi-media channels, the definition reflects this view - the first definition discussed above focused on internet learning (otherwise online learning), the second one on learning mediated through ICT or the computer, the third on multimedia technologies and the internet. It can be concluded from the above definitions that the first set of researchers’ view e-learning as the delivery of education, mediated through the internet (online learning). In the second set of definitions, e-learning is seen as learning which is achieved through the use of ICT and a computer. On the other hand, the third set of definition includes both the use of multimedia technologies and the internet in the definition. On the basis of these definitions outlined above, it is possible to conclude that e-learning provides an alternative to classroom/face-to-face learning. It can also be concluded that e-learning provides the means to augment classroom learning in order to acquire education or assist in the delivery of education, through various technological means – internet, multimedia technology and various other ICTs.

As the above definitions are limited to the medium and scope of the teaching and learning used, a broader definition that is not limited to any particular medium of delivery is sought. In this regard, e-learning is defined as the delivery of education through various electronic media, including the internet, intranets, extranets, satellite TV, video/audio tape, and/or CD ROM (Koohang & Harman, 2005). Another of such definition is that e-learning is the use of ICTs (e.g. internet, computer, telephone, radio, video, and others) in a manner that supports

teaching and learning activities (Masrom, 2007). From these definitions it can be argued that e-learning is a general or a broad term used to describe all types of learning that use one form or the other of electronic technology, including the internet as a medium of educational delivery to enhance teaching and learning. E-learning, can therefore, be said to offer the chance for teaching and learning which is used to overcome barriers associated with time, space or geographical location of the learner or the teacher. From the above definitions it can be concluded that compared to the face-to-face learning, e-learning gives students the chance to learn from institutions without necessarily being personally present in the same location, hence enables a larger number of people to be reached and educated.

2.2 Types of E-Learning

It has further been identified that, e-learning comes in three different types – fully-online, mixed mode (also known as hybrid or blended learning), and web assisted (Anastasiades & Retalis, 2001). In fully-online learning, there are no physical contacts between the learner and the instructor, everything is done fully-online through the use of internet and its technologies. Unlike in face-to-face learning which enables face-to-face interaction, between learners and with instructors, in fully-online, this is not the case. Learning materials, assignments, teaching and learning are all done online (Young, et al, 2008). Furthermore, unlike learning in the face-to-face mode which is mostly teacher-driven where the instructors teach on the subject area of their expertise, in fully-online mode, learning is self-directed and flexible in nature. Fully-online learning also aims at satisfying the needs, interests, learning styles, abilities, and aspirations of learners because it is self-directed (Buzzetto-More, 2013). Fully-online learning is [asynchronous](#) in nature, and asynchronous tools are used to foster this type of learning – this is discussed later in this chapter.

Hybrid learning, unlike fully-online learning, combines face-to-face meeting and interaction with online learning (Allen & Seaman, 2003). In this type of e-learning, some aspects of the teaching and learning are done online, while some portions are done face-to-face. For example, teaching and exams are done during the face-to-face meeting, while assignments and presentations are done online. Hybrid learning is said to be the future of learning, and is predicted that in the years to come this type of learning will cause a paradigm shift in higher education. It is further suggested that 80% to 90% of all courses will be done through hybrid learning (Allen & Seaman, 2003; Lorenzetti, 2005; Young, 2002). It can be argued that this type of learning when adopted will augment face-to-face learning and will also enable for courses of study that require practical exposures to be thought through this means.

Web-assisted mode is the last type of e-learning, and makes use of the [synchronous](#) tools, where course website and tools are used, in order to enhance teaching and learning. Web-assisted learning is operated much in the same as the fully-online class with the exception that it includes online discussions and interactions between the learners and the instructors. By the use of the synchronous tools live lectures and live interactions between the learners and instructors are done, just as is done in the traditional classroom, except that these interactions are not physical but are done online (Buzzetto-More, 2015). The main difference between fully online learning and web assisted learning is that web assisted is synchronous in nature and allows for live interaction, while fully online learning is asynchronous in nature and does not allow for live interaction. Furthermore, the difference between the web-assisted learning and hybrid learning is that, while both allow for interaction among participants and with instructors, hybrid learning has additional advantage for physical contact, however, in web-assisted there are no such physical meetings.

Among the types of e-learning, hybrid learning (mixed mode) is thought to be a better approach (Davis, 2000), as it combines elements of fully-online learning or web-assisted learning with the traditional classroom learning (Rubenstein, 2003; Ward & LaBranche, 2003). Furthermore, in the blended learning, students are allowed to read some of the course materials online prior to the face-to-face meeting, which allows the students to have a fair idea of the topic to be discussed in class (Smart & Cappel, 2006). It can be concluded from the above discussion that irrespective of the different understandings made of e-learning and its various types one thing is common to all of them – internet and technological tools are used for teaching and learning, with limited or no face-to-face interaction.

2.3 Forms of E-Learning

In addition to the types of e-learning available, it is further classified into two forms - synchronous and asynchronous learning.

2.3.1 Synchronous Learning and Its Technologies

This form of learning is done in real-time with an instructor facilitating live discussions and lectures with students in the learning process. Students ‘attending’ class can, in fact, be situated anywhere in the world. Participants log in at a set time and interact directly with the instructor and with the other class participants (Kalpana, 2010). This form of learning is facilitated by electronic media that are capable of engaging people in different locations at the same time. One of the major drawbacks of synchronous learning, however, is that it requires same-time participation; hence different time zones and conflicting schedules can create communication and presentational challenges (Obasa, 2010). To overcome the challenge of time differences, one must be familiar with time zone differences and keep abreast of the time differences in order to be able to meet deadlines and ‘attend’ classes.

The electronic media that are available in synchronous learning and that are used to create a full, rich learning experience along with a sense of community among participants include the following (Obasa et. al., 2013; McGreal & Elliott, 2004):

- a) **Audio conferencing:** this is real time discussion among participants or between participants and instructors. This medium helps to eliminate the need to pay huge sums of money for telephone calls. Electronic means, such as Skype and other voice over internet protocols can be employed to make audio conferencing possible. This approach enables voice discussion to be done among participants and the course instructors, just as is done in the normal classroom.
- b) **Chat:** this enables information sharing in text and graphics formats. It also helps students to ask questions and get real time feedback, during classes. With chat services, students do not have to wait for days before receiving a feedback to any questions they may ask through emails, rather, they are able to get immediate response as in conventional classroom learning.
- c) **Instant messaging:** these are short messages sent electronically from computer to computer. This format allows instantaneous messages to be delivered and contact is made between participants and instructors. Those who are online at the time a message is sent are able to give immediate feedback, however, those who are not online, will see the messages/message history and discussion when they next log in and will be able to provide feedback and add their input.

- d) **Video conferencing:** video conferencing enables real time interaction between instructors and participants, just as in the conventional classroom. With video conferencing, the student can see their instructors live, as in the conventional classroom. The ability to see one's instructor in 'real time' can engender a feeling of academic community and belonging.
- e) **Web conferencing:** this format allows instantaneous sharing of presentation, documents and application demonstrations. Web conferencing services allow students to make presentations on their work assignments to fellow students and course instructors just as in the conventional classroom setting.
- f) **White boarding:** white boarding emulates the process of writing or drawing on a blackboard as in the conventional classroom setting. Using a mouse - or an electronic stylus with a tablet - instructors can explain ideas and theories through the written word. This service allows students in different locations to participate actively and collaboratively with the teacher in order to discuss and brainstorm ideas in real time. The instructor also uses this approach to teach and explain issues to the students.
- g) **Application sharing:** participants have the ability to work on documents together at the same time, from different locations. With this facility, students can work in groups on assignments and presentations. Application sharing is achieved when a web document, such as Google doc, that works just as Microsoft Word is created, and editing rights are given to all people involved in the learning process, this enables them add ideas to the document. As such, assigned participants can add to and edit the documents that have been created. Application sharing allows students and other users to put their ideas together and come to consensus on the final outcome that is to be submitted.

The above tools allow instructors and students to experience 'real life' classroom activities, such as getting immediate feedback to questions and communicating with fellow students (from other parts of the world) in real time. By combining some of these available applications – for example, video conferencing, white boarding, and chat, instructors and students can experience conventional classroom activities. The only difference here is that there is no physical contact among participants (i.e. they do not share their learning space). However, since physical presence is not needed in synchronous learning, participants come from across the world and more participants are reached at the same time. On the other hand, as these processes are reliant upon technology, any failure in any one part of the technological framework can have a negative effect on the smooth running of the programme. In order to avoid such hitches, a backup plan is required to ensure the disruptive effects of technological failure is minimised. Both participants and course providers must make preparations to overcome both unforeseen and predicted challenges to ensure smooth running of the programmes.

2.3.2 Asynchronous Learning and Its Tools

This form of learning involves self-paced or self-contained learning and offers greater flexibility than the synchronous learning approach. This flexibility gives participants a variety of options, allowing them to learn at their own pace and in their own time (Kocur & Kosci, 2009). In contrast with synchronous learning (or a conventional classroom setting), this form of learning links participants to referenced materials instead of live, real time instructors (Kalpana, 2010).

Asynchronous learning provides the means for participants to readily access the available resources and information that they require in order to have an easier and a successful

learning experience. The tools that are employed in this form of learning include the following (Obasa et. al., 2013; McGreal & Elliott, 2004):

- a. **Databases:** these are repositories of teaching and learning resources, which are readily available for participants to access at any time. Databases can be organised and structured thus allowing for content management by course tutors/providers. This helps students who are not good at researching topics or who might not have time to do research themselves. A database provides access to readily available resources that the student can choose from for their studies.
- b. **Document libraries:** document libraries enable participants to track their learning and to keep abreast of how far they have progressed at any given point in time. As asynchronous learning is self-paced, students can potentially have very long breaks in their studies but, access to a document library service means that they will be able to 'pause' their study at a given point prior to easily resuming their work from the same point at a later date. This flexibility avoids the need to go over what has already been covered.
- c. **E-books:** electronic books are available to course participants. These e-books can be downloaded and read offline. E-books serve as a supplement to other teaching and learning activities. E-books are identical to the printed book but they are available electronically on computers and can be easily read anywhere and anytime. This format eliminates the need to carrying several books at any one time. Portions of an e-book can be highlighted, marked and notes made on pages just as can be done to a physical book.
- d. **Forums:** these enable easy collaboration and sharing of ideas among participants. The approach also provides the means for students to share problems and, to get feedback and assistance from fellow students and instructors.
- e. **Messaging (e-mail):** enables participants to share course materials among themselves. It also provides participants with an avenue of direct contact with others and with instructors. The only potential problem comprises the fact that immediate feedback is not assured, as is the case when learning through chats and face-to-face communications in the classroom.
- f. **Streaming audio:** audio streaming takes the form of pre-recorded lectures, interviews with experts or sound bites that are relevant to what is being studied. Audio materials are available and can be replayed several times by course students as and when needed. A potential advantage of audio streaming is that the student can replay any recording several times until he or she understands the message/learning outcomes that are being relayed.
- g. **Streaming video:** just like audio streaming, video streaming involves the streaming of videos of pre-recorded content that are relevant to the course of study. If the correct permissions are in place, videos can be downloaded and played several times until the student gains a full understanding of the material. This approach also enables instructors to make demonstrations of technical issues to the students with ease.
- h. **Web logs (Blogs):** web logs enable the dissemination of ideas and comment. Blogs are mostly used in the same way as one would use a notice board; i.e. to pass information and announcements to students. In an asynchronous learning scenario, the students would have to log into their accounts and view the web logs in order to review the information that had been posted.
- i. **Website links:** this approach creates a resource that directs users to additional resources on external web pages. Here, instead of documents being posted in the manner of an e-book, video streaming or audio streaming, the students are rather

directed to links in order that they might access and download the documents located there by themselves.

Asynchronous learning tools listed above help to accommodate participants from different time zones. This is particularly the case as learning activities are done in one's own time and at one's desired pace (Hrastinski, 2008). Unlike in the synchronous learning – where the student needs to be available at the same time as the instructors are ready to teach, students engaged in asynchronous learning study at their own schedule and this is the crucial difference between the two learning modes.

Through the use of both synchronous and asynchronous tools, learning is made possible by the help of ICT and without the physical presence of students/teachers in the same space. Furthermore, students are able to decide which of these approaches is best for them. Students for whom real time interaction with other students and course instructors is important could opt for synchronous learning. And, students who might not necessarily be interested in real time interactions, but just the acquisition of knowledge, might also opt for an asynchronous learning approach which enables them to study at their own pace, something which is not the case in the conventional classroom setting.

As there are different definitions, types and also forms of e-learning, it must be noted that by the use of the term e-learning in this thesis refers to teaching and learning that is mediated by the use of electronic technologies. It must further be noted that except where explicitly indicated, by the use of the term e-learning in this thesis it does not refer to any particular type or form, the term is used interchangeably to refer to any of the types and forms of e-learning discussed above.

2.4 Challenges and Success Factors of E-Learning

E-learning comes with its own challenges, for example, unlike in the face-to-face learning, when studying in an e-learning environment, especially where it is done as an independent self-study (fully-online) one requires a significant amount of discipline and motivation to be successful at it (Golladay et al., 2000; Serwatka 2003). This is because, as the learners study on their own and at their own pace, they may not be challenged to work harder like if it was a face-to-face learning where deadlines are to be met. This issue, however, can be better managed if the learners interact in a community of learners, as done in face-to-face learning – traditional classroom (Cole, et. al, 2004; Ryan, 2001). Motivation is another factor that enhances e-learners' performance and learning, this is because if students are motivated to learn for one reason or the other this encourages them to persist in the face of difficulty in order to attain their goals (McKeachie, 2002, p.19). The motivating factors that could compel students to press on to be successful at learning include their interest in the course and its content, and the perceived relevance of the course to them. For example, if the students have interest in the course content and believe it applies to them or their future aspirations – such as promotion at work or the chance to get new jobs upon completion or start their own companies, will indeed get them motivated to press on to be successful, despite the challenges they may encounter (Adler, et. al, 2001; Benbunan-Fich & Starr, 2003; Brass, 2002; Burke & Moore, 2003; Geiger & Cooper, 1996). In Ghana for example, the motivation that can compel one to press on to study, irrespective of the challenges they may encounter are the possibility to get promotion at work or to get better jobs. It is important to indicate that if the students perceive some benefits of their learning, be it personal interest in the course or an application of the course content or being able to understand and perform their

jobs better, as indicated in the examples given, they are likely be motivated to perform well, irrespective of the challenges they may face (Smart & Cappel, 2006).

E-learning has the following advantages – firstly, it gives the learner the flexibility and convenience to complete course materials where and when he or she desires, which means the learner can study from any part of the world, without necessarily having to be on the institution’s campus to be taught and to learn (McDonald, 1999-2000; “Elearning,” 2003). Secondly, e-learning has pedagogical advantages over traditional face-to-face, because it enables the use of multimedia tools as part of learning exercises, which enables the learner to apply concepts realistically. Thirdly, e-learning enables animations to be used to help demonstrate concepts and topics that are difficult to portray in traditional classes, which in turn, can facilitate a more accurate communication and understanding of complex ideas and topics which might not have been easily understood without these additional tools to make the teaching and learning an easier one (Smart & Cappel, 2006). As can be seen, e-learning has the potential to enhance teaching and learning compared to what can be achieved if this was done in the face-to-face only approach (McEwen, 1997).

Aside the advantages and usefulness e-learning provides, it also has some limitations. These include, firstly, asynchronous type of e-learning is not effective for delivering technical training programmes, for example to IT courses. This is because asynchronous learning does not enable real-time interaction with the instructor and other learners, and also does not allow students to have practical exposures on what they learn, for example, utilizing software and applying knowledge to problem solving, as part of their studies, as would have been the case if it was synchronous in nature (Laine, 2003; Smart & Cappel, 2006). Other disadvantages of e-learning include a sense of learner isolation where they have to study alone (fully-online) without having colleagues and instructors to interact with (Brown, 1996); the rest are – learner frustration, anxiety, and confusion as a result of learning on their own, which is mostly the case with the fully-online and asynchronous learning (Hara & Kling, 2000; Piccoli, et. al, 2001). There is also the need for greater discipline as there will not be anyone to tell the learners what to do and when to submit what assignment and reports. All the three types of e-learning require good writing skills as most if not all communications will be done online and in writing. E-learning, especially the fully-online one, also requires self-motivation, and the need for online users to make personal time commitment to study, as in most cases they study at their own pace, and do not have any strict deadlines to meet (Golladay, et. al, 2000; Serwatka, 2003). Additionally, with the latest development of mobile chat applications, it makes it even more easier for students to have a community of participants to discuss course related topics, during and after class sessions are over (Smart & Cappel, 2006).

2.5 Related Studies

Summaries of studies that relate to the focus of this thesis are presented here. A study was done of learners’ acceptance of e-learning in South Korea - concluded that perceived usefulness is the greatest predictor of intention to use e-learning. The study further revealed that perceived usefulness has a positive effect on the intention to use e-learning. Moreover, for learners to continue to use e-learning, it should be specifically designed and developed to deliver value to them (Lee et. al. 2009).

There was a study done at the University of Technology of Malaysia (UTM) City Campus, and evaluates the application of Technology Acceptance Model (TAM) to e-learning

(Masrom, 2007). Major finding and conclusions of this study are: there was an agreement with what TAM postulates that, perceived usefulness has significant influence on students' intention to use the technology. Furthermore, the study revealed that in order to foster individual intention to use a technology, positive perception of the technology's usefulness is crucial. The study also concludes that students' attitude towards using the technology may not be of equal importance.

There was a study on the effect of distance learner-perception of course material and access to learning for professional development. This was a case study compiled by the Centre for Continuing Education at the University of Cape Coast in Ghana. The aim of this study was to discover distance learners' perceptions of the learning materials they used both in terms of the contents and, in terms of design and usability. The study concluded that there was positive perception of the course materials in terms of its content, design and usability (Essel et. al, n.d.).

In a research at the Maryland State University to identify students' preference for the various e-learning types, it was reported that majority (51.1%) of the respondents preferred hybrid courses to traditional face-to-face courses, 25.9% were neutral on this, while 23% disagreed. This research further shows that majority of the respondents are interested in taking a fully online course in the future - 52.3% agree, 22.0% were neutral and 25.7% disagreed (Buzzetto-More, 2008).

Finally, another study that adopted the Technology Acceptance Model (TAM) as the theory, attempted to get students' perceptions of incorporating e-learning into teaching and learning at the University of Ghana. The results from the study indicated that students who entered the university with relatively good computer skills were able to participate in an e-learning. It was also concluded that male students were more likely to use the internet than female students, hence male students are more likely to engage with e-learning. Finally, it was realized that students preferred type of e-learning was web-supplemented courses and thus, in the immediate future students thought that mixed mode courses were a more attractive proposition than web dependent online-only courses (Tagoe, 2012).

3. Theoretical Framework

Technology Acceptance Model (TAM) is proposed by Davis (1989) and serves as the theory for this thesis, which seeks to explore students' perception of e-learning. In this chapter, therefore, the theory is discussed.

TAM is an empirically validated theoretical model and widely accepted to help explain and predict users' behaviour towards information technology acceptance and use (Legris, et. al, 2003). It also helps to explain why a user may accept or reject information technology (Davis, 1989 and Davis et. al, 1989). The model provides the basis with which one traces how external variables influence belief, attitude, and intention to use a technology. The two cognitive beliefs postulated in this model for the use of a technology are - perceived usefulness (PU) and perceived ease of use (PEU). The model further implies that these two beliefs influence directly or indirectly the user's attitude (AT) towards the technology and also affects the user's behavioural intention to use (IU) the technology, which also affects the final decision to use or not to use. It is also proposed in this model that external factors/variables influence perceived usefulness and perceived ease of use, and these affect the intention to use and actual usage of the technology (Davis et al., 1989). Figure 1 shows the original TAM (Davis, 1989).

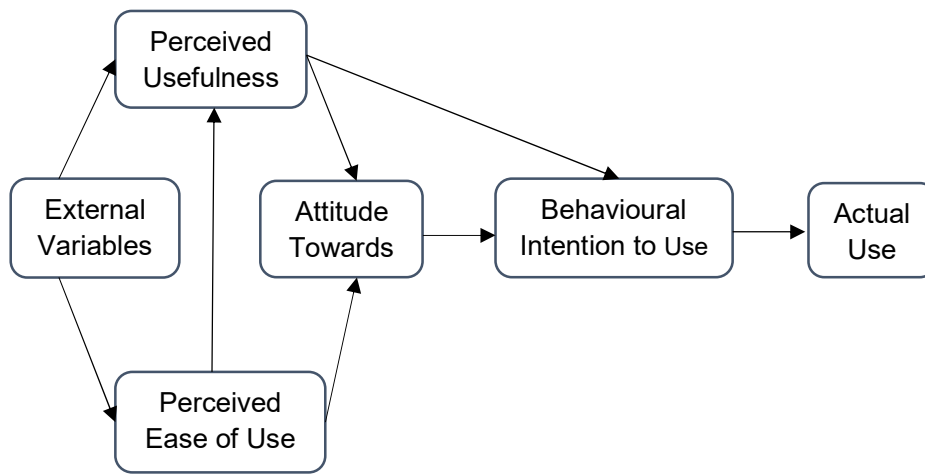


Figure 1: Original Technology Acceptance Model (TAM)

TAM is seen as a four stage process, which starts with perceived usefulness, then perceived ease of use which leads to attitude towards usage and later the behavioural intention to use (Davis, 1989). Perceived usefulness (PU) is defined as "the degree to which a person believes that using a particular system would enhance his or her performance" (Davis, 1989). PU is also defined as the extent to which a potential user views a technology as offering similar or better value in comparison to an alternative method of performing the same task (Davis et al., 1989). Applying PU to this research, the model helps to deduce how students perceive e-learning as giving them an alternative means to acquiring their educational knowledge. Perceived usefulness can, therefore, be defined as the extent to which students believe using e-learning will boost their learning (ibid). It must be noted that as all the students used in this thesis are studying fully on-campus, it makes them appropriate respondents to indicate and to deduce if they think e-learning is a good alternative for their studies or not, and how they feel towards it.

Perceived ease of use (PEU), in TAM refers to the degree to which a person believes using a particular technology will be easy to use without much effort (Davis et al., 1989). PEU is also seen as “the extent to which one believes using e-learning will be free of cognitive effort” (Park, 2009). As e-learning comes in various forms (hybrid, web-assisted and fully-online) and types (synchronous and asynchronous), in this thesis, therefore, the term e-learning refers to teaching and learning that is mediated by the use of electronic technologies. The term e-learning used in this thesis, does not refer to any particular type or form of e-learning, but rather used interchangeably to refer to any of the types and forms. Since technology usage is a paramount part of e-learning one requires a certain level of comfort with computer and web technologies in order to be able to participate fully in e-learning. Students, therefore, require sufficient knowledge of a variety of modern hardware and software applications so as to easily make use of the e-learning system (Lee & Witta, 2001). It is argued that lack of these required technical skills could be a source of anxiety and a barrier to e-learning, thereby impacting on how the students perceive e-learning to be (Loyd & Gressard, 1984; Cheurprakobkit et. al, 2002).

Furthermore, external factors are found to have influence on the perceived usefulness and perceived ease of use opinion one forms. These external variables include - publication of a research paper demonstrating the importance of e-learning; news report about the relevance of e-learning; finally, the views of influential family members and friends regarding e-learning. These variables, also affect the individual’s attitude towards the technology (Davis et al., 1989). Attitude towards (AT) usage in TAM is defined as the positive or negative feeling about a technology, based on perception or experience (Davis et al. 1989; Taylor & Todd 1995). Attitude is also said to be “the degree to which an individual evaluates and associates the target system with his or her job” (Davis, 1993). In this thesis, the model implies that attitude towards usage are the positive or the negative feeling of a student towards e-learning, that influences their reaction and behavioural intention to use e-learning (Ajzen & Fishbein, 2000). It is proposed in this model that user’s attitude towards the system greatly influences the usage intention and the actual usage. Lastly, it is assumed in TAM that if the perceive ease of use and perceived usefulness are positive or negative, the attitude towards using the e-learning will also be positive or otherwise (Al-Gahtani & King, 1999; Davis et al., 1989). It can be deduced from the model that if e-learning as a system is not easy to use, it will most likely be perceived as not useful, and vice versa. Similarly, e-learning’s usefulness and ease of use can lead to the attitude formation towards it, hence the behavioural intention to use or not to use e-learning (Davis, et al., 1989; Nov & Ye, 2008).

As the objective of this thesis is to examine the perception students have about e-learning, the following research questions, are therefore asked in order to achieve the research aim: what are the perceived usefulness of e-learning among students; how do students think e-learning tools are easy to use; what is the attitude of students towards e-learning; what is the intention of students to use e-learning in the future and lastly, how are the views of e-learning expressed by the male and female students compare with each other? TAM is found appropriate to use as the theory guiding the study, because it is noted to be a good model for researchers to use to get students perception of technology, in this case e-learning (Jung et. al., 2008). In this regard, thorough understanding of the model helps to analyse the perception about e-learning. Furthermore, TAM is empirically tested and supported for being robust in predicting technology perception and adoption in various contexts, including e-learning (Gao, 2005; McKinnon & Igonor, 2008; Park, 2009; Teo, 2009). The relevance of using TAM for this study is to examine students’ perception of e-learning that could contribute to their

acceptance of an emerging educational technology that is gaining universal agreement and predicted to show significant growth by the year 2017 (Docebo, 2014).

Furthermore, TAM is used in this study because of its predictive ability in previous studies involving students, including using it as a model to explain why people adopt and use e-learning (Kiraz & Ozdemir, 2006; Teo, 2009). These previous studies included an investigation on using TAM with web-based learning. These researchers used course website acceptance model (CWAM) and tested the relationships among perceived usefulness, perceived ease of use and intention to use with university students using the structural equation modelling techniques of the LISREL program. The study concludes that usefulness and ease of use were good determinants of the acceptance and use of a course website as an effective and efficient learning technology (Selim, 2003). In another study, it was concluded that there is a direct and significant influence ($\beta = 0.19$; $p < 0.001$) between behavioural intention and actual usage of the web-based learning environment (Yi & Hwang, 2003). One other study that made use of TAM tried to understand the past history of perceived ease of use (Venkatesh & Davis, 1996). The researchers concluded that computer self-efficacy acts as a basis for perceived ease of use in both before and after hands-on use. They further concluded that the objective usability was found to be a determinant of ease of use only after direct experience with a system (Park, 2009). Other researchers argued that self-efficacy of e-learning was found to have indirect effect on students' intentions through perceived ease of use (Grandon, et al., 2005).

4. Methodology

This chapter presents the methodology employed for the research and includes context description, questionnaire preparation, data collection and data analysis. The chapter also gives details of the validity, reliability and generalisation of the study.

4.1 Context Description

In order to get students perception of e-learning, this thesis was done at Ho Polytechnic. This institution is one of the ten government sponsored polytechnics in Ghana. Ho Polytechnic was chosen because the researcher for this thesis at the time of gathering this data was a part-time Assistant Lecturer at the institution, and this made it easy for him to gain necessary permission to undertake the research and distributed the questionnaires to the student respondents. The institution offers both tertiary and non-tertiary programmes. The tertiary programmes on offer are 3-year study programmes that lead to the award of a Higher National Diploma (HND). Polytechnics in Ghana began offering top-up programmes lasting between 1 to 2 years for HND graduates who are awarded a Bachelors of Technology (BTech) certificates upon completion. These are the two classes of tertiary programmes that the polytechnic offers. Non-tertiary courses are programmes of study ranging between one and two years in duration. After completing this course of study, the graduate is qualified to progress to HND level or opt for an alternative type of educational progression in another institution. Examples of the qualifications available through the non-tertiary programmes are Diploma in Business Studies (DBS) and Motor Vehicle Technician (MVT). The student population is about 4,150 comprising of 2,666 males and 1,484 females (Ho Polytechnic, 2013). All programmes offered in the institution are taught on campus. The HND students and the non-tertiary students were part of this research work. BTech students were not considered because these students are mostly completing their studies at the same time as engaging in paid employment and thus, they are not easily found on campus.

4.2 Questionnaire Preparation

The questionnaire has an introductory section providing information on the topic being researched and instructions for respondents filling the questionnaire was also included. In all, there were 21 questions. The questions were divided into five (5) parts, - personal information eliciting the respondents' background information. Information on the personal information were about the gender of the respondents; their age groups; whether they study HND or non-tertiary programmes. The rest are for them to indicate whether they are on study leave - that is been released from their places of work to come for further studies or they study full time or they are working partly and schooling at the same time. The last personal information is about the courses of study the respondents are engaged in. For easy analysis, the courses of study are grouped into four classes – first, Information Technology (IT) related courses, which in this thesis are those who study programmes that are IT related in a way, these are students studying the following programmes, Statistics/Math, Information Technology and finally Computer Science. Second classification is those studying Engineering programmes which include Electrical and Electronic Engineering, Agriculture Engineering, Mechanical Engineering and lastly Civil Engineering. The third is those doing Business related courses such as Accounting, Secretaryship and Management Studies, Supply Chain Management and lastly Marketing Management. The last of the four classification is Art and Design, which includes Fashion/Design and Industrial Art courses. The remaining sections of the questionnaire were based on the research questions and the TAM which is the

theory used for this thesis. These remaining parts comprised of four sections - perceived usefulness (PU) of e-learning; perceived ease of use (PEU) of e-learning; attitude towards (AT) using e-learning and, finally, intention to use (IU) e-learning in the future. The concluding section of the questionnaire thanked respondents for their participation.

Preliminary test was done of the first draft of the questionnaire with 5 randomly selected students. Testing was done to ascertain whether respondents were easily able to understand the questions and, to identify the necessity for any amendments to the format. Testing revealed that the respondents had difficulty in choosing from some of the multiple-choice answers that were available to them. For example, for some questions, the response options were: Strongly Agree; Agree; Disagree and Strongly Disagree, however, test respondents felt that none of these options comprised a satisfactory reflection of their viewpoint. In response to this finding the researcher amended the response options, adding a fifth value of 'undecided'. Further adjustments were made to other questions in the scheme, to make room for respondents who were undecided to enable them to clearly express this view. Other inputs from the testing were subsequently included in the final version of the questionnaire, for example a question was added to explore whether courses that require practicals exercises are possible to study by e-learning mode, another question was included to find out what respondents think about the costs associated with e-learning.

It must be made clear that as there are varied definitions, different types and forms of e-learning available, by the use of the term e-learning in the questionnaire it does not refer to any particular type or form of e-learning. The term e-learning is used interchangeably to refer to any of the types and forms of e-learning discussed.

4.3 Data Collection and Analysis

Questionnaires were used for the data collection because it was felt that this was the best way to ensure that the researcher was able to gather the opinions of as many students as possible in the time available. In all, 100 questionnaires were distributed, of these 80 were returned, representing 80% of response rate. It took about four weeks for the questionnaires to be distributed and collected. The questionnaires were hand delivered to students who were allocated to the various parts of the campus, including lecture halls and canteens, so as to make room for any student who was available on campus at the time to participate in the study. Furthermore, the questionnaires were also taken to randomly selected student residencies, in order to enable the opinions of those students who were not available on campus at the time the questionnaire was administered also to be included. The computerised data analysis software - SPSS was used for the descriptive data analysis and interpretation of the data. The SPSS having been installed on the laptop was formatted and the questionnaires were entered into the database created one after the other. The questionnaires used in the analysis were assigned a unique reference number that corresponds to the row number of the SPSS data sheet. This made it easy to keep track of the questionnaires throughout the process of the analysis, and for further verification if the need arises. To ensure accuracy, after all the questionnaires were entered there was a random selection of questionnaires and were cross checked with its corresponding data entered, errors found were corrected. After the data entry had been completed descriptive statistics were generated, presented and discussed. After analyses of each question on the questionnaire, there was a further exploration of these questions to address the various research questions. The analysis was guided by the four themes (perceived usefulness, perceived ease of use, attitude toward using and finally intention to use) under the TAM, which is the theory used for this research.

4.4 Validity, Reliability and Generalizability

Validity is the degree of accuracy with which a data collection method can be viewed, determining the extent to which the intended research aims were achieved, the robustness of any findings and, subsequently, any conclusions made on the basis of the findings (Saunders et al., 2009). The questionnaire used for the data collection at Ho Polytechnic was designed with the students in mind. Thus, questions were drafted in accessible language to ensure maximum understanding. Moreover, the preliminary testing of the questionnaire made it possible for necessary corrections to be made to ensure that the questionnaire was accessible and the available multiple choice answers allowed respondents to select an answer commensurate with their view. For example, respondents could indicate that they were “undecided” and refrain from selecting a multiple-choice answer to the close-ended questions that they were not sure of.

Reliability denotes the extent to which the methodology can be relied upon to produce the same results should it be repeated (Saunders et al., 2009). To achieve reliability, the questionnaire was framed in a clear way to avoid leading respondents or suggesting answers. Bias is an important threat to reliability (ibid) thus, to increase objectivity, the anonymity of the students who participated in the questionnaire was guaranteed.

As this research was done at Ho Polytechnic and the respondents were HND and non-tertiary students, it would not be appropriate to generalise the results as representative of the whole student body in Ghana. This is because HND and non-tertiary students can only be seen as associate degree students and the study does not give room to include the views of other student types, such as graduate students.

5. Findings

This chapter presents the finding from the questionnaires that were administered. In all, 100 questionnaires were distributed out of which 80 were returned. The questionnaire comprised 21 questions, these were divided into five sub-sections: personal information; perceived usefulness of e-learning; perceived ease of use of e-learning; attitude toward using e-learning and finally, intention to use e-learning.

5.1 Personal Information

The respondent cohort comprised 65% males and 35% females. This result shows that the ratio of the male and female respondents approximately matches the gender balance of students of Ho Polytechnic – of the total students' population of about 4,150, 64% are males (2,666) and 36% (1,484) are females (Ho Polytechnic, 2013). The data also indicates that 96% of the respondents belong to the 19-29 age group, 3% were between 30-39 years and 1% below 18 years. There were no respondents of 40 and above age group. By this 19-29 majority age group distribution, the research finding is likely to reflect their youthful views.

Respondents are reasonably distributed among the various year groups of study – first years 45%, second years 22% and third years 33%, thus, the data presented is representative of all student levels at the polytechnic. 92% of the participants were HND students and 8% were pursuing non-tertiary programs - this is also a fair reflection of the proportion of students who pursue tertiary courses in the institution, as compared to those who pursue non tertiary courses. Furthermore, 91% of respondents were full time students, while those on study leave (release from paid employment) were 5%. Those who work in addition to their studies accounted for 4% of the respondent group. 63% of the respondents were business students, and there is a fair representation from the other courses of study as well – Engineering 16%, IT 12% and Art/Design 11%. It can be concluded that there is a fair distribution of views from the various groupings of students in this thesis.

60% of respondents possess a personal computer while 40% do not. However, 51% of the respondents have been using a computer for between 1 and 5 years, 16% have been using computers for 6 to 10 years, 14% have used a computer for over 10 years. Also, 13% of the respondents have been using computers for less than a year and, 6% indicated they have never used a computer. It can be seen that majority (94%) of the students have had an experience using the PC.

5.2 Perceived Usefulness of E-Learning

5.2.1 Understanding of E-Learning

To get the understanding respondents make of e-learning, they were presented with the common features that were identified in the various definitions, forms and types of e-learning for them to choose from. The response shows that 48% of the respondents understand e-learning as online learning. The response further shows that 16% of the respondents believe e-learning means having live lectures over the internet. This can be likened to the earlier understanding of e-learning being online learning only, but this crop of respondents also believe in the possibility of [synchronous learning](#) which enables the instructor and students to have real-time interaction with each other over the internet, including live lectures (Kalpana, 2010). These answers are tabulated in the Table 1.

Table 1: Understanding of E-Learning by Gender

Gender	Description of e-learning						Total
	<i>Have no idea</i>	<i>Learning at own pace</i>	<i>Online learning</i>	<i>Watching pre-recorded videos</i>	<i>Having live lectures via the internet</i>	<i>All: learning at own pace, online learning, watching pre-recorded videos and live lectures</i>	
Female	18%	7%	46%	4%	18%	7%	100%
Male	6%	15%	50%	0%	14%	15%	100%
Average	12%	11%	48%	2%	16%	11%	100%

It can further be seen in the Table 1 that 11% of the respondents understand e-learning as learning that is undertaken at one's own pace. This is enabled by the use of [asynchronous](#) tools and is also one of the features of the [fully-online](#) type of e-learning. However, another 11% of the respondents understand e-learning as a general term that includes all the features given, that is allowing for synchronous and asynchronous learning. This group of respondents believe that e-learning is not only limited to online learning but also includes web-assisted type of e-learning or better still hybrid type of e-learning, as this response reflects features of these types of e-learning. There is however, a great disparity between the male and female respondents about this response. While only 7% of the total female respondents chose this description of e-learning, 15% of the total male respondents agree to this, more than double of the female response rate, however, this difference is not statistically significant. Additionally, the response, as shown in Table 1, indicates that 2% of the respondents also believe in the use of multimedia to enhance e-learning, as they understand e-learning to comprise of watching pre-recorded videos. This response can be likened to all the three types of e-learning (fully-online, web assisted and hybrid learning), which uses multi-media tools to enhance their teaching and learning. On the other hand, 12% of the respondents indicated that they had no idea of what e-learning means. Of this, more females (18% of the total female respondents) reported this as compared to their male (6% of the total male respondents) counterparts. From this response, it can be seen that majority (48%) of the respondents understand e-learning to be online learning. It can be deduced from this response that when the term e-learning is mentioned, majority of the respondents assume it to mean fully-online learning. This understanding of e-learning being fully-online learning is fairly distributed among the male and female respondents, this is because 46% of the total females who participated in this thesis believe e-learning means online learning. This understanding is similar to the male respondents as well - 50% of them also believe e-learning means online learning.

5.2.2 Features of E-learning

With regards to the features of e-learning, the feedback is presented in the Table 2. The response shows that 81% of respondents agree that e-learning platforms are appropriate for administering tests and assignments electronically, while 14% were undecided and 5% disagreed. It can also be seen that 79% of respondents agree that e-learning can enable

people to learn at their own pace and convenience, however, 11% disagree with this assertion and, 10% were neutral.

Table 2: Features of E-Learning

Features of e-learning	Agree	Undecided	Disagree	Total
Tests and assignments can be completed electronically	81%	14%	5%	100%
Students can learn at their own pace	79%	10%	11%	100%
People can study from anywhere in the world	78%	8%	14%	100%
Interaction between instructor and students is possible	55%	27%	18%	100%
Interaction among students is possible	47%	34%	19%	100%
Average	68%	19%	13%	100%

Furthermore, 78% of the respondents agree that e-learning allows participation of students located anywhere in the world, 14% disagree with this feature of e-learning and 8% were undecided on this feature. It can also be seen from the Table 2 that 55% of the respondents agree to the possibility of interaction between instructor and students, 27% were undecided and 18% disagree with this possibility. Lastly, the response concerning the possibility of interaction among students in e-learning shows that 47% of the respondents agree, 34% were undecided and 19% disagree.

There is a further exploration among the male and female respondents, to know what they think about the possibility of interaction among students who study through e-learning, just as interaction is done in the conventional classroom. The result of this comparison is shown in the Chi-Square Test result in Table 3 below.

Table 3: Gender and View on Interaction Among Students - Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	13.314 ^a	2	.001
Likelihood Ratio	13.754	2	.001
N of Valid Cases	80		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.25.

The Chi-Square Test result in Table 3 indicates that there is a significant association between gender and the thought of e-learning enabling interaction among students, $\chi^2(2, N = 80) = 13.31, p = .001$.

This comparison of views further shows that while higher proportions of the male respondents (62%) believe in the possibility of interaction among students, a higher proportion of the female respondents, on the other hand, were undecided (54%). Furthermore, 23% each of the female respondents agree and disagree to this possibility. 22% of the male respondents were undecided and 16% disagreed to this possibility. Details of this answer is shown in the Figure 2.

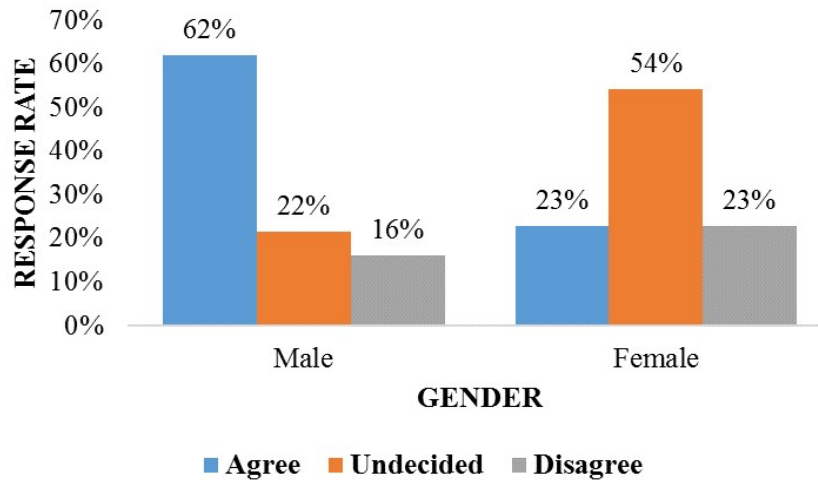


Figure 2: Comparison of the Possibility of Interaction Among Students by Gender

On the question of the possibility of live lectures in an e-learning platform, 72% of respondents believe that it is possible to have such a virtual link to enable this, while 28% do not believe that this is possible. On the other hand, 69% of respondents indicated that they know it is possible to give immediate feedback to questions asked when studying in an e-learning platform, however, 31% of respondents doubted this possibility.

The response on the usefulness of e-learning shows that 86% of respondents disagree with the assertion that e-learning is not useful, however, 14% indicated that they do not see any usefulness of e-learning. Respondents characterised the ‘usefulness’ of e-learning thus: increases learning effectiveness – 41%; helps to accomplish learning tasks more quickly – 32% and results in an improvement in course performance – 27%.

5.3 Perceived Ease of Use of E-Learning

Pertaining to the ease of use of e-learning, on average 50% agree that e-learning platform is easy to use (accessible). This is followed by 20% who were undecided as to the ease of use of e-learning systems. Furthermore, 13% expressed strong agreement that e-learning system is or could be easy to use. 10% disagree and 7% strongly disagree on the easy usage of e-learning systems. This distribution is shown in Table 4 below:

Table 4: Easy Usage of E-Learning Platform

Easy usage of e-learning platform	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	Total
User friendly	15%	10%	21%	40%	14%	100%
Easy to find information	5%	4%	19%	60%	12%	100%
Average	10%	7%	20%	50%	13%	100%

Concerning the level of comfort of using information technology (IT) tools that enable easy usage of e-learning system, on average, 52% of the respondents indicated that they are very comfortable using IT for various activities, while 32% indicated they could easily use IT for various functions. These reported easy uses are presented in the Table 5.

Table 5: Level of Comfort Using IT

Level of comfort using IT	Very easily	Easily	Undecided	Will try	I can't	Total
Attaching files	45%	39%	3%	7%	6%	100%
Chatting	58%	29%	5%	3%	5%	100%
Downloading	55%	26%	10%	6%	3%	100%
Posting messages	51%	35%	10%	4%	0%	100%
Average	52%	32%	7%	5%	4%	100%

It can also be reported from the Table 5 that on average, 7% of the respondents were undecided on their level of IT skills. On the other hand, 5% indicated that though they are not sure, they would try their best to make good use of IT. The remaining 4% on average indicated they would not be able to use IT for these functions.

5.4 Attitude Towards E-Learning

With regards to how respondents feel about e-learning, it can be reported that 80% like the idea of e-learning, 11% were undecided, and 9% disagree with the idea of e-learning. On the other hand, 79% believe that e-learning is an innovative concept and should be encouraged, 16% and 5% were undecided and disagree respectively. Additionally, 69% of respondents think e-learning platform will be fun to use, 16% disagree, while 15% were undecided on this issue. Details of this distribution is shown in the Table 6.

Table 6: Opinion of E-Learning

Opinion of e-learning	Agree	Disagree	Undecided	Total
Like the idea of e-learning	80%	9%	11%	100%
E-learning is an innovative concept and must be encouraged	79%	5%	16%	100%
E-learning platform will be fun to use	69%	16%	15%	100%
Average	76%	10%	14%	100%

5.4.1 Influence of External Factors on Attitude Formation Towards E-Learning

By the concept of TAM, perceived ease of use (PEU) and perceived usefulness (PU) influence the attitude people have towards e-learning, however, external factors are also identified to have impact on the attitude people form towards e-learning and their intention to use it (Davis et al., 1989). Questions were, therefore, asked to solicit information concerning how the following external factors could influence the attitude of respondents towards e-learning: a family member indicated to them that using e-learning is a good idea; someone close to them ever encouraged them to try using e-learning for studies; someone ever told them e-learning is a good experience; they were ever encouraged that e-learning is not difficult to use; and finally, they have heard/read positive media report about e-learning. The respondents were asked to indicate if these statements were true or false. The response to these statements are tabulated in Table 7.

Table 7: External Influences on Attitude Formation About E-Learning

External factors on attitude formation	Positive view	Negative view	Total
Encouragement from someone close	69%	31%	100%
Have heard that it a good experience	69%	31%	100%
From family	68%	32%	100%
Was told is not a difficult system to use	65%	35%	100%
Have heard positive news report about e-learning	61%	39%	100%
Average	66%	34%	100%

From the response in Table 7 69% of the respondents indicated that they were ever encouraged by someone close to them to try using e-learning. Another 69% indicated that someone ever used e-learning and had indicated to them that it is a positive experience. However, 31% each from the earlier mentioned two groups have not been exposed to any of these influences. Furthermore, 68% of respondents indicated that a family member had ever told them that e-learning is a good idea while 32% have not had any such experience. Similarly, 65% indicated they have ever been told that e-learning systems are easy to use, while 35% responded that they did not have this influence. Lastly, 61% of respondents said they had heard positive news reports about e-learning but 39% indicated the opposite view. It can further be seen in the Table 7 that for all of these factors, an average of 66% of the respondents indicated that they have had their opinion about e-learning positively influenced by these external factors, while 34% on average reported no to such influences. As can be seen in this response, majority of the respondents have had positive external influences about e-learning.

With regards to the non-suitability of e-learning for pursuing programs that have practical demonstrations, responses were as follows: 27% agree that e-learning is not a good medium to be used to deliver programmes that demand practical work; 25% strongly agree; however, 18% were undecided; 16% disagree, while 14% strongly disagree.

5.4.2 Opinion about Employers Acceptance of E-Learning Certificates

One of the main concerns about e-learning is the acceptability of the certificates and those who study through such medium being well accepted by employers and not discriminated against, in preference to face-to-face learning. In this regard, a question was asked to know what respondents think about this concern. The response to this question shows that 47% do not think they will be discriminated against, 20% were neutral while 33% indicated they think they will suffer from this discrimination. This response is further compared among the male and female respondents to see what they both think. The result is shown in the Table 8.

Table 8: Fear of Employers' Discrimination by Gender

Gender		Afraid of employers' discrimination against e-learning			Total
		Agree	Undecided	Disagree	
Male	Count	18	5	29	52
	% within Gender	35%	10%	55%	100%
Female	Count	8	11	9	28
	% within Gender	29%	39%	32%	100%
Total	Count	26	16	38	80
	% within Gender	33%	20%	47%	100%

As can be seen in the Table 8, 55% of the male respondents gave a clear indication that they don't think they would be discriminated against. 35% of the male respondents agree to this discrimination, while 10% were undecided. However, the female respondents gave the following responses on this issue, 39% of them were undecided, 32% were of the view that they will not be discriminated against and, 29% think they will suffer from this discrimination.

The Chi-square test of the relationship between gender and fear of employers' discrimination against e-learners was found to be statistically significant, $\chi^2 (2, N=80) = 10.35, p = .006$. This result is shown in the table 9.

Table 9: Fear of Employers' Discrimination by Gender - Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.354 ^a	2	.006
Likelihood Ratio	10.017	2	.007
N of Valid Cases	80		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.60.

5.4.3 Cost of E-Learning

71% of respondents are of the view that e-learning is costlier than classroom learning, while 16% also indicated that classroom learning is more expensive than e-learning. On the other hand, 13% of the respondents are of the view that both e-learning and classroom learning require equal monetary outlays by students, i.e. they cost the same in terms of fees.

A comparison is further made among the male and the female respondents to know what they think about the cost of e-learning and fully classroom learning, this comparison as shown in Figure 3.

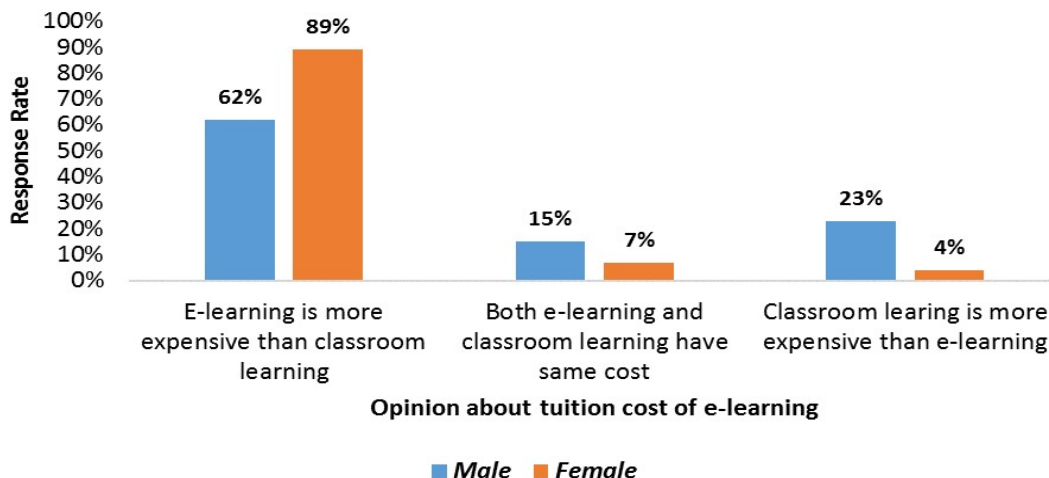


Figure 3: Opinion About Tuition Cost of E-Learning by Gender

The Figure 3 shows that majority of both the male (89%) and the female (62%) respondents agree that studying through e-learning is more expensive to pursue than studying in the

classroom. It can further be seen that more male (15%) respondents than the females (7%) respondents think e-learning and classroom learning are of the same cost. Similarly, more of the male (23%) respondents are of the view that classroom learning is more expensive than e-learning, as compared to what the female (4%) respondents think, the differences are not statistically significant.

5.5 Intention to Use E-Learning

When respondents were asked to indicate their intention to use e-learning as a method of studying and knowledge delivery in the future or not, 71% indicated that they would make use of e-learning opportunities in the future, 24% were undecided and 5% indicated they would not. Consequently, respondents were asked to indicate their preferred mode of learning, the answer to this question is presented in the Table 10.

Table 10: Choice of Learning Modes

Choice of learning modes	Responses
Hybrid (Mixed mode)	47%
Fully-online only	28%
Only classroom/face-to-face	25%
Total	100%

As shown in the above Table 10, 47% of the respondents prefer the mix mode of learning, which is also known as hybrid learning. 28% also prefer fully-online learning, while 25% prefer the classroom learning only.

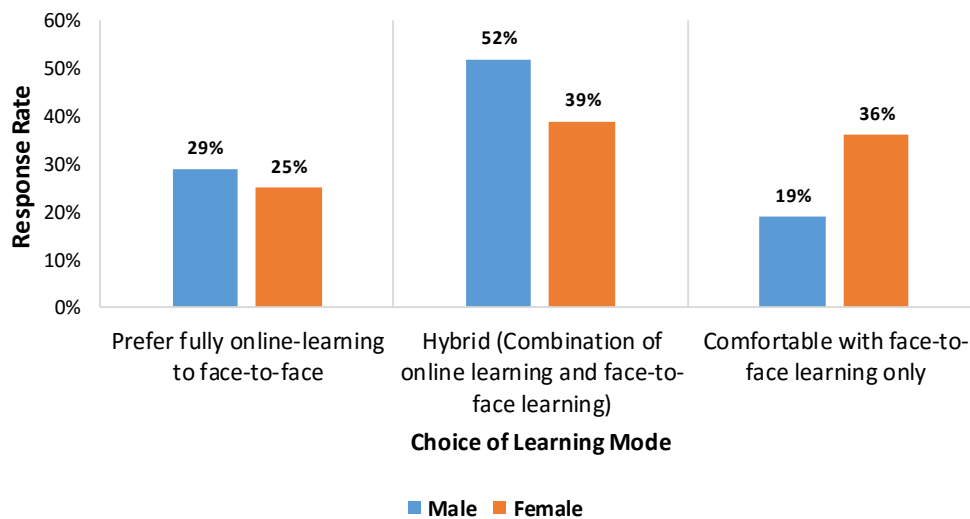


Figure 4: Choice of Learning Modes by Gender

From the research data as shown in Figure 4 it can be concluded that compared to the female respondents, more of the male respondents prefer fully online learning (29%) and hybrid learning (52%) than the females - 25% for fully online learning and 39% for hybrid learning. It can also be deduced from this response that though both the male and the female respondents have agreed on hybrid learning as their preferred mode to learn, when it comes to

classroom learning, more women are likely to continue their studies through classroom based learning only than their male counterparts. This is because the women show more preference (36%) for classroom learning only, as compared to the male (19%) respondents. However, this difference is not statistically significant.

5.6 Reasons for the Various Choices of Learning Modes

Below are the reasons given for the various choices of learning mode. The 47% of respondents that choose hybrid learning have given the following reasons for their choice:

- a) **Alternative to internet connectivity problems:** some of the respondents indicated that they prefer the hybrid approach because it gives an alternative to internet connectivity problems. One respondent noted *“sometimes, e-learning [online learning] may not be regular in terms of when there is no internet connection”* another respondent further explains this problem *“because the internet will be so bad that one page opens [in] like 10 hours”*. It can be deduced from these explanations that these respondents choose the hybrid form of e-learning because, in case the internet gives problem, they will still have the alternative to catch up with things they might missed out on in the physical classroom, while having the connectivity problem resolved.
- b) **Combination of online learning and classroom learning:** another view expressed is that the hybrid form of e-learning can enable combination of online learning with programmes that require practical exposures to be provided to students at the same time. One respondent said *“I prefer the combination...because courses [that] involve practicals, must not be [done] online, but no practicals is electronically welcome.”* Another respondent indicated that *“there are certain things that may not be understood using e-learning/online learning [alone] but with the help of face-to-face [classroom session], it will be [better] understood.”* Here, the respondents are of the view that a hybrid learning will provide the opportunity to augment lessons that have been taught through online learning in the physical classroom. In support of this assertion, a respondent indicated - *“even after e-learning [online learning], the teacher should be present physically to give examples and demonstrations for easy understanding.”*

Again, the 28% of respondents who prefer online learning only indicated the following as their reasons for this choice:

- a) **Learning at convenience:** some respondents are of the view that online learning will enable them to study at their own pace and at a time convenient for them - *“it will make me learn at my own convenience.”* Another reason given in support of this choice is *“...one learns at his/her own convenience, either at dawn or late in the night or even after work.”*
- b) **Experience:** a respondent also preferred online learning because she has an experience in studying through online learning, she noted that *“because I do that [learn] in USA at Grand Valley State University.”*
- c) **Comfortability experienced:** *“I will feel comfortable when using e-learning [online learning] than face-to-face.”* Reason deduced for the believe in online learning providing more comfort to study is that *“it is less stressful as compared to the normal classroom or campus affairs.”*
- d) **Easy communication:** another respondent indicated that *“e-learning [online learning] is faster and easy to use and communicate than face-to-face.”* In support of this easy

communication in online learning, another respondent indicated “...*some of the students feel shy when answering questions during [face-to-face] lectures.*”

Finally, the remaining 25% of the respondents prefer to continue their studies through classroom-tutored learning alone, as they already do. The following reasons were cited:

- a) **Practical exposures on things:** respondents were of the view that classroom-based learning is beneficial for courses that require practical exposure. The reasons given for this are “...*it is more practical and gives enough information and education on a particular course.*” Another respondent indicated that, “*I think I can get more practical demonstrations with face-to-face than the [with] e-learning.*”
- b) **Interaction:** some respondents also preferred classroom-based learning because they believe it provides the means for “*lecturers and students [to] can interact very well.*” They also believe that “*face-to-face is more interactive than e-learning.*” Additionally, another respondent said “*with face-to-face, I would get the chance to interact with the lecturer.*” It can be seen that this group of respondents do not believe in, or know of, synchronous form of e-learning where participants can interact with their peers and instructors instantly through the chatrooms.
- c) **No worry about technical issues:** other respondents are of the view that with face-to-face learning there is no need to worry about technical issues of slow or unresponsive internet, “*with the face-to-face you get feedback on time and there will be no technical issues such as slow link and the likes.*”
- d) **Identity of instructors:** one student observed that she preferred classroom-based learning, “*because I want to know the person teaching me, whether [or not] he is handsome, so that I can start some romantic moves.*” This respondent thinks in the face-to-face learning, she can have the chance to know who the instructor is in person.
- e) **Instant response to questions asked:** respondents are of the view that they choose classroom learning only because “*sometimes one needs to ask questions which demand right away answers.*”
- f) **Self-development:** respondents indicated that classroom learning gives them the chance to develop themselves, such that “*in terms of presentation [face-to-face] you will develop courage to talk in public or work centres.*” Another respondent explained that “...*for face-to-face, when you make a mistake in your speech they [teacher] will correct you.*”
- g) **Cost:** the respondent also believe that much money is not spent in classroom learning - “*it is easy to understand, also does not waste time and a lot of money.*”

6. Discussion

This thesis was set out to analyse the perceptions students' have about e-learning, as they are the main beneficiaries of this technology enabled learning. Perceptions were sought with regards to how students understand e-learning, their views on its uses and how they think it can help them to acquire their educational qualifications. The study also covers how respondents are able to use or had experienced using or they think they can use the various technologies and tools that enable students to successfully participate in e-learning. The perception also covers how students feel about e-learning, whether or not they like the idea of e-learning and what factors influence or will influence their decision to pursue further education through e-learning or not. The study also explored students' intention to use or not to use e-learning in the future, and which of the types of e-learning will be their preferred choice. The perceptions from the males and the female respondents on e-learning were also sought and compared with each other. In this chapter, therefore, discussion is made of the findings to the following five research questions:

- a. What are the perceived usefulness of e-learning among students?
- b. How do students think e-learning tools are easy to use?
- c. What is the attitude of students towards e-learning?
- d. What is the intention of students to use e-learning in the future?
- e. How are the views of e-learning expressed by the male and female students compare with each other?

6.1 What are the Perceived Usefulness of E-Learning Among Students?

In the scholarly literature, 3 different types (hybrid, web-assisted and fully online) and forms of e-learning - synchronous and asynchronous (Kalpana, 2010) were identified. These varied forms and types of e-learning are intertwined with one another, for example, web assisted type of e-learning can also be synchronous in nature, which will allow for interaction and live lectures to be delivered, or can be asynchronous, which allows for only self-paced learning. It can also be argued that because of their interconnectivity in nature, these types and forms of e-learning have similarities, for example, all the types and forms of e-learning make use of the internet as a medium of learning, for getting information and or teaching. It can also be said that, despite these similarities they also have unique features that distinguishes one type and form from the other, for example, hybrid type of e-learning enables participants to have a feel of both classroom learning at the same time online or web-assisted learning. In this regard, the research shows that respondents also demonstrated different understanding and opinions about e-learning, just as the various scholars have, as shown in the literature reviewed. This research further shows that most of the respondents understand e-learning to mean online learning. This supposes that when the term e-learning is mentioned, what comes to mind to these respondents is online learning. This understanding of e-learning being fully-online learning is fairly distributed among the male and female respondents as well - 46% of the total female respondents and 50% of the male respondents believe e-learning means online learning. Comparing this result to the definitions found for e-learning in scholarly literature, it can be deduced that this class of students' understanding reflects of some of the researchers' definition of e-learning – which is defined as the use of computers for educational purposes, this use mainly comprises internet usage (Ong & Lai, 2006, Welsh et al., 2003 and Masrom, 2007). As can be seen, to these scholars and students, e-learning is all about online learning.

This research also shows that e-learning is also understood as having live lectures over the internet. This view can be likened to the earlier understanding of e-learning being online learning, however, this crop of respondents also believes in the possibility of synchronous learning, which enables the instructor and students to have real-time interaction with each other over the internet, including live lectures (Kalpana, 2010). Another definition that supports this view is that e-learning is seen as comprising the use of multimedia technologies and the internet for learning, facilitated through access to resources and services, as well as remote exchange and collaboration (EC, 2001). This response can be said to mean that respondents also believe in the possibility of web-assisted type of e-learning, which uses multimedia tools to enhance teaching and learning. By the use of these multimedia tools they serve as a pedagogical advantage e-learning has over traditional face-to-face learning, because these tools can be used to help in demonstrating concepts and topics that are difficult to portray in the traditional classroom setting. This is because these tools turn to facilitate a more accurate understanding of complex ideas and topics which might not be easily understood without these multimedia tools (McEwen, 1997; Smart & Cappel, 2006).

This research further shows that e-learning is also understood as a term that includes both synchronous and asynchronous types of e-learning. This supposes that this group of respondents believe that e-learning is not only limited to online learning but is a general term that is used to describe all the three types of e-learning. The researcher is of the view that e-learning is a general term that is used to refer to teaching and learning that is done by the help of various technologies as a medium of educational delivery to enhance teaching and learning, breaching the gap of space and geographical location of the learner and the teacher. Going by this understanding of e-learning, students are able to learn from various institutions without necessarily being personally present in the same location as the institution offering the courses. From the discussions, it can be seen that e-learning is understood in different ways and forms, which is reflective of the various views researchers have indicated in the literature review, including the various types and the forms e-learning takes.

E-learning is regarded as having some pedagogical advantages over traditional face-to-face learning, which if used can enhance teaching and learning in a better way, as compared to what could be achieved if it was done in the traditional face-to-face learning only (McEwen, 1997; Smart & Cappel, 2006). These advantages and comfort e-learning provides over traditional classroom learning makes e-learners experience some level of convenience that is not necessarily the case if they were studying in the traditional face-to-face setting alone. In this thesis, respondents have vastly agreed to some of the conveniences e-learning provides as indicated by the scholars. To begin with, majority (86%) of the respondents agree that e-learning is useful. Among the reasons why e-learning is regarded to be useful is that it helps students to accomplish learning tasks more quickly and also increases learning effectiveness. This is because students can have easy access to course materials, which are provided in the forms of [e-books](#) and [website links](#). These give the convenience to the students to concentrate on their studies, without them going to a physical library to look for research materials and course books. In a study conducted at the University of Cape Coast also located in Ghana, concluded that learners had positive opinion of course content, design and the usefulness of hybrid learning (distance learning) they participated in at this institution (Essel et. al, n.d.). Comparing this thesis finding that e-learning is regarded as useful, with this University of Cape Coast study, it can be found that respondents in both studies have similar opinion of e-learning and its course contents been useful.

In addition to e-learning being regarded as useful, it also provides some conveniences and flexibilities for studying, which are not necessarily the case in face-to-face learning. Among the flexibilities e-learning provides is that it allows learners to study at their own pace and at their own time (Kocur & Kosci, 2009). This flexibility also gives the learners the convenience to pursue their programmes of study where and when they desire, in other words, the learners can study from any part of the world, without necessarily having to relocate to the institution's campus in order to get educated (McDonald, 1999-2000; "Elearning," 2003). The research result shows that majority of the respondents are aware and agree to these conveniences e-learning provide over classroom learning – 79% agree to learning at own pace and 78% agree to learning from anywhere in the world. Furthermore, majority (81%) of the respondents also believe that there are tools that will enable one to electronically submit test and assignments, without necessarily going to campus to submit such works. This understanding augments the belief that e-learning provides the means for people to study from anywhere in the world, because they can conveniently submit their assignments electronically. It can be deduced that if it comes to convenience, most of the respondents will opt to study by e-learning medium rather than classroom learning. In support of this, some of the respondents gave the following as part of their reasons for their choice of e-learning over classroom learning only: e-learning "*...will make me to learn at my own convenience*", another respondent has been very specific with this convenience and explained that e-learning "*...is [a] very easy way of learning, thus, one learns at his/her own convenience, either at dawn or late in the night or even after work.*"

It must, however, be mentioned that the flexibilities e-learning provide over classroom learning can sometimes become a challenge, for example, as learners study on their own and at their own pace they turn to feel isolated and lonely since they might not have colleagues and instructors to interact with (Brown, 1996). It must however, be explained that this issue of isolation and not being able to easily communicate is peculiar with the asynchronous forms of e-learning, such as fully online learning only, which does not make room for interaction among learners and with instructors. This challenge of not being able to interact real-time, can lead to frustration and anxiety among the learners, because of the isolation. It can be noted that this isolation is not the case when studying in the physical classroom setting. To overcome this challenge, the learners require a great deal of self-motivation to be successful at learning when it is asynchronous in nature (Golladay, et. al, 2000; Hara & Kling, 2000; Piccoli, et. al, 2001; Serwatka, 2003). Some of the motivational factors that can compel students to press on in self-study e-learning is the student focusing on what they may get at the end if they manage to finish their studies, such as promotion at work and the personal interest in the course of study (Geiger & Cooper, 1996; Adler, et. al, 2001; Brass, 2002; Benbunan-Fich & Starr, 2003; Burke & Moore, 2003; Smart & Cappel, 2006).

To overcome the issue of isolation and boredom when studying through e-learning, especially the asynchronous types, synchronous tools such as [audio conferencing](#), [chat](#), [instant messaging](#) and [video conferencing](#) are made available for use (Obasa et. al., 2013; McGreal & Elliott, 2004). By the use of these tools in synchronous forms of e-learning students are able to interact with their peers and instructors, which gives them the sense of belongingness as done in the face-to-face learning (Cole, et. al, 2004; Ryan, 2001). This research reveals that respondents have varied awareness of the synchronous nature of e-learning, which enables learning and communication to be done in real-time, just as it is done in the traditional classroom setting, by the help of the mentioned technologies and tools. Consequently, while a little over half (55%) of the respondents had indicated that they believe it is possible to have interaction between instructor and students when studying by

e-learning, the feedback about the possibility of students interacting among themselves were not very obvious because 47% agree, 34% were undecided, and 19% disagree to this possibility. This supposes that just a little over half of the respondent believe in the possibility of communication as done in the classroom when studying through e-learning. It must be mentioned that aside the synchronous tools provided to enhance communication, mobile chat applications, such as WhatsApp, Skype and Facebook are also available for use to enhance communication (Smart & Cappel, 2006). The research finding further revealed that majority (72%) of the respondents believe that synchronous form of e-learning makes it possible for live lectures to be given, just as is done in the classroom learning. Furthermore, most (69%) of the respondents also believe it is possible to get immediate feedback to questions, using synchronous tools for e-learning, just as done in the conventional classroom. It can be deduced from this discussion that there is a majority agreement among students that synchronous type of e-learning enables learners to experience some aspects of classroom learning, just as discussed earlier.

Perceived usefulness, which is the first consideration in technology acceptance model (TAM) is defined as the extent to which a potential user views the technology (i.e. e-learning) as offering similar value in comparison to an alternative method of performing the same task – i.e. classroom learning (Davis et al., 1989). From the above discussions, it can be concluded that majority of the students believe synchronous tools used in e-learning allows for them to get immediate feedback to questions asked, and also allows for interaction among students and with instructors, just as done in the face-to-face classroom. It is also realised from this discussion that students also agree that e-learning provides for some advantages over face-to-face learning, for example, students can study from any part of the world and at their own pace which is not the case in face-to-face learning. It can further be concluded from the discussion that the various forms and types of e-learning available offer similar advantages and functions just as is the case of the classroom learning.

6.2 How do Students Think E-Learning Tools Are Easy to Use?

As students perceive e-learning as an appropriate alternative to studying in the traditional classroom setting, by the principle of TAM, the next stage after the Perceived Usefulness (PU) is to consider how e-learning is perceived to be easy to use. Perceived ease of use (PEU) in this thesis, is defined as the degree to which a potential user views e-learning in terms of how easy it is to utilize (Davis et al., 1989). The PEU parameters used in this thesis are the perceived easy usage of e-learning platform and the level of comfort of using basic information technologies (IT) that enable one to have an easy usage of e-learning as a technology.

This thesis shows that e-learning platform is not only perceived to be easy to use but it is also thought to be user friendly, which enables one to easily use it in order to find needed information. It must be noted that the opinion of e-learning platform being easy to use alone is not sufficient to enable one to be successful at using e-learning platform. This is because the person also requires some level of comfort with using the computer and web technologies in order to make proper use of the tools available in the e-learning platform, as without these technological know-hows it becomes a hindrance for the user to easily participate in e-learning (Lee & Witta, 2001). For example, unlike in the face-to-face learning environment, where notice boards are used to pass on information and announcement to students, in e-learning, however, [web logs \(blogs\)](#) are used to pass on such information to them. Students are required to log in and view the web blogs in order to get the needed

announcement that is posted (Obasa et. al., 2013; McGreal & Elliott, 2004). Obviously, any student who does not have the technological knowledge and cannot easily log in and access the web blogs could miss very important information. The caveat, in this scenario, however, is that in the hybrid type of e-learning, students could be lucky to receive such information when they meet in the face-to-face sessions, and do not necessarily need to get such information from the web blog. Furthermore, in addition to students' ability to log into the learning platform to find needed information they must also have the technical know-how that enables them to manoeuvre their way in the e-learning platform to locate and use these additional resources, such as [website links](#), [e-books](#) and [forums](#). The researcher believes that the ability of students to use these resources is important because without them being able to easily locate and use them, they will not experience some of the pedagogical advantages e-learning provides over the conventional classroom, such as not having to travel long distances to libraries for research but can easily make use of these features which serve the same purposes.

This thesis further shows that respondents have the basic IT knowledge they require to easily participate in e-learning without much problem. This gives the assurance that the students will not experience any hitches as a result of lack of technical skills, which normally causes anxiety to users and becomes a barrier to e-learning (Loyd & Gressard, 1984; Churprakobkit et al, 2002). This is because on average, majority (84%) of the respondents have indicated their ability to perform with ease the basic IT functions that can enhance their e-learning experience, such as ability to attach files, to chat, download documents and be able to post messages. It must be noted that technologies such as [instant messaging](#) and [chats](#) are provided for e-learners to use to ensure easy interaction. Furthermore, [e-books](#), [streaming videos](#) and [streaming audios](#) are resources provided for e-learners to use in order to facilitate their studies (Obasa et. al., 2013; McGreal & Elliott, 2004). Just as this thesis shows that students have the basic skills to easily participate in e-learning, a similar study done at the University of Ghana which sought to ascertain students' perception of incorporating e-learning into teaching and learning at that university also concluded that students entered the university with relatively good computer skills which can enable them to participate in e-learning (Tagoe, 2012). Comparing this research finding to the thesis finding, it can be seen that though in this thesis the computer skills of the students at the time of entering the Polytechnic was not determined as was the case in the University of Ghana research, but rather the computer skills of the respondents at the time of carrying out this thesis, the findings were nonetheless similar. These two findings show that students have good technological skills that will enable them to engage in e-learning with ease. It can further be argued from these findings that generally, most students in Ghana have the basic computer skills that can enable them to participate in e-learning with ease, and they will not be hampered as a result of lack of technological skills.

6.3 What is the Attitude of Students Towards E-Learning?

In the technology acceptance model (TAM), attitude is defined as the positive or negative feeling about a technology (e-learning) which is based on perception or experience (Davis et al. 1989; Taylor & Todd 1995). It is also implied from the model that attitude towards usage are the positive or the negative feeling of a student towards e-learning, that influences their future reaction and behavioural intention to use e-learning (Ajzen & Fishbein, 2000). This attitude one adopts towards e-learning influences their behaviours towards e-learning. The adopted attitude also affects the person's reaction towards e-learning and also influences the intention of the person to use it in the future (Al-Gahtani & King, 1999; Davis et al., 2008).

By the principle of the TAM, if one has a positive opinion about e-learning, this will influence the person's attitude towards e-learning and this will further influence the decision the person takes to use e-learning in the future or not. As was seen in the findings, most of the respondents like the idea of e-learning, and they also think it is an innovative concept which should be encouraged as it is also seen as fun to use. The research confirms the TAM principle that e-learning is good and can largely be influenced by factors such as the perceived usefulness of e-learning and also the perceived ease of use capabilities e-learning provides. This shows that the impact of PEU and PU cannot be underestimated, this is because by the concept of TAM, perceived ease of use (PEU) and perceived usefulness (PU) influence the attitude people form towards e-learning (Davis et al., 1989).

Since the research finding shows that e-learning is largely understood to mean online learning, it further goes to show that e-learning is regarded as not appropriate to study courses that have practical components. Obviously, there are some programmes of study that require practical exposures as part of their learning processes, for example, in studying medical and nursing programmes the students are required to get hands on practical exposures in the hospitals in order to experience physically what they are studying. On the other hand, some programmes of study do not necessarily require such hands on exposures, for example, someone who is studying Business Management related programme, such as human resource management or someone studying Adult Learning course. As e-learning is seen as not appropriate to study courses that require practical exposures it can be argued that most students will not opt to study courses that have practical components through e-learning, especially the fully online one and the web-assisted one. It can be deduced from this, therefore, that students will rather prefer to study such courses through hybrid learning or through fully face-to-face learning rather than fully online or web assisted learning, since these types of learning allow face-to-face interaction and meetings where the practical exposures could take place. This finding is consistent with what other researchers indicated that e-learning is not appropriate to study practically oriented programmes because it does not allow students to have practical exposures on what they learn as part of their studies, as would have been the case if it was done in the physical classroom setting (Laine, 2003; Smart & Cappel, 2006). The researcher is of the view that institutions that want to offer practically oriented courses through e-learning, especially fully online learning and web-assisted types must have partners at advantage locations where the learners could go to have these practical exposures.

It must be noted that in Ghana, most people go for further studies in order to get employment or to get promotion at their present place of work. As seen earlier, e-learning is considered as a good idea and as an appropriate alternative means of education. The question, however, is will employers give equal preference to people who study through e-learning as those who study through the fully classroom learning mode. The researcher is of the view that this issue of e-learning certificate being accepted easily among employers is a major concern that must be addressed because though 47% of the respondents are not afraid of being discriminated against by employers, a substantial proportion of 33% of the students, however, have this fear, while the rest were undecided (20%). The researcher also believes that if this opinion is a reality, efforts must be made to identify what causes this discrimination and how this can better be addressed. The researcher, therefore, suggests that employers must be given education to know the advantages e-learning has over classroom learning and the similarities e-learning have in common with conventional classroom learning. Also, other employers who have employed people who studied through e-learning medium can be used to share their experiences on how these employees are performing at the work place, which can serve

as a mind changer to change the perception of employers who might actually have this apprehension about e-learning and it graduates, hence would not even want to give them a try when making employment decisions.

Furthermore, as majority of the respondents think it is more expensive to offer courses through e-learning than fully face-to-face learning, it can be deduced that if decisions about choice of learning mode were to be made based on cost most of the respondents will go for fully classroom learning than e-learning. The researcher believes this opinion could be held because of the believe that e-learning means online learning. The researcher also thinks that this opinion is held because in Ghana internet services are quite expensive to afford and since e-learning mostly involves the use of the internet and other electronic technologies, mainly to access educational resources and also to have live lectures, these become additional cost to be incurred by those who study through e-learning medium, which is not necessarily the case in the face-to-face learning. As can be seen in the above discussion, the research reveals both positive and negative views about e-learning, just as how attitude is defined in the TAM which is the positive or negative feeling about a technology (e-learning) based on perception or actual experience gotten over a period of time (Davis et al. 1989; Taylor & Todd 1995).

6.4 What is the Intention of Students to Use E-Learning in the Future?

This study turns to support the assertion that the rate of accepting e-learning worldwide is greatly increasing (Docebo, 2014) and Ghana is not left out of this e-learning acceptability. This is because, although all the students used in this thesis are studying through the conventional classroom setting only, most of them are willing to further their studies through e-learning in the future. Another study done at the Maryland State University also revealed that majority of the respondents are interested in taking fully online courses in the future and also they prefer hybrid learning to face-to-face learning (Buzzetto-More, 2008). This thesis further points out that fully classroom learning is the least preferred mode of learning for students, just as shown in the Maryland State University study. This is because, the first priority is hybrid form of e-learning, followed by fully online learning, and lastly fully classroom learning. This thesis finding is also in line with a similar study done at the University of Ghana (Tagoe, 2012) which also concludes that among the choices of study modes, students prefer the mixed mode (hybrid learning). These research findings are indicative that in the near future most students will be opting for more of e-learning modes of study than fully classroom learning. It can be deduced from these findings that indeed, students are willing to try one form or the other of e-learning in the future. The researcher is of the view that as these studies are pointing to the same finding - students' preference for e-learning (online learning and hybrid learning) this serves as a clear call for Ghanaian educational institutions (tertiary especially) and other educational bodies to as a matter of interest start augmenting their already existing face-to-face learning sessions with e-learning – be it hybrid, web assisted or fully online, as students preference is gradually shifting from the fully classroom learning to e-learning.

By the principle of TAM, perceived usefulness (PU) and perceived ease of use (PEU) are said to affect the attitude (be it negative or positive feelings) one forms towards e-learning. Furthermore, these PU and PEU are also said to influence people's decision to use e-learning or not to use it (Al-Gahtani & King, 1999; Davis et al., 2008). As had been seen earlier, there were positive responses on the usefulness e-learning provides, however, there were equally mixed responses on the attitude the respondents have towards e-learning. For example, a little over half (52%) of the respondents are of the view that e-learning is not a good means to

study courses that demand practical tasks. It was also realised that majority of the respondents would not opt to study by any form of e-learning if they were to make this decision based on cost as they believe that e-learning is more expensive than fully classroom learning. It can be deduced from this discussion that, indeed the decision about using e-learning in the future is highly influenced by PEU and PU, as indicated in the TAM principle. This is because despite the varied and negative attitudes displayed about e-learning when the final decision about using e-learning or not is made the choice is still settled on e-learning – hybrid and online learning over fully classroom learning. Furthermore, both those who were afraid of discrimination from employers if they should pursue courses of study through e-learning and those who do not have this opinion have the same preference for the choice of learning mode – hybrid learning. Interestingly, even those who were undecided about this discrimination also have preference for hybrid learning (44%) followed by fully face-to-face learning (37%) before fully online learning (19%). Comparing this thesis finding to a related study that made use of TAM to study learners' acceptance of e-learning in South Korea also concluded that PU has a positive effect and is the greatest predictor of intention to use e-learning (Lee et. al. 2009). In another study done at the University of Technology of Malaysia (UTM) and evaluates the application of TAM to e-learning also concludes that there is an agreement with what TAM postulates that PU has significant influence on students' intention to use the technology (Masrom, 2007). This thesis finding agrees with these mentioned similar studies on the basis that indeed PU is one of the major predictors of students' intention to use e-learning as postulated by TAM.

6.5 Comparison of the Male and Female Views About E-Learning?

In comparison to the females, more males are found to have positive views and support for e-learning than the female respondents. This is also reflected in the e-learning future usage intention of both genders – though both genders are likely to pursue further studies through hybrid learning, more of the men are likely to do this than the women. This finding is similar to those reported in the study done at the University of Ghana (Tagoe, 2012), which also concluded that male students are more likely to participate in e-learning than female students. Additionally, while most of the male respondents believe that employers will not discriminate against them if they pursued courses by e-learning, the females were rather undecided on this. The researcher is of the view that this issue of discrimination needs to be clarified, so that this uncertainty about employers' discrimination can be settled. This is important because, with this anxiety of discriminations, it could affect the acceptance and enrolment decisions of people, especially the females, if this decision would be made based on this acceptability issue. In further comparison, the female respondents again show unfavourable response towards e-learning than their male counterparts, this is because as the females are of the view that e-learning is more expensive to pursue than classroom learning, the male respondents, however, are also of the view that both e-learning and the classroom learning have the same cost. In an interesting twist, however, majority of the male respondents than the female ones are of the view that classroom learning is more expensive to pursue than e-learning. The researcher is of the opinion that more of the female respondents do not show much positive view and attitude about e-learning as their male counterparts, probably because they do not have much idea about e-learning as compared to their male counterparts. This is because, more of the female respondents (18%) had no idea of what e-learning means as compared to the male respondents (6%) – please refer to [Table 1](#). Based on this, the researcher is of the opinion that when more education and clarification on e-learning is done, it can influence people to like the concept of e-learning, especially the females.

7. Conclusion

This thesis was carried out to get the perception students have about e-learning. Perceptions were sought from students from the Ho Polytechnic, Ghana and the Technology Acceptance Model (TAM) was used as the theory for this thesis. This chapter, therefore, presents the conclusions, recommendations and suggestions for further research.

The main finding of this thesis is that e-learning is perceived to be useful. This usefulness includes people being able to study from anywhere in the world without necessarily relocating. This ability to study from anywhere in the world becomes an advantage e-learning provides over face-to-face learning because this is not possible in traditional face-to-face learning. This research further shows that students believe that when studying through e-learning there is the chance to experience substantially similar or an alternative means of being educated, as done in the physical classroom setting. For example, possibility to have live lectures via synchronous tools and being able to get immediate feedback to questions just as is done in the traditional classroom setting by the help of technological advancement.

It is also discovered in this research that e-learning platform and tools are perceived to be easy to use. The study further concludes that students have very good ability to make use of the various tools and technologies that enable one to participate in e-learning with ease. It is indicated that good technological background is needed for students to be successful at e-learning, because they need to have some level of comfort with using the computer and web technologies (Lee & Witta, 2001). Without the technological knowledge it becomes a hindrance for the students to easily participate in e-learning. This study, therefore, shows that most students have strong technological background that will enable them to easily make use of the e-learning tools that can enhance their e-learning experience without much hindrance.

Varied attitudes towards e-learning have been displayed in this study. These includes students liking the idea of e-learning and also considering it to be an innovative concept which needs to be encouraged and enhanced. The research also shows that most of the respondent's view e-learning as not an appropriate medium to study courses that have practical components, as it (fully online learning and web assisted types) does not allow for face-to-face interaction. This thesis also reveals e-learning is considered to be more expensive to pursue courses through than the traditional face-to-face learning.

It has also been discovered in this research that despite the fact that all the respondents are studying in the traditional classroom setting, most of them are willing to study through any of the e-learning modes in the future and not to continue their studies through the fully classroom learning as all of them presently do. To confirm this assertion, the research reveals that the preferred mode of studies for most students is hybrid learning (one of the types of e-learning) and not the fully classroom learning. The research further shows that in comparison, men have positive views about e-learning than women, and that men are more likely to pursue further studies through e-learning modes than the women. The researcher is of the view that as the choice of learning mode is gradually being shifted from fully classroom learning to e-learning, there should be a gradual preparation of both human resources and technological resources by educational institutions to welcome this gradual paradigm shift.

7.1 Recommendations

Since most, if not all educational institutions in Ghana offer their courses through face-to-face learning, efforts must be made by these institutions to get some of their teaching and learning activities done either through fully-online learning or web-assisted learning. This will make students to experience hybrid learning (combination of face-to-face learning and online/web-assisted learning), which is their preferred mode of learning as shown in this study. Furthermore, most of the educational institutions in Ghana that wants to get more students to pursue their courses are opening satellite campuses at various locations so as to enable people in those areas to get face-to-face learning. The researcher, however, thinks that resources should rather be apportioned to enable students and prospective students to benefit from e-learning, especially the hybrid type as they desire. The researcher also believes that, sooner or later, when issues such as internet connectivity problem, fear of employers' discrimination and the perceived high cost of e-learning are addressed, increasing numbers of students will opt for e-learning courses. In this regard, institutions in Ghana are urged to start investing in staff training and acquiring appropriate technologies which will enable them to offer some of their courses through e-learning in preference to the present enthusiasm for satellite campuses. The researcher also suggests that as students prefer hybrid learning, educational institutions can also collaborate with institutions already in possession of the technology necessary to offer e-learning courses. Students could then be offered e-learning courses delivered by international partner institutions and the face-to-face classroom-based content could be accessed on the institutions' campuses in Ghana.

7.2 Suggestion for Further Research

In order to further explore some of the findings of this study, the researcher suggests the following studies to be done:

- a. What are the opinion about employers on e-learning?
- b. Will employers give equal preference to e-learning graduates and classroom learning graduates when making employment decision, and what factors account for this?
- c. What are the preparations of educational institutions to welcome expected shift from classroom learning to electronic learning?

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12. Do you know you can ask questions and get immediate feedback when studying in e-learning, just as is done in the classroom? a. Yes b. No
13. Which of the following statements applies to you?
- I don't foresee any usefulness of e-learning. a. Agree b. Disagree
 - Studying through e-learning mode can increase my learning effectively, as I will have easy access to learning materials (e.g. reading documents and recorded videos)
 - Learning electronically can improve my course performance as I will not need to travel to campus, but study at the comfort of my home.
 - Using e-learning system can enable me to accomplish tasks more quickly, since I will move at my own pace.

C. Perceived Ease of Use of E-Learning

14. For each of the following statements, please tick the extent to which you disagree or agree:
- I believe e-learning platforms are user friendly. a. Strongly Disagree
b. Disagree c. Undecided d. Agree e. Strongly Agree
 - It would be easy for me to find necessary information when using an e-learning platform. a. Strongly Disagree b. Disagree c. Undecided d. Agree
e. Strongly Agree
15. Please indicate to what extent you can easily handle each of the following uses of the internet:
- Attach files to e-mails: a. Very Easily b. Easily c. Undecided
d. Will try e. I can't
 - Chatting: a. Very Easily b. Easily c. Undecided d. Will try e. I can't
 - Downloading: a. Very Easily b. Easily c. Undecided d. Will try e. I can't
 - To post messages: a. Very Easily b. Easily c. Undecided d. Will try e. I can't

D. Attitude Toward Using E-Learning

16. Please indicate whether you agree or disagree to the following statements:
- I like the idea of e-learning. a. Agree b. Disagree c. Undecided
 - I think e-learning is an innovative concept and must be encouraged. a. Agree
b. Disagree c. Undecided
 - I think e-learning platform will be fun to use. a. Agree b. Disagree c. Undecided
17. Which of the following influences about e-learning applies to you?
- A family member said they think using e-learning is a good idea. a. True b. Untrue
 - I was ever encouraged to try using e-learning for studies. a. True b. Untrue
 - Someone ever used e-learning and told me is a good experience. a. True b. Untrue
 - Somebody ever used e-learning and told me is difficult to use. a. True b. Untrue
 - Have seen a media publication that using e-learning for studies is good. a. True b. Untrue

18. For each of the following statements, please indicate to what level you agree or disagree to them:
- a) I don't believe e-learning is suitable for courses that need practical demonstrations.
 - a. Strongly Agree
 - b. Agree
 - c. Undecided
 - d. Disagree
 - e. Strongly Disagree
 - b) I am afraid employers will not give the same preference to e-learning graduates, as they will give to people who have conventional classroom learning.
 - a. Disagree
 - b. Undecided
 - c. Agree
19. In your opinion, what do you think about the tuition cost of e-learning?
- a. E-learning is more costive than classroom learning.
 - b. Both e-learning and classroom learning have the same cost.
 - c. Classroom learning is more expensive than e-learning.

E. Intention to Use E-Learning

20. I will use e-learning in the future for studies. a. Agree b. Undecided c. Disagree
21. Among the following choices, please indicate which one you prefer (please choose only one):
- a) I prefer fully-online learning to face-to-face
 - b) I like combination of online learning and face-to face learning (hybrid learning)
 - c) I am comfortable with the fully face-to-face than online learning
 - d) Please provide reason for your answer:
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Thank you for your time and may God bless you.