

UNIVERSITY FOR DEVELOPMENT STUDIES



**THE EFFECTIVENESS OF E-LEARNING IN TRAINING AND DEVELOPMENT
OF MIDWIVES IN GHANA HEALTH SERVICE, ASHANTI REGION**

By

BEN ADAMS OSMAN

UDS/MTD/0041/14

2017



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**THESIS SUBMITTED TO THE DEPARTMENT OF EDUCATIONAL
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DEVELOPMENT STUDIES, IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF MASTER OF PHILOSOPHY DEGREE
IN TRAINING AND DEVELOPMENT**

SEPTEMBER 2017



DECLARATION

CANDIDATE’S DECLARATION

“I hereby declare that this thesis is the results of my own original work and that no part of it has been presented for another degree in this university or elsewhere”.

Candidate’s Name	Candidate’s ID	Signature	Date
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SUPERVISOR’S DECLARATION

“I hereby declare that the preparation and presentation of the thesis was supervised in accordance with the guidelines on supervision of thesis laid down by the University for Development Studies”.

Doctor Issah Mohammed
Supervisor	Signature	Date



ABSTRACT

The purpose of this study was to investigate how e-learning in training and development of midwives in Ghana Health Service in Ashanti Region could be enhanced. The aim of the literature review was to review existing literature on the effectiveness of e-learning in training and development of workers in various organisations. The study adopted the mixed method of quantitative and qualitative research approaches. Quantitative research design used in this study was the survey and the qualitative research design used was the case study. The sampling techniques used included purposive sampling of fifty (50) midwives in the quantitative approach and in the case of the qualitative approach, purposive sampling technique was also used to select five (5) e-learning facilitators within the Health Service of Ashanti Region. Questionnaires were used to collect data from the fifty (50) midwives who participated in the study. Face-to-face in-depth individual interview was also used to gather in-depth information from the five (5) e-learning facilitators. The SPSS, version 20.0 was used to analyze the data collected from the midwives. The collected data from the interview was thematically analysed through the use of the manual method. Some of the findings are: e-learning educate midwives who are not able to attend a college or university due to geographical or time constraints, e-learning has a significant influence on the professional development of workers at the Health Service, e-learning has improved the attitude, skills and knowledge of the Health Service staff and has also helped to reduce the gap of knowledge or know-how between the midwifery and nursing. These are some of the recommendations: It was recommended that the Ghana Health Service in Ashanti Region should make all e-learning platforms accessible to vital information. The Ghana Health Service, managers and service providers should organise awareness programmes where



health workers are made to have positive attitudes towards e-learning and to receive all benefits offered by e-learning as a tool for learning.

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DEDICATION

This research work is dedicated to my dear wife, Shirley Akosua Abrafi, my dear parents, Ahmed Adams and Margaret Sarkodie and to all my siblings.



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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

According to Epignosis (2014), the term "e-learning" has only been in existence since 1999, when the word was first utilized at a CBT (Computer-Base Training) systems seminar. Other words also began to spring up in search of an accurate description such as “online learning” and “virtual learning”. However, the principles behind e-learning have been well documented throughout history, and there is even evidence which suggests that early forms of e-learning existed as far back as the 19th century.

The first e-learning systems were only set up to deliver information to students but as we entered the 1970's e-learning started to become more interactive. In Britain the Open University was keen to take advantage of e-learning. Their system of education has always been primarily focused on learning at a distance. In the past, course materials were delivered by post and correspondence with tutors was via mail. With the internet the Open University began to offer a wider range of interactive educational experiences as well as faster correspondence with students via email (Epignosis, 2014).

With the introduction of the computer and internet in the late 20th century, e-learning tools and delivery methods expanded. The first MAC (Media Access Control) in the 1980's enabled individuals to have computers in their homes, making it easier for them to learn about particular subjects and develop certain skill sets. Then, in the following decade, virtual learning environments began to truly thrive, with people gaining access to a wealth of online



information and e-learning opportunities (Epignosis, 2014). According to Epignosis (2014) by the early 1990's several schools had been set up that delivered courses online only, making the most of the internet and bringing education to people who wouldn't previously have been able to attend a college due to geographical or time constraints. Technological advancements also helped educational establishments reduce the costs of distance learning, a saving that would also be passed on to the students - helping bring education to a wider audience.

In the 2000's, businesses began using e-learning to train their employees. New and experienced workers alike now had the opportunity to improve upon their industry knowledge base and expand their skill sets. At home individuals were granted access to programmes that offered them the ability to earn online degrees and enrich their lives through expanded knowledge. The use of technology has become an integral component of education, work, communication, and entertainment. The internet is now ubiquitous and with internet penetration rates ranging between as low as 28.2% in Africa and up to 87.9% in North America (Internet World Stats, 2015). Any institution that does not embrace this technology will be seriously disadvantaged. As a matter of fact, not only the internet that is gaining popularity in education worldwide, all sorts of ICTs (Information Communication Technology) such as mobile technologies are also putting up robust momentum in the same field (Internet World Stats, 2015).

According to Hitlin and Rainie, (2005) technology is making a society increasingly interconnected in what many have come to call the "connected Age". A decade ago, access to technology was limited and wiring schools was one of the country's highest education



priorities along with expanded access has come a growing pervasiveness of technology in society. For a generation of young people, technology, particularly the internet, has assumed a substantial stake in their social and educational lives (Lenhart, Rainie & Lewis, 2002). New developments in the Web provide individuals with various opportunities of personalizing the tools and services, and performing self-directed learning in an open and social context with their personal learning environments (Klamma, et al., 2007). Learners can autonomously combine various tools, material and human resources into personal learning environments and enter with their personal environments to various learning activities and courses (Pata & Valjataga, 2007, Fiedler & Pata, 2009).

In near future fundamental transformations are predicted in enterprises. New post-industrial organizations will be disaggregated (Snyder, 2006) and not based on monolithic industrial knowledge-management systems. Rapid developments in economy and social sphere will extensively rely on design-orientated, information-rich small creative companies that work in a new flexible mode of producing cultural goods and services, and drive the innovation (Fasche, 2006).

The rapidly changing business and social environments require the development of constantly learning and creative, independent, responsible and autonomous people. With the increased use of social tools in learning and work processes, social shaping of these tools will become more democratic and dependent of people (Burns & Light, 2007). E-learning or computer and internet-based learning have been proved to exhibit numerous potential advantages over many traditional methods of learning. It is less expensive and faster to



deliver, promotes self-efficacy, provides good accessibility from anywhere and anytime, and gives students more control over their learning processes (Cantoni et al., 2004; Dewhurst and Williams, 1998; Smith & Rupp, 2004).

Fundamentally, corporate training is centered on knowledge transfer. For example, conferences and workshops are an essential yet expensive part of business and e-learning makes it affordable and efficient - sales people, for instance, can receive their training on new products and sales strategies online. E-learning can be translated to lower costs to deliver training in a shorter period of time, especially when employees are spread worldwide (Epignosis, 2014).

In the United States of America, Maureen and Delgado (2014) highlighted that, online advantages that appeal to many students based on online teaching and learning are flexible hours and access to resources not readily available in all geographic areas. Challenges to online learning require that students be self-directed and organized with good time management and writing skills in order to be successful. Educators experience some of the same advantages, and are challenged by continuously evolving technology and increased time commitments for course design and student communications. According to Maureen and Delgado (2014), the unique challenges for online programmes include finding qualified preceptors (experience registered nurse who is enthusiastic about the nursing profession) who can provide structure and guided direction for the experience in order to ensure and maintain consistency in the learning experience. The lack of preceptors is noted to be one reason nearly 30 percent of nursing programmes cite for turning away qualified applicants to their programmes.



According to Fasche (2006), the quality of employees and their productivity rate has significant influence on overall productivity of the business. If your employees are efficient in their work, your business will flourish remarkably. In order to increase efficiency and develop skills of the employees, it is essential that proper employees training must be conducted under the supervision of experienced professionals of the organisation. Training is an important means of increasing efficiency of your employees. Even, if you hire only experienced candidates in your organisation, you have to train them to make them work as per the standardized procedures of your organisation. Most of the organisations around the world invest significantly in development of the skills of their employees, so they can increase their overall revenues and profits.

According to Epignosis (2014), over the years, training methodologies have undergone many significant changes. Nowadays, employers desire to employ most advanced training methodologies for training of their employees as they prove to be more result oriented and cost effective. In this digital era, e-learning development is gaining huge popularity among both large and small sized organizations around the globe. E-learning development is a web based training system that helps to deliver a faster and consistent understanding of the training material. The general process of e-learning development includes analysis of technical learning requirements, scheduling meetings with subject matter experts, establishing learning goals, developing audio-visual storyboards and assessments and training aids.

With advancement in technology, developments of e-learning programmes have become much cost effective. As demand for e-training development is constantly rising, the number

of e-development companies has grown remarkably in the last decade. With simple online research, you will encounter many e-development companies in your city. You can make fair decision by comparing services of different service providers in terms of price, project and length. In the present era of globalisation, e-learning development has emerged as requirement of most of the global organizations. E-development tends to cut down total cost of the training on the one hand, it also increases overall productivity of the business in the global environment at much faster pace, on the other hand (Epignosis, 2014).

E-learning is particularly beneficial to an organisation operating in a marketplace where there is constant change. E-learning enables product development and sales training departments to create and deliver training quickly and without regard to distance. E-learning can also be used as just -in-time training; for example, as a refresher or knowledge database that can be accessed just before making a sales call. And e-learning material can be updated and made instantly available to your audience with the click of a mouse, without the time and costs associated with reprinting and distributing hard copies of manuals, sales education materials, CD-ROMs, etc. E-learning can also be used to educate your channel partners and suppliers about your business and products, providing the same cost and time savings, decreased time-to-market and increased revenue (Skillspark e-learning, 2016).

According to Adewole-Odeshi (2014), students learning in tertiary institutions all over the world have undergone tremendous transformation, especially since the advent of information and communication technology. There is a shift from traditional approach of teacher directed to modern methods where computer technology plays a significant role. ICT



has promoted learning and made it more meaningful, where students can stay even in their homes or Classrooms and receive lectures without seeing the lecturer. The aspect of ICT that has brought about this revolution in students' learning is e-learning.

According to Zand and Omidian (2011), the trend of using e-learning as learning and/or teaching tool is now rapidly expanding into education. E-learning covers a wide set of ICT technology based applications and processes, including computer-based learning, web-based learning, virtual classrooms, and digital collaboration and networking.

According to Zand and Omidian (2011), distance education operations have evolved through the following four generations: first, the correspondence model based on print technology; second, the multi-media model based on print, audio and video technologies; third, the Tele learning model, based on applications technologies to provide opportunities for synchronous communication; and fourth, the Flexible Learning Model, based on online delivery via the Internet. The fifth generation of distance education is essentially a derivation of the fourth generations, which aims to capitalize on the features of the Internet and the web. Some other researchers believed that distance education after the revolution of the information communication technology changing to various models step by step and ranging from correspondence study to virtual learning.

1.2 STATEMENT OF THE PROBLEM

Over the years, e-learning has become part of training and development in some Ghanaian organizations. According to Secor (2013), more and more organizations are using e-learning technologies to deliver training. A recent survey of CPI (Cycles Per Instruction) Certified



Instructors indicated that the reasons they chose to use CPI's Nonviolent Crisis Intervention hybrid training (an e-learning delivery option) varied by organization, but often related to factors such as cost effectiveness, scheduling flexibility, ability to disseminate training to geographically dispersed audiences, reduction in classroom time, and participant convenience.

Until recently, Self-paced e-learning products were only in high demand in developed economies. Due to the rapid adoption of e-learning now taking place in developing economies and the explosion in the number of new suppliers, it is now possible to see the contours of a global e-learning ecosystem. The suppliers competing in all 120 of the countries analysed in this report are now part of an international supply chain (Ambient Insight Research, 2016). In related study undertaken by Kibinkiri (2014) on the topic the role of e-learning on the professional development of student-teachers in Cameroon, revealed that asynchronous e-learning has a significant influence on the professional development of student-teachers. However, the study could not come out with any findings on synchronous e-learning.

E-Learning is increasingly recognized as an efficient method of delivering learning, the effectiveness of this (e-learning in training and development) of midwives in Ghana Health Service in Kumasi of the Ashanti Region is what stakeholders have doubt about.

Stakeholders have doubt about attitude of midwives to computer, internet quality and usage and e-learning module flexibility. This work therefore seeks to assess how e-learning would enhance training and development of midwives in Ghana Health Service in Kumasi of the



Ashanti Region. Because the use of e-learning for training and development has not been in existence for a long time, additional research is necessary for management, trainers and trainees to have a basis from which to select the appropriate methods of training for their workforce. The questions to be answered for management, trainers and trainees to make well-informed training and development decisions include: How do organisations use e-learning and why are they using it? What attitude does staff have towards e-learning as a tool in training? How can e-learning be made effective and engaging for delivering professional development to staff?

Therefore, the main question is: How could e-learning be enhanced as part of training and development in Ghana Health Service of the Ashanti Region.

1.3 OBJECTIVES OF THE STUDY

The following specific objectives were addressed in this study.

- i. To assess how the use of e-learning impact on the professional development of staff at the Ghana Health Service in Ashanti Region.
- ii. To assess the attitudes of staff at Ghana Health Service in Ashanti Region towards e-learning as a learning tool.
- iii. To evaluate the challenges that hinder the effective utilization of e-learning as a learning tool at the Ghana Health Service in Ashanti Region.
- iv. To determine how e-learning can be made effective to enhance the professional development of staff at the Ghana Health Service in Ashanti Region.



1.4 SIGNIFICANCE OF THE STUDY

It is hoped that the findings from this study will be of invaluable help to management, trainers and trainees in Ghana as a whole. It is also expected that the study will help management to become aware of the effectiveness of e-learning as part of training and development and be guided by the suggested solutions which will help them in training their workforce. Furthermore, other non-government and government organizations will also benefit immensely from this study. That is, non-government and government organizations will be in a better position to design e-learning based training courses for their workforce.

This research study seeks to justify four main significances of the study. First, the research findings could provide insight into how the use of e-learning impact on the professional development of staff at the Ghana Health Service in Ashanti Region.

Second, this research outcome would provide insight into attitudes of staff at Ghana Health Service in the Ashanti Region show towards e-learning as a learning tool.

Third, this research results could inform trainers and trainees on the challenges to effective utilization of e-learning as a learning tool at the Ghana Health Service in Ashanti Region.

Fourth, this research results could guide management and trainers on how e-learning can be made effective to enhance the professional development of staff at the Ghana Health Service in Ashanti Region.



1.5 DELIMITATIONS OF THE STUDY

This study assessed the effectiveness of e-learning in training and development using the Ghana Health Service midwives (some selected midwives from municipals and districts hospitals) in Ashanti Region. No other region's health workers were used to collect data in this study.

1.6 ORGANSATION OF THE STUDY

This study is divided into five chapters: Chapter one will focus on the following: The background of the study, statement of the problem, objectives of the study, significance of the study, delimitations and definitions of terms. Chapter two will be the literature review concerning the effectiveness of e-learning in training and development. Chapter three will focus on the research design and methodology and this will includes: the research methodology, the research design, the population and sample, the research instrument, the data collection procedure, data analysis, ethical considerations, validity and reliability. Chapter four will present the analysis, interpretation and discussion of the findings. Chapter five will present the summary of the study, the conclusions, limitations or shortcoming of the study and recommendations of the study. The chapter also will present the suggestions for further research.



1.7 CONCLUSION

This chapter has presented and discussed each of the following: the background to the study, statement of the problem, objectives of the study, significance of the study, delimitations and organization of the study.

The next chapter is chapter two; that chapter will present the review of literature relevant to the effectiveness of e-learning in training and development workers.



CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter will review existing literature on the effectiveness of e-learning in training and development of workers in various organisations. This chapter will also present and discuss each of the following: conceptualisation of e-learning, benefits of e-learning in organisations, attitudes of staff towards e-learning as a learning tool, challenges to effective utilization of e-learning as a learning tool, mechanisms and ways of implementing e-learning for the realisation of staff professional development and conclusion.

2.2 CONCEPTUALISATION OF E-LEARNING

E-learning is multi-dimensional and dynamic, changing according to context, circumstances and interest. As a matter of fact, it is difficult to define the term e-learning. On their part, Ding, Gu, and Zhu (2005) argues that e-learning is the integration of ICT with curriculum reform and pedagogical innovation in teaching and learning for all sectors of formal education, continuing education, in-service training and lifelong learning.

According to Commonwealth of Learning (2006), e-learning and online learning are terms that have emerged to describe the application of Information and Communication Technologies (ICTs) to enhance distance education, implement open learning policies, make learning activities more flexible and enable those learning activities to be distributed among many learning venues. Moore (1993) as well as Laurillard (2000) holds that e-learning has



the capacity to support interaction as the true uniqueness of e-learning lies in its multidimensional forms of communication and interaction.

In addition, Perkinson (2005) defines e-learning as “instructional content or learning experiences delivered or enabled by electronic technology”. He further argues that the term covers a wide range of applications and processes, such as Web-Based Learning, Computer Based Learning, Virtual classrooms and digital collaboration (Perkinson, 2005). In the same light, Noe (2002) maintains that e-learning is instruction and delivery of training by computer online through the Internet or the Web. Garrison and Anderson (2003); Govindasamy (2002); Rosenberg (2001); stresses that e-learning is teaching and learning that is web-based. They further explain that e-learning helps learners to assume control of the learning process and directly influence outcomes (Garrison & Anderson, 2003).

Latchem (2012) points out that “e-learning, or online learning, involves the use, wholly or in part, of the Internet, an intranet (local area network, or LAN), or an extranet (wide area network, or WAN) for course or service delivery, interaction, support or facilitation, assessment and evaluation”. It can be deduced from the above definitions that the term e-learning covers a wide range of applications and processes such as Web-based learning, computer-based learning, virtual classrooms and digital collaboration. E-learning can be used to describe the delivery of content via the internet, intranets, audio and videotapes, interactive television (TV), CD-ROM and other electronic means. Also, it may include educational animation, simulations and games, learning management software, electronic voting systems and more, with possibly a combination of different methods being used.



Bates (2001), contends that e-learning is more than just online distance education. He argues that any programme which uses information and communication technology to enhance the learning process may be considered to fall into the category of e-learning. E-learning is a modern method of teaching and learning generally used to refer to the use of new technology in learning in a broader sense than Computer-Based Training (CBT) of the 1980s. It is also broader than the term online learning, which generally refers to purely Web-based learning. E-learning which is online or Web-based can be used in conjunction with face-to-face teaching.

When it comes to online learning in education, the model has been pretty straightforward – up until the early 2000s education was in a classroom of students with a teacher who led the process. Physical presence was a no-brainer, and any other type of learning was questionable at best. Then the internet happened, and the rest is history. E-learning is a rapidly growing industry, the effects of which we can trace back to the 1980s and even well before that (Bates, 2001).

Now that affordable e-learning solutions exist for both computers and internet, it only takes a good e-learning tool for education to be facilitated from virtually anywhere. Technology has advanced so much that the geographical gap is bridged with the use of tools that make you feel as if you are inside the classroom. E-learning offers the ability to share material in all kinds of formats such as videos, slideshows, word documents and PDFs. Conducting web-based (live online classes) and communicating with professors via chat and message forums is also an option available to users (Bates, 2001).



There is a plethora of different e-learning systems (otherwise known as Learning Management Systems, or LMSs for short) and methods, which allow for courses to be delivered. With the right tool various processes can be automated such as a course with set materials and automatically marked tests. E-learning is an affordable (and often free) solution which provides the learners with the ability to fit learning around their lifestyles, effectively allowing even the busiest person to further a career and gain new qualifications (Epignosis, 2014).

Some of the most important developments in education have happened since the launch of the internet such as e-learning. These days learners are well versed in the use of smartphones, text messaging and using the internet so participating in and running an online course has become a simple affair. Message boards, social media and various other means of online communication allow learners to keep in touch and discuss course related matters, whilst providing for a sense of community (Epignosis, 2014).

In the fast-paced world of e-learning the available technologies to make a course new and exciting are always changing, and course content can and should be updated quickly to give students the very latest information. This is especially important if the e-learning training is being given to employees in a sector where keeping up-to-date on industry developments is of the utmost importance. This is one of the reasons why many businesses are now offering training via e-learning – other reasons includes low costs and the ability for employees to study in their own time and place (Epignosis, 2014).

Overall, traditional learning is expensive, takes a long time and the results can vary. The importance of e-learning is now a given fact and it can offer an alternative that is much faster, cheaper and potentially better (Epignosis, 2014).

According to Connolly and Stansfield (2007), e-learning has gone through three distinct generations.

- The first generation, took place from 1994-1999 and was marked by a passive use of the internet where traditional materials were simply repurposed to an online format.
- The second generation took place from 2000-2003 and was marked by the transition to higher bandwidths, rich streaming media, increased resources, and the move to create virtual learning environments that incorporated access to course materials, communications, and student services.
- The third generation is currently underway and is marked by the incorporation of greater collaboration, socialization, project based learning, and reflective practices, through such tools as eportfolios, wikis, blogs, social bookmarking and networking, and online simulations.

According to Wroten (2013), the terms listed below are the current trends that dominate the e-Learning world:

i. (MOOCs):

Massive Online Open Courses (MOOCs) are large-scale, online courses, which usually require a substantial amount of learner participation. Corporate MOOCs provide opportunities for recruiting and certification for on-the-job training.



ii. Mobile Learning:

Mobile learning is online training intended for use on mobile devices, like smartphones and tablets. M-learning allows anywhere, anytime learning.

iii. Social Learning:

Social learning is currently very common, thanks to the increased role of social media in e-Learning. Some examples of social learning are Twitter chats, Skype calls and group discussions.

Pappas (2015) also defined e-learning interactivity as the “dialogue” between learners and e-learning tools through which learners become engaged and involved in the e-learning process. It involves forms of action or reaction on learners’ behalf, in order for them to achieve results or reach a conclusion.

Noe (2002) argues that, there are three important characteristic of e-learning:

- i. E-learning involves electronic networks that enable information and instruction to be delivered, shared, and updated instantly.
- ii. E-learning is delivered to the trainee or learners using computers with Internet technology. It could also include other mass media.
- iii. It focuses on learning solutions that go beyond traditional learning. E-learning goes beyond training to include the delivery of information and tools that improve performance. Also, some of the features of e-learning include collaboration and



sharing, links to resources, learner control, delivery, and administration. The figure below shows the various features of e-learning.

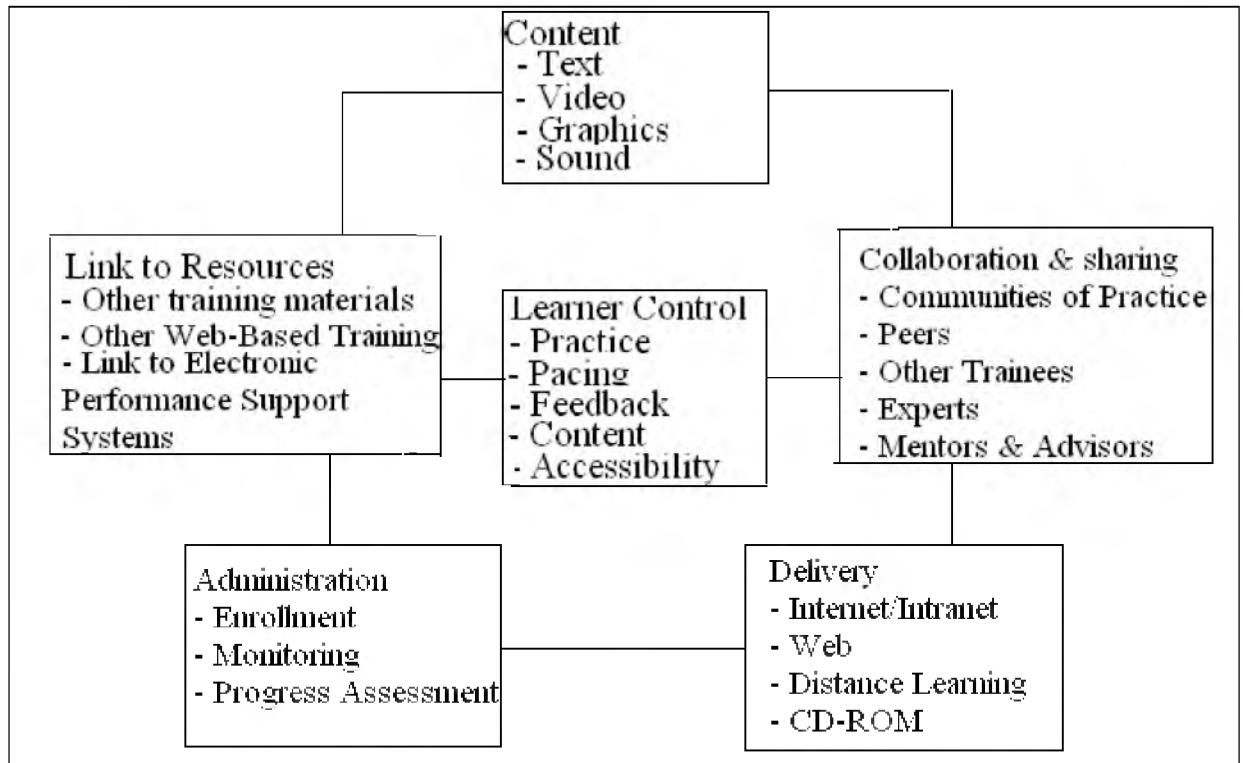


Figure 2.1: Features of E-Learning, fully Adapted from Noe (2002)

As shown in Figure 2.1, e-learning not only involves providing the students with content, it also can give learners ability to control what they learn, the speed at which they progress through the programme, how much they practice, and even when they learn. In addition, e-learning allows learners to collaborate or interact with other learners and experts, and provides links to other learning resources such as reference materials, school websites, and other learning programs (Noe, 2002).



According to Connolly and Stansfield (2007), in today's e-learning environment the type of learning that takes place is generally divided into one of two categories: synchronous and asynchronous:

- **Synchronous e-learning**

According to The Glossary of Education Reform (2013), synchronous learning is a general term used to describe forms of education, instruction, and learning that occur at the same time, but not in the same place. The term is most commonly applied to various forms of televisual, digital, and online learning in which students learn from instructors, colleagues, or peers in real time, but not in person. For example, educational video conferences, interactive webinars, chat-based online discussions, and lectures that are broadcast at the same time they delivered would all be considered forms of synchronous learning.

Before the development and widespread adoption of interactive, internet-based technologies, synchronous learning was more commonly called *distance education* or *distance learning*—and these terms are still used today. While distance learning took many different forms, instructional interactions were often conducted over radio and, later on, closed-circuit television systems. The televisual systems were comparatively expensive, since schools needed classrooms outfitted with a variety of audiovisual technologies—video cameras, microphones, televisions, etc.—and instructional interactions could occur between properly equipped classrooms that used compatible systems (Glossary of Education Reform, 2013).

According to the Synchronous e-Learning Research Report 2005, Synchronous learning is live, real-time and usually scheduled facilitated instruction *and* learning-oriented interaction. Synchronous e-Learning is learning that takes place through electronic means.



Synchronous learning is distinguished from self-paced asynchronous learning, which students access intermittently on demand. Synchronous e-Learning has grown rapidly to become a significant component in most organizations and training environments.

A September 2005 e-learning Guild research report indicated that about 90% of respondents had participated in a synchronous e-Learning event. Like most successful technology areas, synchronous e-Learning emerged to fill a need and then expanded to provide options previously unavailable to early adopters. The roots of synchronous e-Learning derive from three main influences: the classroom, the media, and the conference (The e-Learning Guild Research, 2005).

- **Asynchronous e-learning**

According to The Glossary of Education Reform (2013), asynchronous learning is learning that happens independent of time and space. Learners are able to interact with course materials and with each other at a time of their choosing. A discussion thread is an example of an asynchronous learning. One learner can post a thought, and hours (or days) later, another learner can comment on the posting. Asynchronous learning gives e-learning much of its appeal. Traditionally, students needed to be physically present to engage in learning with other students. Now, learners can engage each other when it is most convenient and a knowledge trail is left of discussions. In synchronous learning the discussion vanishes (unless it is recorded and indexed) but asynchronously, students that are trailing behind in course work still receive the benefit of being able to read discussion posts. Asynchronous



learning frees e-learning from the requirements of time and space. This is perhaps the most revolutionary aspect of e-learning.

According to The Glossary of Education Reform (2013), digital and online learning experiences can also be *asynchronous*—i.e., instruction and learning occur not only in different locations, but also at different times. For example, prerecorded video lessons, email exchanges between teachers and students, online discussion boards, and course-management systems that organize instructional materials and related correspondence would all be considered forms of asynchronous learning.

Learners across different time zones and different continents can now participate in the same courses. Content can be explored and discussed in great depth –allowing learners the time to reflect and formulate thoughtful responses. Asynchronous tools like email and discussion forums have transformed how people communicate and share knowledge. Asynchronous training may include computer-based training, using CD-ROMs or, more frequently, web-based training, in which a trainee logs into an online training system with a user name and password to begin an interactive course (The Glossary of Education Reform, 2013).

The course can be easily updated, is accessible from anywhere and can be used with all kinds of computer systems. This type of training is most suitable to structured content—questions that have right and wrong answers. The content varies little according to circumstances. An example of structured content would be a series of steps to be followed in formatting a document in a particular computer program. The asynchronous environment is most appropriate for those who learn best by thinking about content on their own, and who



can structure their time to accommodate instruction (The Glossary of Education Reform, 2013).

Keegan (2000) stipulates that the Internet as an educational tool offers a global open platform for information storage and display in text, graphic, audio and video format as well as communication tools for synchronous and asynchronous interaction. Text, video, graphics, and sound can be used to present course content. E-learning may also include various aspects of administration such as course enrolment, testing and evaluating students, and monitoring of students' learning progress. Various delivery methods can be incorporated into e-learning including distance learning, CDROM and the Internet. Santrock (2004) concludes that, computer – assisted instruction involves using computers as tutors to give students practice, to assess students' level of understanding, and to provide additional instruction if needed.

In a study undertaken by Kibinkiri (2014), the role of e-learning on the professional development of student-teachers in Cameroon revealed that: Computer-Based Direct Instruction, Asynchronous Experiential Learning, Asynchronous Collaborative Learning, Internet-Based Problem Solving, Online Content Representation, Online Learning Environment have a significant influence on the professional development of student-teachers. He also revealed that, the use of e-learning has a significant influence on the performance of student-teachers in educational technology.



2.3 BENEFITS OF E-LEARNING IN ORGANISATIONS

The key benefits of more e-learning for businesses in the areas of skills shortage include greater flexibility, increased levels of on-the-job training, better quality in the training especially across multiple locations, more customisation of the training to suit business needs, and cost savings. The cost savings include reduced travel time or time off to complete the off-the-job components of the training. One of the major enablers is the mind-set of the training organization and of the teacher/trainer. The driving philosophy should be to ‘give it a go’. This mind-set includes being willing to collaborate and to share the e-learning resources being developed (Australian Flexible Learning Framework, 2009).

Other enablers include the value of setting up and maintaining an online community of fellow teachers/trainers and others who share the desire to use new technologies to connect with learners. Access to e-learning consultants is another key factor, especially those with considerable teaching experience who are able to contextualize the resources for teachers/trainers (Australian Flexible Learning Framework, 2009).

The 2008 E-learning Benchmarking Survey identifies some well-defined outcomes desired by stakeholders for the use of e-learning. These attributes include: greater flexibility; the enhancement of face-to-face contact; improvements in teacher-student communication; improved retention and attainment; greater employer interest; and higher levels of student satisfaction. A major attribute is the increased flexibility for learners, teachers/trainers and employers. Numerous reports reveal that e-learning provides enhanced outcomes for training that is more flexible with time, place and the delivery. For instance, learning can be delivered through problem-based learning activities, in virtual laboratories, or as self-paced



learning. Content can be designed for re-use between groups, using blended learning delivery and adaptive learning. We know that access to e-learning is a major factor for students looking to undertake a significant part of their training online (Australian Flexible Learning Framework, 2009).

The flexibility offered through e-learning is particularly important to students wanting to upgrade their skills, to continue to work, or for people wanting to re-enter the workforce. The key benefits Australian students identify for e-learning include flexibility, choice, and the capacity to balance home, life and work commitments (Australian Flexible Learning Framework, 2009).

The e-learning benchmarking survey's formal 'estimate of the proportion of VET training activity that involves e-learning suggests that there has been a modest increase in the uptake of e-learning since the conduct of the 2011 survey. It is now estimated that 48% of VET training involves e-learning, up from 44% in 2011 and continuation of a plateauing in the uptake of e-learning.

Naidu (2003) points out that, e-learning appears to be growing out: "from within educational institutions, which have offered open and distance learning programs either in a single, dual, or mixed mode. Their goal, in most cases, is to increase flexibility and efficiency in the belief that doing so will enable them to tap onto markets and student populations, which were previously out of their reach and from the corporate sector, many of which are favouring e-learning over residential workshop-based approaches to staff training and



development. The corporate world is increasingly finding e-learning to be an attractive model as it searches for flexible and 'just-in-time' learning opportunities".

Moreover, Naidu (2003) postulates that, the following factors are responsible for the growth and development of e-learning:

- The increasing accessibility as well as the decreasing costs of information and communications technologies;
- The capacity of ICT to support and enrich conventional educational practices through resource-based learning and synchronous and asynchronous communication.
- The need for flexible access to learning opportunities from various venues such as the home, workplace, community centre, and the conventional educational institution.
- The demand from isolated and independent learners for more equitable access to educational opportunities and services.
- The belief among many educational institutions that the application of ICT will enable them to increase their share in an increasingly competitive educational market.
- The need, among educational institutions, to be seen to be 'keeping up with the times' (with the integration of ICT) in order to attract the attention of parents, students and other funding donors.
- The belief and the expectation that online learning will reduce costs and increase productivity and institutional efficiency.



On the benefits of e-learning, Picciano and Seaman (2009) highlighted that, administrators in small, rural districts use online and distance learning courses to provide students with course opportunities their schools could not otherwise offer. On the rise over the past decade e-learning can address common challenges facing rural schools, particularly lack of access to college-level offerings such as Advanced Placement or dual enrollment courses (Anderson & Chang, 2011; Levin, 2007).

According to Holian, Alberg, Strahl, Burgette, and Cramer (2014), online and distance learning courses offer rural schools a means of exposing students to a diversity of courses they might not otherwise have access to. Roberts and McInnerney (2007) also claim that, online group learning, sometimes referred to as computer-supported collaborative learning (CSCL), if implemented appropriately can provide an ideal environment in which interaction among students plays a central role in the learning process.

According to Komi (2014) with e-learning, large number of employees can be trained at a time and training can be rolled out within short span of time. Employees can connect with peers from different places for the purpose of training, without incurring accommodation and travel expenses. So, e-Learning is the preferred method of training for many organizations.

Classroom training involves expenses for travel and accommodation that can be substantial. Additionally, training is imparted at a fixed place as per a pre-determined schedule that may not be convenient to all employees. Multiple sessions need to be arranged to accommodate more employees, taking the expenses skyward. E-learning overcomes these limitations as employees can access the same training content at a time that fits their schedule. No employee can be denied training either for lack of space or scheduling issues (Komi, 2014).



Most of the organizations share training materials with their employees for their reference. Employees make use of them, whenever it is necessary. But, if the training content needs to be updated, they need to reprint the booklets/materials. E-Learning eliminates these problems, as the content needs to be updated online and hosted at a central repository, and employees can access the updated content as soft copies in real time (Komi, 2014).

Komi (2014) explains that, it is easier for learners to evaluate their learning through self-assessments in eLearning courses. There is no need for an external instructor to evaluate the performance and the learner receives instant feedback at his desk or workstation. The atmosphere is non-competitive and non-threatening. In case, a learner fails the test, he can take it the second time after going through the course content as many times as required. This format gives a chance to learners to learn from their mistakes and retake the test.

Again, Komi (2014) explains the benefits of e-learning by stating that classroom training is generally push training, where employees are obliged to attend the training sessions. They do not have great choices in terms of who the instructor is or how the program is going to be conducted. However, it is not the case with e-learning. E-learning is designed to appeal to learners with varied learning styles. A range of interactivities, scenarios, gaming, case-studies and storytelling formats and tools are used to ensure all types of learners are engaged and involved in the course. Learners are likely to be better motivated to take up e-learning courses.

According to Kruse (2016), some of the most outstanding advantages to the trainer or organization of e-learning are:



- **Reduced overall cost** is the single most influential factor in adopting e-learning. The elimination of costs associated with instructor's salaries, meeting room rentals, and student travel, lodging, and meals are directly quantifiable. The reduction of time spent away from the job by employees may be the most positive offshoot.
- **Learning times reduced**, an average of 40 to 60 percent, as found by Brandon Hall (*Web-based Training Cookbook*, 1997, p. 108).
- **Increased retention** and application to the job averages an increase of 25 percent over traditional methods, according to an independent study by J.D. Fletcher (*Multimedia Review*, Spring 1991, pp.33-42).
- **Consistent delivery** of content is possible with asynchronous, self-paced e-learning.
- **Expert knowledge** is communicated, but more importantly captured, with good e-learning and knowledge management systems.
- **Proof of completion and certification**, essential elements of training initiatives, can be automated.

According to Kruse (2016), some of the most outstanding advantages of e-learning to the student include:

- **On-demand availability** enables students to complete training conveniently at off-hours or from home.
- **Self-pacing** for slow or quick learners reduces stress and increases satisfaction.
- **Interactivity** engages users, pushing them rather than pulling them through training.
- **Confidence** that refresher or quick reference materials are available reduces burden of responsibility of mastery.



2. 4 ATTITUDES OF STAFF TOWARDS E-LEARNING AS A LEARNING TOOL

Petty et al, (1997) cited in Wood and Wood (2002) states that, attitudes are relatively stable evaluation of persons, objects, situations or issues along a continuum ranging from positive to negative. Learners expect more products and services to be customized, flexible and workplace-based, with teachers and trainers being ‘managers of learning’. At the same time they expect quality e-learning that provides easy accessibility, good usability, well-integrated tools and correctly working links, materials and media (Australian Flexible Learning Framework, 2009).

According to Adewole-Odeshi (2014), measuring attitudes has an important role in analyzing consumer behaviour because it is a known fact that there is a strong connection between attitude and behaviour. Specialists have discovered that attitude indicates in a certain degree, the possibility of adopting certain behaviour. Talking about e-learning, a favourable attitude shows a greater probability that learners will accept the new learning system. Factors such as patience, self-discipline, easiness in using software, good technical skills, abilities regarding time management impact on students attitude towards e-learning. Thus, the attitude can be positive, if the new form of education fits the students’ needs and characteristics, or negative if the student cannot adapt to the new system because he does not have the set of characteristics required.

Bad e-learning perception may be due to lack of understanding, lack of communication, and lack of trust or conflicting agendas in appropriate use of technology. Some goal coaching and awareness exercises are probably needed to strengthen people’s perception. It is important to realize that learners are both emotional and intellectual; and emotions have



much effect on people's perception and what they do. Technology acceptance is defined as "an individual's" psychological state with regard to his or her voluntary or intended use of a particular technology (Adewole-Odeshi, 2014).

According to Adewole-Odeshi (2014), to have positive attitudes towards e-learning, developers and deliverers of e-learning need more understanding of how students perceive and react to elements of e-learning along with how to most effectively apply an e-learning approach to enhance learning. In addition, knowing students intentions and understanding the factors that influence students' belief about e-learning can help academic administrators and managers to create mechanisms for attracting more students to adopt this learning environment.

The results from the 2013 e-learning benchmarking surveys of RTOs and VET teachers and trainers indicate that the use of e-learning is now widespread among larger training providers and some smaller providers. Most VET teachers and trainers use technology as part of their training programs, within classrooms and as part of off-site and workplace learning, and across a range of different teaching and training activities. However, as has been found in previous benchmarking surveys, it is still the case that some training Organizations and VET teachers/trainers do not consider their use of technology to represent e-learning.



In addition, Guglielmino and Guglielmino (2004), identify some attitudes that support self-directed learning. These include:

- i. Having confidence in you as a competent, effective learner.
- ii. Accepting responsibility for your own learning and viewing problems as challenges rather than obstacles
- iii. Valuing your own learning.
- iv. A willingness to seek help.
- v. Creativity and independence in learning.

Mezirow and Associates (2000) asserts that, it is very important in adulthood that people develop a more critical worldview as they seek ways to better understand their world. This means learning how to negotiate and take action on their own objectives, values, feelings and meanings rather than those they have uncritically taken in or learn from others. Thus developing more reliable attitudes, exploring and validating their faithfulness, and making informed decisions are fundamental to e-learning as a new strategy or method of teaching and learning.

In the same light, Tennant (1991) points out that, the meanings that learners attach to their experiences may be subjected to critical scrutiny or reflection. Mezirow (1995) argues that, critical reflection “is a process by which we attempt to justify our beliefs, either by rationally examining assumptions, often in response to intuitively becoming aware that something is wrong with the result of our thought, or challenging its validity through discourse with others of differing viewpoints and arriving at the best informed judgment”.



Guglielmino and Guglielmino (2004), postulates that, basic academic skills are an important part of readiness for eLearning, especially reading skills. Also, depending on the instructional design, writing skills can also be critical. Self-directed learners are also usually skilled at identifying and analyzing their learning needs. Key skills related to meeting learning needs include the ability to set learning goals, develop a learning plan, identify resources for learning (both human and material resources), implement the learning, and evaluate the learning. Moreover, habits such as systematic planning, productive organization of learning media and materials, and completing tasks within the time scheduled can streamline and anchor effective e-learning (Guglielmino & Guglielmino, 2004).

In another related research undertaken by Tufan (2013) on the effectiveness of e-learning in corporate Training Programmes in corporate environment in Turkey on the grounds of experiences of Enocta in the sector revealed the current status of the field. That situation may be attributed to the infancy of the sector in Turkey compared to developed countries. Nonetheless, more research is required for corporations who want to implement e-learning as well as e-learning service providers. That will be only possible with the efforts of all sites.

In another related research undertaken by Akimanimpaye (2012) on the attitudes of undergraduate nursing students towards e-learning at the University of the Western Cape. The findings revealed that: Several variables were designed to measure attitude of students towards e-learning. This included attitude towards computers, learner computer anxiety, learner internet self-efficacy, e-learning course flexibility, computer technology, internet quality, instructor feedback, diversity in assessment, perceived interaction with others and

perceived easy to use. Also, the statistical analysis (independent sample t-test) of the aforementioned variables that influence learner satisfaction, show that males and females differed significantly in terms of satisfaction levels.

However, the same analysis applied to specific demographic variables having two outcome levels (age group, computer facility at home, computer training experience and experience in e-learning prior to registering at UWC), revealed no statistically significant difference in learner satisfaction between these groups. Pearson correlation revealed that, learner satisfaction as a dependent variable is positively correlated with e-learning course flexibility, computer technology, diversity in assessment, perceived interaction with others and perceived easy to use. The remaining variables were not statistically associated with learner satisfaction since their p-values exceeded 5% level of significance. On the factors that influenced learners' satisfaction, a multivariate analysis (multiple regression) used in this study indicated that, perceived easy to use, gender and year level of participants are the only factors that predict or shape learners satisfaction with e-learning (Akimanimpaye, 2012).

In related study undertaken by Abdullah (2011), evaluating the effectiveness of the e-learning Experience in Some Universities in Saudi Arabia from Male Students Perceptions, came out with the following findings: the researcher concluded that e-learners believe that they are able to learn independently, at any time and everywhere, at any pace, reviewing what they have learned any time through more personalized approaches to learning, by choosing a suitable learning approach, receiving immediate feedback, and evaluating their own learning.



The results showed that e-learning encouraged learners to learn more and facilitated the process of learning. This may have been due to a number of different reasons including the capabilities within the e-learning context to present varied information in varied ways, and to the effect of in-built organizational tools. The results also showed that the design of e-learning is perceived as effective as they were a direct reflection of its in-built features. The results with these statements of learner satisfaction attributed increases in self-reliance, motivation and self-determination to e-learning. The present study findings show that the students believe that their marks were better in e-learning than those that the learners received in traditional learning (Abdullah, 2011).

The results further demonstrated that learners interacted and enjoyed the contact with their instructors but they rated this slightly lower than the interaction with each other. They felt that they formed positive productive relationships with instructors and felt that e-learning encouraged discussion. They indicated that they preferred to communicate via e-learning instead of face-to-face and that e-learning increased the amount of communication, and discussion they had with their instructors. Learners reported that e-learning increased the attention that they received from their instructors (Abdullah, 2011).

The findings also revealed that learners interacted with the instructors, but slightly less, than amongst themselves. They enjoyed connecting with their instructors through e-learning, building productive relationships and gained encouragement to discuss things with their instructors. They preferred to communicate through e-learning to doing so in traditional settings and, in this study, they felt that they received more of their instructors attentions in



the e-learning environment. It was evident from the study that, learners' perceptions of e-learning endorsed its effectiveness. They found e-learning a flexible tool that allowed them to interact with the content, their peers and their instructors whilst perceiving that their ability to learn was enhanced by e-learning availability for use in any place, at any time and at any pace (Abdullah, 2011).

In a related study undertaken by Okinda (2014) on assessing e-learning readiness at the Kenya Technical Teachers College, The findings of this study were that e-Learning requires that learners have basic literacy skills that would enable them to comfortably use ICT for learning. Given that 93.5 % have basic computer skills, 88.0 % have basic computer literacy skills and 78.0 % are comfortable using computers indicate that KTTC learners were ready for e-learning.

The study revealed that a 66.4 % readiness level was established for content development. KTTC's e-learning content that is taught is interactive (68.1 %), attracts and keeps learners using the system (67.4 %), appropriately targets learners (73.3 %) and accommodates different learning styles (70.8 %). The e-learning content is feasible enough to be taught over the computer, as the design is simple, user-friendly, flexible, intuitive and conducive (61.2 %), up-to-date, relevant, appealing and user-friendly (61.1 %), and, it is user-friendly, well structured, and interesting (65.2 %).

The study also found that KTTC's ICT infrastructure is e-ready, at an index of 62.8 %. Accessibility to internet while in college (78.6 %), on mobile phones (71.5 %) and when not in college (53.8 %) were pointed out. Respondents also indicated that they had access to computers while in college (68.8 %) and when not in college (50.0 %).



The findings also imply that over 70 % of the respondents were in agreement that bandwidth limitations hamper e-learning efforts. ICT department is well resourced and used (67.4 %), communication with the ICT department was strong (68.2 %) and, ICT infrastructure can efficiently host its e-learning content (67.4 %). Security issues were also resolved, as 71.5 % stated that network systems and components were compatible. Requisition for ICT equipment is done using the bottom-up approach. Policies relating to use of ICT equipment were available for all users through the institution's website.

Results of the study point to a low level of 30 % of organizational culture readiness, and perhaps this may be attributed to lack of knowledge by staff and students owing to inadequate policy dissemination. Results also showed that 60.6 % of respondents agreed that top management supports the use of the internet for learning purposes. This may be attributable to deliberate government efforts to embed ICT infrastructure in all TIVET institutions in the country, coupled with donor support. Results suggested that 45.9 % of respondents agreed that learning using the internet is accepted and communicated at all levels

In a related study undertaken by Alkhalaf, Drew and Alhussain (2012) on assessing the impact of e-learning systems on learners: a survey study in the KSA revealed that the use of e-learning systems has had a positive impact on learners education. Their conviction suggests that e-learning plays an effective role in the development of educational processes. The results further indicate that most of the students (72%) either agreed or strongly agreed



that e-learning systems enhance their awareness of the requirements of educational processes.

Moreover, the majority (71%) of the surveyed students either agreed or strongly agreed that using e-learning systems increases their productivity. The results also confirmed that 60% of the participants were either satisfied or very satisfied with their experiences using e-learning systems. However, about 23% of the students either disagreed or strongly disagreed regarding their satisfaction with the experience of using the e-learning system, so more improvements in the applied e-learning system were modern technology in organizations, as implemented through an e-learning system at Qassim University, had improved the student experience.

According to Roberts and McInnerney (2007) the reasons why online group learning not widely practiced are educators' fears of veering away from the well-established "sage on the stage" mentality (characterised by the traditional lecture / seminar / tutorial format, with notes and other resources provided on the Web) to the more increasingly common "guide on the side" mentality (characterised by various forms of group and peer learning). These fears can, however, be readily allayed by a prior knowledge of the problems likely to be encountered, and appropriate solutions that can be applied.

According to Zand and Omidian (2011) despite the growing technology in higher education several recent studies have advocated that many students may lack the necessary skills to use e-learning effectively and are therefore handicapped. Attitudes concerning the use and effectiveness of web-based course management software results show that faculties are significantly more likely than students to agree with web-based learning.



Zand and Omidian (2011) also claims students preferred the knowledge which acquired from personal contacts than online courses. Zand and Omidian (2011) believe ICT tools helped student only when the personal contacts fail, many learners preferred traditional teaching methods and face – to – face rather than the use of computers and ICT tools are convenient, they are not a substitute to ‘interaction ‘with lectures. The text book is still considered as the main source of knowledge, followed by references provided to them and finally web resources (Zand & Omidian, 2011).

According Zand and Omidian (2011) students learn better through face – to – face contact with tutors and prefer to read from a book or handout rather than a computer screen. The study of student’s attitude towards e-learning can in many ways help managers better prepare in light of e-learning for the future. There is a relationship between students’ attitude towards e-learning and positive learning outcomes. Students’ attitude towards e-learning provides a beneficial construct to predict learning outcomes (Zand & Omidian, 2011).

2.5 CHALLENGES TO EFFECTIVE UTILIZATION OF E-LEARNING AS A LEARNING TOOL

While e-learning or distance learning was used in a wide variety of educational settings, it was often employed by smaller schools, rural schools, and other education programmes that did not have the funding or resources needed to hire teachers in specialized areas or provide a broad selection of specialized courses—e.g., courses in Chinese language or Japanese history. In these cases, schools may have used, and may still use, distance- and

asynchronous-learning technology to expand course offerings for students or share teachers with specialized expertise (Glossary of Education Reform, 2013).

In a study undertaken by Kibinkiri (2014), the role of e-learning on the professional development of student-teachers in Cameroon revealed that the problem of inadequate Information and Communication Infrastructure, high cost of Internet services, lack of qualified electronic instructors, slow Internet lines or access speed, lack of interest by some students and lecturers, poor implementation of IT projects in schools, lack of teacher flexibility and creativity, ineffective teacher training programmes on ICT, insufficient knowledge about e-learning (learning with ICTs), recurrent power failure, lack of ICT based curriculum development programme amongst others contributed the greatest impediments to effective e-learning in teacher education in Cameroon.

In a related research undertaken by Alzahrani (2015) on the role of interactivity in effectiveness of e-learning found somewhat unique challenges that higher education students in Saudi Arabia faced while using e-learning included a relative lack of knowledge of using e-learning because in secondary schools e-learning was not as commonly used as in some of the western nations. This newness to e-learning can be quite challenging for some students because they are burdened with not only learning higher level things in their subjects but learning it in a manner which is new to them. This puts the teacher into the centre of the learning process as he/she must facilitate the learning process for the students. This means that the teachers require deep knowledge of the usage of e-learning resources.

In another related study undertaken by Coopasami (2014) on the topic assessing nursing students' readiness for e-learning came out with the following findings:



- **Psychological readiness**

The results within the context of this specific research demonstrated that although participants are moving towards becoming psychologically ready, continuous assessment is required in order to promote a smooth transition from a more traditional form of learning to a more blended classroom.

- **Technological readiness**

The findings also demonstrated that most students come to tertiary institutions without previous knowledge or computer skills. E-learning can play an important role in equipping students with the necessary skills that they need to succeed in the nursing environment. It was discovered that, the continuous change associated with technology is therefore important that nursing educators engage students through e-learning.

- **Equipment readiness**

This study found, that, majority of the students did not possess the proper equipment to access the online Blackboard classroom.

In a related study undertaken by Okinda (2014) on assessing e-learning readiness at the Kenya Technical Teachers College, the findings of this study were that: accessibility to the internet and computers when not in college is comparatively low. Such learners access computers and the internet through cyber cafes that were available in virtually every market centre throughout the country, though at exorbitant cost. Results of the study pointed to a low level of 30 % of organizational culture readiness, and perhaps this may be attributed to lack of knowledge by staff and students owing to inadequate policy dissemination. However, only 30.0 % of the teachers and trainees surveyed agreed that the requirement to



do some e-learning is explained to learners at orientation, yet only 25.1 % of learners had previous knowledge about e-learning. While 32.2 % agreed that from the support for use of the internet, training and learning using the internet is seen as an investment and not as a cost.

The conventional view at the institution is that e-learning is about continuous integration of ICT into teaching and learning, yet e-learning involves more than use of ICT. Indeed, the results pointed to the low level of exposure to an LMS at KTTC, with only 27.8 % agreed that there is a Learning Management System that supported learners in accessing e-learning content, such as lecture notes and PowerPoint slides (Okinda, 2014).

Only 27.3 % of the respondents agreed that there is an e-learning initiative that enables employees and students to purchase computer equipment for a heavily subsidized price. Perhaps these respondents did not distinguish between the current policy on acquisition of infrastructure and that envisioned in the study.

The study envisions a project that will transfer ownership of equipment to users who acquire it through institutional credit facilities as they join the college. The current model of financing involves students paying a minimal amount to cover for the cost of internet connectivity and the use of the institution's computers at the library, computer labs. The study again pointed that only 45.5 % of respondents agreed that KTTC environment was dynamic enough, while 43.8 % acknowledged the high level of competition in the technical training industry and 31.0% felt that KTTC operates in an environment where its e-learning solution needs to meet legal requirements such as licenses (Okinda, 2014).



According to Holian, et al. (2014) schools that do not offer online and distance learning courses do report technological limitations as the greatest barriers to offering online courses lack of supervision for students, students find online courses are more difficult than expected, lack of student interest in online courses, difficulty obtaining student progress or grade reports, lack of technical support for online courses, questions about the rigor or quality of courses, lack of teacher interest in teaching online courses, difficulty registering students for courses and cost of courses as the greatest barrier to offering distance learning courses.

Kruse (2016) claims e-learning is not, however, the be all and end all to every training need. It does have limitations, among them are:

- ***Up-front investment*** required of an e-learning solution is larger due to development costs. Budgets and cash flows will need to be negotiated.
- ***Technology issues*** that play a factor include whether the existing technology infrastructure can accomplish the training goals, whether additional technology expenditures can be justified, and whether compatibility of all software and hardware can be achieved.
- ***Inappropriate content*** for e-learning may exist according to some experts, though are limited in number. Even the acquisition of skills that involve complex physical/motor or emotional components (for example, juggling or mediation) can be augmented with e-learning.
- ***Cultural acceptance*** is an issue in organizations where student demographics and psychographics may predispose them against using computers at all, let alone for e-learning.



Kruse (2016) claims the disadvantages of e-learning to the learner are:

- **Technology issues** of the learners are most commonly technophobia and unavailability of required technologies.
- **Portability** of training has become a strength of e-learning with the proliferation of network linking points, notebook computers, PDAs (Personal Digital Assistant), and mobile phones, but still does not rival that of printed workbooks or reference material.
- **Reduced** social and cultural interaction can be a drawback. The impersonality, suppression of communication mechanisms such as body language, and elimination of peer-to-peer learning that are part of this potential disadvantage are lessening with advances in communications technologies.

2.6 MECHANISMS AND WAYS OF IMPLEMENTING E-LEARNING FOR THE REALISATION OF STAFF PROFESSIONAL DEVELOPMENT

In a related research undertaken by Alzahrani (2015) on the role of interactivity in effectiveness of e-learning found the following:

- i. It was indicated that mere adoption of internet as channel for delivery of education will not result in better outcomes but for this to happen computer based programmes should be more student-centred in their methods of instructions. However, it is the responsibility of the teachers to turn them from passive to active learners. In context of this research the learning which is blended, authentic, active and deep is effective learning.



- ii. Effectiveness of e-learning rests in development of skills related to independent learning. This can be achieved by focusing broadly on teaching the students skills to become independent learners. This will broaden the scope of e-learning and will provide immense benefits to the human society for providers and policy makers to ensure that they can develop knowledge seeking and society awareness.
- iii. Student-student interactivity is quite critical in effectiveness of e-learning. This would help the e-learning course providers in ensuring that student-student interaction is considered as a key component of their online courses. The study further found that effectiveness of e-learning can be improved by improving interactivity. This research thus, went a step further and looked at what kinds of interactivity are useful for improving effectiveness of e-learning and furthermore, investigated the nature of this relationship.

2.7 CONCLUSION

This chapter has presented and discussed a review of existing literature on the effectiveness of e-learning in training and development of workers in various organisations. The chapter has also presented and discussed each of the following: conceptualisation of e-learning, benefits of e-learning in organisations, attitudes of staff towards e-learning as a learning tool, challenges to effective utilization of e-learning as a learning tool, mechanisms and ways of implementing e-learning for the realisation of staff professional development and conclusion.

The next chapter is chapter three; that chapter will present the research methodology.



CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

This chapter will describe the research methodology used in this study. This includes: the research approaches, the research design, the population and sampling, the research instruments, the data collection procedure, data analysis, ethical considerations, validity, reliability and the pilot testing of the instrument.

3.2 RESEARCH APPROACH

In this study, the mixed method of research was used. This approach consisted of the quantitative and qualitative research approaches. The two approaches were used in order to produce results that could be generalised regarding the effectiveness of e-learning in training and development of workers at the Ghana Health Service in Ashanti Region.

Creswell (2003) explains that, mixed methods approach is an approach to inquiry involving collecting both quantitative and qualitative data, integrating the two forms of data, and using distinct designs that may involve philosophical assumptions and theoretical frameworks. The core assumption of this form of inquiry is that the combination of qualitative and quantitative approaches provides a more complete understanding of a research problem than either approach alone. This method involves combining or integration of qualitative and quantitative research and data in a research study. Qualitative data tends to be open-ended without predetermined responses while quantitative data usually includes closed-ended responses such as found on questionnaires or psychological instruments.



According to Kimberly and Pharm (2009), mixed methods involve philosophical assumptions that guide the direction of collecting, analysing, and mixing qualitative and quantitative approaches in many phases in the research process. As a method, it focuses on collecting, analysing, and mixing both quantitative and qualitative data in a single study or series of studies.

3.2.1 Quantitative approach

White, (2005) states that quantitative research is usually based on what is called a positivist philosophy, which assumes that there are social facts with a single objective reality, which is separated from the feelings and beliefs of individuals. This objective reality can be explained, controlled and predicted by natural (cause/effect) laws. This is supported by McMillan and Schumacher (2010) who stated that quantitative research designs put emphasis on objectivity in measuring and describing phenomena. As a result, the research designs maximize the objective by using numbers, statistics, structure, and control.

Maree (2010) explains that quantitative research is a process that is systematic and objective in its way of using numerical data from only a selected subgroup of a universe to generalize the findings to the universe that is being studied. Maree (2010) states that in quantitative research, an investigator relies on numerical data to test the relationships between the variables. A qualitative researcher tests theories about reality, looks for cause and effect, and uses quantitative measures to gather data to test the hypothesis or questions. This is elaborated on by Hopkins (2008) who stated that quantitative research is all about quantifying relationships between variables. Variables are things like weight, performance,



time and treatment. The researcher measures variables on a sample of subjects, which can be tissues, cells, animals or humans.

3.2.2 Qualitative approach

According to Johnson and Christensen (2008) when dealing with issue of understanding a social phenomenon, the best way of conducting research is to use the qualitative method. Qualitative method was used because qualitative research method involves meaningful explanations of social activities that require a substantial appreciation of the perspectives, culture and “world-view” of the actors involved.

According to Mack, Cynthia, Kathleen, Greg and Emily, (2011) the strength of qualitative research is its ability to provide complex textual descriptions of how people experience a given question. Qualitative research approach was used because it provided information about the participants’ side with regards to the effectiveness of e-learning in training and development of workers at the Ghana Health Service in Ashanti Region. Qualitative methods are also effective in identifying intangible factors, such as social norms, socio economic status, gender roles, ethnicity, and religion, whose role in the research issue may not be readily apparent (Mack et al, 2011).

Ganjendra and Kanka (1990) explain that, a qualitative research approach involves the gathering of evidence that reflects the experiences, feelings or judgments of individuals taking part in the investigation of a research problem or issue whether as subjects or as observers of the scene. There may be some element of quantification in a qualitative research approach, as for example, when the researcher reports the numbers of individuals



with similar judgment or those experiencing similar feelings. Qualitative research is often concerned with social processes.

A qualitative research method is suitable when the researcher wants to understand the phenomenon better. Research methodologies are the ways in which the researcher generates and analyses data (Maree, 2010). Leedy and Omrod (2010) state that qualitative research is a systematic process of collecting, analysing and interpreting data in order to increase our understanding of the phenomenon about which we are interested or concerned.

3.3 RESEARCH DESIGN

The research designs that were used in this study are:

3.3.1 Quantitative research design

The quantitative research design used in this study was the survey. This design is suitable for this study as it helped to gather data at the Health Service with the intention of describing the effectiveness of e-learning in training and development of workers at the Ghana Health Service in Ashanti Region.

According to Louis, Lawrence and Keith (2002), surveys typically gather data at a particular point in time with the intention of describing the nature of the existing conditions or identifying standards against which existing conditions can be compared or determining the relationships that exist between specific events.

White (2005) highlights the views that a survey usually involves collecting data by interviewing a sample of people selected to represent the population accurately under study.



Each person in the sample is asked the same series of questions, and responses are then organized so that conclusions can be drawn from them. This information is used to solve a particular problem or to add needed information about the problem. This is supported by McMillan and Schumacher (2010) who states that in a survey research design, the investigator selects a sample of subjects and administers a questionnaire or conducts interviews to collect data. Surveys are used to describe attitudes, beliefs, opinions and other types of information.

Kendra (2012) explains that a survey is a data collection tool used to gather information about individuals. Surveys are commonly used in psychology research to collect self-report data from study participants. A survey may focus on factual information about individuals, or it might aim to collect the opinions of the survey takers. A survey can be administered in two different ways. In one method, known as a structured interview, the researcher asks each participant the questions. In the other method known as a questionnaire, the participant fills out the survey on his or her own. Surveys are generally standardized to ensure that they have reliability and validity.

According to Denzin and Lincoln (2003) a case study is a “Systematic inquiry into an event or a set of related events which aims to describe and explain the phenomenon of interest. Case studies offer a multi –perspective analysis in which the researcher considers not just the voice and perspective of one or two participants in a situation, but also the views of other relevant groups of participants and the interaction between them. It opens the possibility of giving a voice to the powerless and voiceless, like children or marginalized groups.”



3.3.2 Qualitative research design

The qualitative research design used was the case study. The case study design too was suitable for this study in the sense that it helped to gather data at the health service with the intention of describing the effectiveness of e-learning in training and development of workers at the Ghana Health Service in Ashanti Region.

A case study is a systematic inquiry into an event or a set of related events which aims to describe and explain the phenomenon of interest. Case studies offer a multi-perspective analysis in which the researcher considers not just the voice and perspective of one or two participants in a situation, but also the views of other relevant groups of participants and the interaction between them (Denzin & Lincoln, 2003).

According to Judith (2004), the case study approach is particularly appropriate for individual researchers because it gives an opportunity for one aspect of a problem to be studied in some in-depth within a limited time scale. McMillan and Schumacher (2006) also stated that case study researchers investigate in-depth small distinct groups. It is an exploration or an in-depth analysis of bounded system or a single or multiple cases, over a period of time.

Anderson (1990) stated that the first major issue in case-study research is to focus on the problem; in other words, what the issue is that is being investigated in case-study research, the data are interpreted as collected. Inferences are made in detective like-fashion.



3.4 POPULATION AND SAMPLING

Population and sampling determine where and from whom data will be collected. One goal of scientific research is to describe the nature of a population; a group or a class of subjects or variables cannot be examined due to time and resource constraints, therefore the researcher will follow the usual procedure by taking a sample from the population that is representative of the entire population (Marie, 1997). The population and sampling technique used in this study are presented below:

3.4.1 Population

The population of the study defines the limits within which the researcher's findings are applicable or are generalised. Thus the population of the study was made up of all midwives who have been trained through e-learning and the e-learning facilitators of the Ghana Health Service in Ashanti Region. With regards to the population, White (2005) explains that population is a collection of objects, events or individuals having some common characteristics that the researcher is interested in studying. According to McMillan and Schumacher (2010), a population is a group of elements or cases, whether individuals, objects, or events, that conform to specific criteria and to which we intend to generalize the results of the study. This group is also referred to as the target population or universe.

3.4.1.1 Target Population

According to Amin (2004), a target population is the population to which the study ultimately wants to generalize the results. He further explains that this target population may not be accessible to the researcher. The target population was made up of all the fifty (50)



midwives who have been trained through e-learning and the five (5) e-learning facilitators of the Ghana Health Service in Ashanti Region. The choice of midwives was made because at the time of the study, the Ghana Health Service was using e-learning to train only midwives.

3.4.2 Sample and Sampling Techniques

According to De Vos (1998) a sample is a group of subjects or situations selected from a larger population. A sample comprises the elements of the population considered for actual inclusion in the study. A sample can be viewed as a subject of measurements drawn from a population in which we are interested.

White (2005) notes that sampling means to make a selection from the sampling frame (a concrete listing of the elements in the population) in order to identify the people or issues to be included in the research. A sample is also described as a portion of the elements in a population. A key concept in sampling is representativeness. Unless the sample from which one will generalize, truthfully or faithfully represents the population from which it was drawn one has no reason to believe that the population has the same properties as those of the sample. The sampling techniques used are presented below:

3.4.2.1 Quantitative sampling technique

In using the quantitative research approach the study used all the 50 midwives who have been trained through e-learning. The sample size was determined by selecting all the 50 midwives who have been trained through e-learning in some selected municipals and districts hospitals of the Ghana Health Service in Ashanti Region. On the basis of this all the



50 midwives who have been trained through e-learning were purposively sampled. This selection is based on the assumption from Leedy and Ormod (2010) guidelines for selecting a sample size, which is referred to as the symbol N. That for smaller population, say, N=100 or fewer, there is little point in sampling; survey the entire population.

3.4.2.2 Qualitative sampling technique

In the case of selecting facilitators for in-depth information, purposive sampling technique was again used to select the only five (5) e-learning facilitators within the Ghana Health Service in Ashanti Region. The sample size was determined by selecting the five (5) e-learning facilitators comprising of the officer in charge of e-learning in the Ghana Health Service in Ashanti Region, the regional IT officer and three (3) IT tutors from Kumasi Nursing and Midwifery Training College, Pramso Nursing and Midwifery Training College and Mampong Nursing and Midwifery Training College respectively.

According to McMillan and Schumacher (1997) purposive sampling technique is based entirely on the judgment of the researcher, in that a sample is composed of elements that contain the most characteristics, representative or typical attributes of the population. On the basis of the researcher's knowledge of the population a judgment is made about which subjects should be selected to provide the best information to address the purpose of the research.

Mack, et al, (2011) claim purposeful sampling group participants according to preselected criteria relevant to a particular research question. Sampling sizes which may or may not be



fixed prior to data collection depend on the resources and time available, as well as the study's objectives. Purposive sampling is therefore most successful when data review and analysis are done in conjunction with data collection. Patricia (2008), states that there are two levels of sampling inherent in a case- study design. The first is the selection of the case to be studied; the second is the sampling of the people within the case.

3.5 DATA COLLECTION INSTRUMENTS

The study used the following instruments to collect data from the trained e-learning midwives and the facilitators of e-learning:

3.5.1 Quantitative data collection instrument

Questionnaires were used to collect the data from the participants. Closed-ended questions were used. The questionnaire consisted of five (5) sections (Section A, B, C, D and E) designed to assess the effectiveness of e-learning in training and development of midwives in the Ghana Health Service. In section A, biographical and demographic information (gender, age, qualifications, experience) was requested from the respondents. Section B of the instrument sought to measure the respondent's knowledge on the impact of e-learning on the professional development of staff. This section was further partitioned into seventeen (17) sub-sections (numbering 5 - 21) with each sub-section relating to one indicator or model of e-learning which constitutes the independent variable of the study. A four point-likert scale questions was provided with 4 representing strongly agree and 1 representing strongly disagree.



Also, section C of the instrument was well designed to assess respondent's attitudes towards e-learning as a learning tool. In this section, a four – point scale was provided for each statement, with 4 representing very positive and 1 representing very negative.

Section D also sought to measure the challenges to effective utilization of e-learning as a learning tool. A four – point scale was provided for each statement with 4 representing very positive and 1 representing very negative.

To add, section E was designed to assess ways of making e-learning effective in enhancing the professional development of staff. A four – point scale was provided for each statement just as in the sections above with 4 representing strongly agree and 1 representing strongly disagree.

Moreover, the questions and items were carefully stated in clear, simple and unambiguous language so as to facilitate the respondents' understanding and responses. The purpose of the study was taken in to consideration before constructing the instrument. In this light, the cognitive, affective and psychomotor domains of learning were equally taken care of in the instrument.

Finally, the questionnaire had a short letter addressed to the respondent. The letter had the name of the researcher, University, research domain, appeal for honest responses and an assurance of confidentiality. The instrument ends with a statement of appreciation to the respondent for participation.

According to Godwin and Harry (2009), a questionnaire is a set of systematically- structured questions used by a researcher to get needed information from respondents. A questionnaire



is any written instrument that presents respondents with a series of questions or statements to which they are to react either by writing out their answers or selecting from among existing answers. The questionnaire may be self-administered, posted or presented in an interview format. A questionnaire may include check lists, attitude scales, projective techniques, rating scales and a variety of other research methods. As an important research instrument and a tool for data collection, a questionnaire has its main function as measurement. According to Bird (2009), the questionnaire is a well-established tool within social science research for acquiring information on participant social characteristics, present and past behaviour, standards of behaviour or attitudes and their beliefs and reasons for action. The questionnaire is a popular and fundamental tool for acquiring information on knowledge and perception.

3.5.2 Qualitative data collection instrument

The study used face-to-face in-depth individual interviews to gather in-depth information about the view points and opinions of the respondents concerning the effectiveness of e-learning in training and development in the Ghana Health Service in Ashanti Region. Boyce and Neale (2006) opine that in-depth interviewing is a qualitative research technique that involves conducting intensive individual interviews with a small number of respondents to explore their perspectives on a particular idea, programme, or situation. In-depth interviews are useful when detailed information about a person's thoughts and behaviours or want to explore new issues in depth.



According to Joseph, et al, (2009) the interview is perhaps the most common form of data-gathering technique in the phenomenographical tradition. Many informative papers have been written on the theory and practice of data gathering through the phenomenographic interview. A contextualising statement serves the purpose of situating the interviewee as the ‘expert’ in the room.

In using the qualitative research approach the researcher developed an open-ended interview scheduled that would be used to collect data from the participants. An interview is a two-way conversation in which the interviewer asks the participant questions to collect data and to learn about the ideas, beliefs, news, opinions and behaviours of the participant (Maree, 2007).

An interview guide or “schedule” has to be prepared to ensure that basically the same information is obtained from each person there are no pre-determined inquiry responses in semi-structured interviews as the interviewer is free to probe and explore within predetermined inquiry areas. Interview guides ensure good use of limited interview time; they make interviewing multiple subjects more systematic and comprehensive, and they help to keep interactions focused. Interviewing guides can be modified over time to focus attention on areas of particular importance, or to exclude questions the researcher finds to be unproductive for the goals of the researcher (Marie, 1997). Gajendra and Kanka (1990) defined an interview as a conversation between two or more people where one or more of the participants take the responsibility for reporting the substance of what is said. It represents an interaction between three elements: the interviewer, the interviewee and the context of the interview including the questions raised in the interview.



3.6 DATA COLLECTION PROCEDURE

Permission was sought from the authority of the Ghana Health Service in Ashanti Region. In seeking the permission, managers, workers and facilitators were briefed about the documents to be used. Arrangements were made with the respondents and a common date and the procedures to be followed on that day were agreed upon. It was made sure that the activities and civilian roles at the Health Service were not disrupted by the study.

Questionnaires were distributed to all the participants of the sampled midwives. Some of the questionnaires were distributed to the respondent's within Kumasi at their place of work and some in their homes. Questionnaires were also sent via whatsapp in a picture format (jpeg format) to respondents outside Kumasi.

Clarification on the questions was made to participants. The questionnaires contained necessary introductory paragraph to help set the scene and guide participants towards answering the questions. Not only did the directions help clarified questions and procedures, but they also served to maintain motivation. Initially, a direct approach was used through physical contact and on phone as a step to building rapport and to motivate the participants to answer the questionnaires. To ensure a high rate of participation the study considered the approach, explanation, respect, trust and friendliness with the participants.

Finally, in all the hospitals and homes visited, the questionnaires were completed immediately and handed to the researcher. Questionnaires sent via whatsapp were also completed and sent to the researcher on the same platform, respondents numbered each statement as it appeared on the questionnaire.



In using the qualitative approach and for the purpose of the study, the open-ended interviews were used to collect and gather the data from the participants. The researcher used note taking as a data collection tool to collect the data after the necessary permission had been obtained from the participants. The direct words of the participants were immediately writing down when the interview began. According to Stephen and Shane (2000) collecting data by means of field notes involves the researcher making free form of notes to record information he or she believes to be salient. The advantages of this form of data collection are that it is cheap and simple. Malcolm (2010) also states that making notes through an interview is cheap, relatively straightforward, and often effective.

According to Pamela and Susan (2008), decisions must be made about how many times one collects data. Data may be collected using a one- or two-shot design (such as post intervention only, or preintervention and post-intervention, respectively) versus continually collecting data over time (e.g., after weekly sessions) for an extended period. Yin (1994) states that the three principles of data collection in a case study are:

- i. Use of multiple sources of evidence: This includes the use of triangulation; which involves searching converging findings from different sources. This increases construct validity.
- ii. Creating a case study data base: A data base separate from the final report ought to be written, containing: case study notes (clear and available for later use), case study documents, tabular materials (collected and created) and narratives (initial open-ended answers to the study questions suggested by investigators).



- iii. Maintaining a chain of evidence: The link between initial study questions and case study procedure should be pointed out in the case-study protocol, as well as the circumstances of the evidence to be collected one has to put the data collection into practice on the basis of the protocol, actual evidence storage in the database is saved for later checks (specific collection circumstances indicated) and there needs to be sufficient citing of the case study data base & evidence in the final report and conclusions to be drawn.

3.7 DATA ANALYSIS

The analytical methods used in the study are:

3.7.1 Quantitative analysis

The Statistical Product and Service Solution (SPSS), version 20.0 was used to analyze the data collected from the midwives. Participants' responses were coded into the SPSS and the data was double checked for errors. The SPSS basically uses frequency distribution tables, graphical representation of data such as bar graphs, histograms and line graphs as well as measures of central tendency such as mode, median and means (Johnson & Christensen, 2008).

The analysis of quantitative data involved two major steps:

- i. Preparation stage: Here, data was logged into the computer and analyzed using the Statistical Product and Service Solution (SPSS) version 20. This statistical product is designed to analyze, display and transform data collected from the field.
- ii. Organization Stage: At this stage data organization was developed and documented into a database structure that integrated the various measures presented in the data.



The use of descriptive statistics to analyze the responses of the respondents was to answer questions about how participants viewed issues within a given context and helps readers to have an idea of the typical values in the data and how these varied. It was also used to help readers of this work construct a mental picture of the relationship between the data and the phenomena under study. The survey as already seen used a questionnaire that was carefully designed for the midwives as the main instrument for data collection. This instrument was administered in the various hospitals and homes that constituted the sample of the study. It is also important to note that this phase of the study generated quantitative data. The data obtained from the 4-point Likert scale questions of the survey were analyzed using SPSS software. Frequency distribution tables were used to describe socio-demographic data and multiple variables such as nonparametric correlations analysis using Spearman's rho coefficient and reliability analysis were also used to describe the data. According to Muis (2004) there are several other computer-based packages in analyzing data (example SAS, BMDP, etc.) but the SPSS is by far the most common package used in educational research. The SPSS is user friendly and most preferred by most institutions of higher education.

McMillan and Schumacher (2006), state that quantitative data are summarized using simple descriptive statistics. One of the reasons why SPSS was used is that it is convenient for both novice and professionals or experienced researchers.

The data collected was organized according to items as they appear under sections in each questionnaire; the answers were tabulated item by item. Frequency and percentage analysis of the data were made and presented on tables. The data was analysed by comparing the

answers of trainees and workers on the various items using frequency and percentage analysis. Attempts were made to relate findings with existing theories on perception of e-learning by trainee workers and facilitators.

3.7.2 Qualitative analysis

After the field notes were collected from the site analysed, the collected data was thematically developed by code, categorising them and developing themes from the data. Analyses of data obtained from interviews were done through identifying common themes from the respondents' description of their experiences. Irrelevant information was separated from relevant information in the interviews. The relevant information was broken into phrases or sentences, which reflected a single specific thought. The phrases or sentences were further grouped into categories that reflected the various aspects of meanings. The various meanings identified were used to develop an overall description as seen by the respondents (McMillan & Schumacher, 1997).

Joseph et al, (2009) state that a qualitative data-analysis process commences with saturation exposure to the interview data and finishes with a set of descriptive categories which faithfully describe the conceptions of research participants. Categories of description are the researcher-generated ways of describing the qualitatively-different ways of experiencing a phenomenon, derived from the participants' conceptions. Each category of description is labeled as a description of a concept by participants.



Mouton (2000) also notes that data analysis begins when the study puts into one category all the material from the interviews that speak to one theme or concept. The study further compares material within the categories to look for variations and nuances in meanings and again compares material across the categories to discover connections between themes. The data analysis is complete when the researcher feels that he or she can share with others what the interpretation means for policy making, for theory and for understanding the social and political world.

3.8 ETHICAL CONSIDERATIONS

3.8.1 Permission

Permission to conduct the research at the Health Service was sought from the managers and those in authority. People in authority were given a written form that described the research and also asked those in authority to grant permission to conduct the research. Maree (2010) highlights that, essential ethical aspect which is the issue of the confidentiality of the results and findings of the study and the protection of the participants' identities. This could include obtaining letters of consent, obtaining permission to be interviewed, undertaking to destroy audiotapes, and so on. White (2005) opines that ethics are generally considered to deal with beliefs about what is right or wrong, proper and improper, good or bad; it is a set of moral principles which is suggested by an individual or group, is subsequently widely accepted, and offers rules and behavioural expectations about the most correct conduct towards experimental subjects and respondents, employers, sponsors, other researchers, assistants and students.



According to Hobson and Townsend (2012) ‘ethic’ is a moral principle or a code of conduct which governs what people do. It is concerned with the way people act or behave. The term, ‘ethics’ usually refers to the moral principles and guiding conduct, which are held by a group or even a profession. Ethical concerns should be at the forefront of any research project and should continue through to the write-up and dissemination stages. Mack et al, (2011) explain that ethical decisions will depend on the values of the study and the communities and will inform the negotiation which takes place between the researchers, sponsors, research participants and those who control the access to information which the researchers seek. The amount of control the researchers can exercise over the research process will also influence the exercise of ethical decisions themselves.

3.8.2 Informed Consent

Participants and their managers were given written forms that described the research and also asked them to sign the forms to document their consent to participate in the study. The study considered the needs and concerns of the study participants and also ensured that appropriate oversight for the conducting of research took place; a basis for trust was established between the researcher and the study participants. The well-being of the participants was given a top priority. The participants were assured that the research would be sacrificed if there was a choice between doing harm to the research and doing harm to the participants.

Louis, Lawrence, and Keith (2009) define informed consent as the procedures in which individuals choose whether to participate in an investigation after being informed of facts that would be likely to influence their decisions. The study therefore will explain the



procedures and purposes of the research to the participants, the study will give a description of the risk, if any that will be encountered, and will tell the participants they are free to withdraw consent and to discontinue participation in the study at any time without prejudice.

According to Louis et al, (2009) the principle of informed consent arises from the subjects' right to freedom and self-determination. Consent thus protects and respects the right of self-determination and places some of the responsibility on the participants should anything go wrong in the research. As part of the right to self-determination, the subjects have the right to refuse to take part, or to withdraw once the research has begun.

Mack et al, (2011) conclude by pointing out that individual informed consent may be written or oral:

- i. Written consent: This means that a person receives a written form that describes the research and then signs the form to document his or her consent to participate.
- ii. Oral consent: This means that a person receives all of the information needed for consent either orally or in writing and then orally consents to participate. The participant does not sign a consent form; this is often described as waiving the requirement for documentation of informed consent. Oral consent is generally acceptable for research with minimal risks, or where a loss of confidentiality is the primary risk and a signed consent form would be the only piece of identifying information for study participants.



3.8.3 Anonymity

Promised was made not to identify a given response with a given respondent. The study strived to ensure the anonymity of the research participant and to protect the participants from any kind of exploitation. According to White (2005) anonymity means a researcher should not identify a given response with a given respondent. Participants' responses should be identified and represented by means of alphabetical letters and not by their identities or names.

3.8.4 Confidentiality

It was explained to participants that if a given participant's response could be identified it would not be made public. Participants were assured that information that would embarrass them or endanger their friendships and jobs would not be revealed. White (2005) explains that with confidentiality a researcher does not identify publicly any given responses to a given participant. Information that will embarrass participants too should not be revealed to the public. The study should also protect the boundaries surrounding the shared space between him and the study participants.

3.8.5 Voluntary participation

This entails applying the principles of informed consent and thus ensuring that participants freely choose to take part (or not to take part) in the research and guarantees that exposure to risk is undertaken knowingly and voluntarily. The research therefore will give participants enough time to freely choose to take part in the study (or not to take part) in the study.



Participants will also be informed of any risk associated with taking part in the study (White, 2005).

3.8.6 Harm to respondents:

Participants were assured that information that would embarrass them or endanger their friendships and jobs will not be revealed. Participants were made to understand the nature of the research by giving the participant's ample time between the request for participation and the decision time. The study considered the needs and concerns of the study participants and ensured that appropriate oversight for the conducting of research took place; also, a basis of trust was established between the researcher and the study participants. The well-being of the participants was a top priority. Furthermore, participants were assured that the research would be sacrificed if there were to be a choice between doing harm to the research and doing harm to the participants (White, 2005).

3.9 VALIDITY AND RELIABILITY

These were ensured in the following ways:

3.9.1 Validity

Content – related evidence was collected to check the validity of the instrument. The first draft of the instruments (questionnaire and interview guide) were prepared and sent to the supervisor. The instruments were given along with the objectives of the study. A concept mapping, which clearly defines the variables to be measured and a description of the sample, was attached to the instruments. This was to ensure that the content of the instrument was appropriate, comprehensive and capable of measuring the variables. After reviewing the



instrument, the supervisor made some corrections and suggestions. The corrections were effected with the incorporated suggestions for improvement in to the final instruments.

According to Louis et al, (2002), validity is a demonstration that a particular instrument measures what it purports to measure. In quantitative research validity might be improved through careful sampling, appropriate instrumentation and appropriate statistical treatments of the data. White (2005) states that by validity it is understood that the researcher's conclusion-true or correct-correspond to the actual state in reality. Internal validity is the degree to which the design of an experiment controls extraneous variables. External validity concerns whether the results of the research can be generalized to another situation: population, different subjects, settings, times and occasions.

3.9.2 Pilot Study

In order to check whether the questions and items were to be understood by the participants, a pilot study was conducted. This was done by administering the questionnaires and the interview guide to ten (10) midwives and three (3) e-learning facilitators respectively. After analysing the responses for the pilot study, the study identified no difficulties with the participants in understanding the questions and items. This gave him confidence and courage to administer the instrument to the actual sample of the study.

According Edwin and Vanora (2001), the term pilot study is used in two different ways in social science research. It can refer to so-called feasibility studies which are "small scale version[s], or trial run[s], done in preparation for the major study". However, a pilot study



can also be the pre-testing or 'trying out' of a particular research instrument. Thus pilot studies are conducted for a range of different reasons:

- Developing and testing adequacy of research instruments;
- Assessing the feasibility of a (full-scale) study/survey;
- Designing a research protocol;
- Assessing whether the research protocol is realistic and workable;
- Establishing whether the sampling frame and technique are effective;
- Assessing the likely success of proposed recruitment approaches;
- Identifying logistical problems which might occur using proposed methods;
- Estimating variability in outcomes to help determining sample size;
- Collecting preliminary data;
- Determining what resources (finance, staff) are needed for a planned study;

3.9.3 Reliability

The instrument was tested for reliability using Cronbach alpha (α) coefficient before being used. The Cronbach coefficient of this study indicated that the scale that were used have a good internal consistency, that is, items that make up the used scale hang together. Therefore, the impact of e-learning scale, the e-learning attitudes scale and the challenge scale used seems to be a reliable measure of e-learning effectiveness.

According to Louis, et al, (2002), reliability is a measure of consistency over time and over similar samples. A reliable instrument for a piece of research will yield similar data from similar respondents over time. White (2005) defines reliability as the accuracy or precision of an instrument; as the degree of consistency or agreement between two independent



derived sets of scores; and as the extent to which independent administrations of the same instrument yield the same, or similar, results under comparable conditions.

3.10 CONCLUSION

The chapter three presented and discussed the research methodology used in this study. This includes: the research approaches, the research designs, the population and sampling, the research instruments, the data collection procedure, data analysis, ethical considerations, validity, reliability and the pilot testing of the instrument.

The next chapter is chapter four; that chapter will present the data analysis and discussions of the findings.



CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 INTRODUCTION

Chapter four presents an analysis of each of the following based on the participants' responses: biographic information, the impact of e-learning on the professional development of staff, the attitudes of staff towards e-learning as a learning tool, the challenges to effective utilization of e-learning as a learning tool, ways of making e-learning effective in enhancing the professional development of staff. The chapter will also present and discuss both the quantitative and qualitative findings of the data being analysed.

4.2 DATA PRESENTATION AND ANALYSIS

This section presents the data and results of the participants' responses.

4.2.1 QUANTITATIVE DATA PRESENTATION

4.2.1.1 BIOGRAPHIC INFORMATION OF THE PARTICIPANTS

4.2.1.1.1 Gender

TABLE 4.1: Gender of Respondents

	Frequency	Percent
Female	50	100
Total	50	100



Table 4.1 shows the gender distribution of the respondents. All the respondents were females midwives representing 100%. This is consistent with nursing and midwifery population where majority are females.

4.2.1.1.2 Age

TABLE 4.2: Age Distribution of Respondents

Age category	Frequency	Percent
Less than 30 years	26	52.0
30 years and above	24	48.0
Total	50	100

Table 4.2 shows the age distribution of the respondents. About 26 of the respondents representing 52% were less than 30 years old. Those who were above 30 years were 24 respondents which represented 48%.

4.2.1.1.3 Qualification

Table 4.3: Qualification of Respondents

Education qualification	Frequency	Percent
Certificate	26	52
Diploma	24	48
Total	50	100



Table 4.3 above shows the qualification distribution of the respondents. Majority of the midwives were certificate holders representing 52% with 48% representing diploma holders.

4.2.1.1.4 Experiences

Table 4.4: Respondents Experience in E-learning

	Frequency	Percent
Less than 2 years	30	60
Greater than 2 years	20	40
Total	50	100

Table 4.4 shows that all the respondents have had some level of e-learning experience. About 60% have had less than 2 years of experience with e-learning whilst 40% have had greater than 2 years of experience with e-learning.



4.2.1.2 Impact of e-learning on the professional development of staff at the Ghana Health Service in Ashanti Region

Table 4.5: Frequency distribution for impact of e-learning on the professional development

Statement	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly disagree (%)
E-learning educate midwives who are not able to attend a college or university due to geographical or time constraints	56	42	0	2
The Health Service uses e-learning to train, improve the knowledge base and skills of employees	58	42	0	0
E-learning has a significant influence on the professional development of workers at the health service	50	50	0	0
E-development tends to cut down total cost of the training on the one hand, it also increases overall productivity of employees	34	64	2	0
E-learning reduces travel time or time off to complete the off-the-job components of the	66	32	0	2





training.				
E-learning enhances face-to-face contact in learning	38	30	26	6
E-learning improves teacher-student communication	22	56	22	0
E-learning enhances greater employer interest and higher levels of student satisfaction.	40	58	2	0
E-learning can bring about flexibility to workers in terms of balancing home, life and work commitments.	48	38	14	0
There is active participation in e-learning platform	38	52	10	0
E-learning promotes peer tutoring	46	46	8	0
There is common understanding among trainees (learners) in e-learning platform	44	48	8	0
Text presentation is user-friendly	64	26	0	0
Graphical presentation in e-learning facilitates learning	56	44	0	0
Videos presentations enhances learning	76	24	0	0
Pictorial presentations enhances learning	76	24	0	0
Audio presentation sustains learning	60	36	2	2

Table 4.5 reflects the frequency distribution for the impact of e-learning on the professional development of midwives. The table shows that 56% of the respondents strongly agreed that e-learning educate midwives who are not able to attend a college or university due to geographical or time constraints, about 42% agree that that e-learning educate midwives who are not able to attend a college or university due to geographical or time constraints, none of the respondents disagree with the statement that e-learning educate midwives who are not able to attend a college or university due to geographical or time constraints, and 2% strongly disagreed that e-learning educate midwives who are not able to attend a college or university due to geographical or time constraints,

The Table also shows that 58% of the respondents strongly agreed that the Health Service uses e-learning to train, improve the knowledge base and skill of employees, about 42% of the respondents agreed that the Health Service uses e-learning to train, improve the knowledge base and skill of employees and none of the respondents either strongly disagreed or disagreed that the Health Service uses e-learning to train, improve the knowledge base and skill of employees.

Table 4.5 also shows that 50% of the respondents strongly agreed that e-learning has a significant influence on the professional development of workers at the health service, about 50% also agreed to the statement and none of the respondents either disagreed or strongly disagreed with the statement that e-learning has a significant influence on the professional development of workers at the health service.



The Table 4.5 also shows that 34% of the respondents strongly agreed that e-development tends to cut down total cost of the training on the one hand, it also increase overall productivity of employees, about 64% of the respondents also agreed that e-development tends to cut down total cost of the training on the one hand, it also increase overall productivity of employees, only 2% of the respondents disagreed that e-development tends to cut down total cost of the training on one hand, it also increase overall productivity of employees and none of the respondents has strongly disagreed that e-development tends to cut down total cost of the training on the one hand, it also increase overall productivity of employees.

Furthermore, the Table 4.5 shows that 66% of the respondents strongly agreed that e-learning reduces travel time or time off to complete the off-the-job components of the training, again, the table shows that 32% of the respondents agreed that e-learning reduces travel time or time off to complete the off-the-job components of the training, none of the respondents disagreed with the statement but 2% strongly disagreed that e-learning reduces travel time or time off to complete the off-the-job components of the training.

It also shows in the Table 4.5 that, 38% of the respondents strongly agreed that e-learning enhances face-to-face contact in learning, about 30% of the respondents agreed to that, 26% of the respondents disagreed that e-learning enhances face-to-face contact in learning and 6 of the respondent strongly disagreed that e-learning enhances face-to-face contact in learning, E-learning enhances face-to-face contact in learning when synchronous e-learning in used in training.



The Table 4.5 also depicts that 22% of the respondents strongly agreed that e-learning improves teacher-student communication, 56% of the agreed to the same statement, 22% of the respondent disagreed that e-learning improves teacher-student communication, while none of the participants strongly disagreed that e-learning improves teacher-student communication. E-learning improves teacher-student communication when the two categories of e-learning are used (synchronous and asynchronous).

It also shows in the above Table 4.5 that 40% of the respondents strongly agreed that e-learning enhances greater employer interest and higher levels of student satisfaction, about 48% of the respondent agreed that e-learning enhances greater employer interest and higher levels of student satisfaction, 2% of the them disagreed that e-learning enhances greater employer interest and higher levels of student satisfaction, while none of them strongly disagreed to the statement that e-learning enhances greater employer interest and higher levels of student satisfaction.

Furthermore, the Table 4.5 above shows that 48% of the respondents strongly agreed that e-learning can bring about flexibility to workers in terms of balancing home, life and work commitments, 38% of the respondents also agreed that e-learning can bring about flexibility to workers in terms of balancing home, life and work commitments, about 14% of the respondent disagreed that e-learning can bring about flexibility to workers in terms of balancing home, life and work commitments, while none of the participants strongly disagreed that e-learning can bring about flexibility to workers in terms of balancing home, life and work commitments.



The Table 4.5 also depicts that 38% of the respondents strongly agreed that there is active participation in e-learning platform, about 52% of them agreed that there is active participation in e-learning platform, also 10% of the participants disagreed with the statement that there is active participation in e-learning platform, while none of the participants strongly disagreed that there is active participation in e-learning platform.

Table 4.5 above also shows that 46% of the respondents strongly agreed and 46% of the respondents also agreed that e-learning promotes peer tutoring, 8% of the respondents strongly disagreed that e-learning promotes peer tutoring, while none of the respondents strongly disagreed that e-learning promotes peer tutoring.

It also shows in Table 4.5 that 44% of the respondents strongly agreed that there is common understanding among trainees (learners) in e-learning platform, about 48% of them also agreed that that there is common understanding among trainees (learners) in e-learning platform, 8% of the respondents disagreed that that there is common understanding among trainees (learners) in e-learning platform, while none of the respondents strongly disagreed that there is common understanding among trainees (learners) in e-learning platform.

The Table 4.5 again shows that 64% of the respondents strongly agreed that text presentation is user-friendly, while 26% agreed that that text presentation is user-friendly. None of the participants either strongly disagreed or disagreed to the statement that that text presentation is user-friendly.



Table 4.5 also depicts that 56% of the respondents strongly agreed that graphical presentation in e-learning facilitates learning, while 44% agreed that graphical presentation in e-learning facilitates learning. None of the participants either disagreed or strongly disagreed to the statement that graphical presentation in e-learning facilitates learning.

Table 4.5 also shows that 76% of the respondents strongly agreed that videos presentations enhance learning while 24% of the respondents agreed that videos presentation enhances learning. None of the respondents either disagreed or strongly disagreed with the statement that videos presentation enhances learning.

Again, Table 4.5 depicts that 74% of the respondents strongly agreed that pictorial presentations enhances learning while 24% agreed that pictorial presentations enhances learning. None of the respondents either disagreed or agreed to the statement that pictorial presentation enhances learning.

Lastly, Table 4.5 shows that 60% of the respondents strongly agreed that audio presentation sustains learning, while 36% agreed that audio presentation sustains learning. About 2% of respondents disagreed that audio presentation sustains learning, while none of the participants strongly disagreed with the statement that audio presentation sustains learning.



4.2.1.3 The attitudes of staff at Ghana Health Service in Ashanti Region towards e-learning as a learning tool

Table 4.6: Frequency distribution for attitudes of staff towards e-learning as a learning tool

Statement	Very Positive (%)	Positive (%)	Negative (%)	Very Negative (%)
I am interested in using e-learning	58	40	2	0
E-learning helps me to manage time well	58	42	0	0
With e-learning, I feel responsible for my own learning in this information age	60	36	4	0
The use of e-learning has improved my management skills	66	28	6	0
The use of e-learning has reduced the cost of my training	30	52	14	4
I believe the use of e-learning to learn is very important for my career	70	26	4	0
E-learning has enabled me to learn where and when I want	76	20	4	0
E-learning helps me to reflect on how I work	42	52	6	0
E-learning helps me to work with others in a given context	36	64	0	0



Table 4.6 shows the frequency distribution for attitudes of staff towards e-learning as a learning tool. The table depicts that 58% of the respondents' interests in using e-learning were very positive while 40% of the respondents' interests in using e-learning were positive. About 2% of the respondents' interests in using e-learning were negative while none of the respondent's interest in using e-learning was very negative.

The Table 4.6 also shows that 58% of the respondents were very positive that e-learning helps them to manage time well while 42% of the respondents were positive that e-learning helps them to manage time well. None of the respondents was either negative or very negative that e-learning does not help him or her to manage time well.

Furthermore, the Table 4.6 shows that 60% of the respondents were very positive that with e-learning, they feel responsible for their own learning in the information age while 36% of the respondents were positive that with e-learning, they feel responsible for their own learning in the information age. Also, 4% of the respondents were negative that with e-learning, they do not feel responsible for their own learning in the information age while none of the respondents was very negative that with e-learning, she does not feel responsible for her own learning in the information age.

The Table 4.6 also depicts that 66% of the respondents were very positive that the use of e-learning has improved their management skills while 28% of the respondents were very positive that the use of e-learning has improved their management skills. About 6% of the respondents were negative that the use of e-learning has not improved their management



skills while none of the respondents was very negative that that the use of e-learning has not improved his or her management skills.

Table 4.6 again shows that 70% of the respondents were very positive that the use of e-learning to learn is very important for their career while 26% of the respondents were positive that the use of e-learning to learn is very important for their career. About 4% of the respondents were negative that the use of e-learning to learn is not very important for their career, while none of the participants were very negative that the use of e-learning to learn is not important for their career.

Furthermore, Table 4.6 depicts that 76% of the respondents were very positive that e-learning has enabled them to learn where and when they want while 20% of the participants were positive that e-learning has enabled them to learn where and when they want. About 4% of the participants were negative that e-learning has not enabled them to learn where and when they want, while none of the participants were very positive that e-learning has not enabled them to learn where and when they want.

Also, the Table 4.6 reflects that 42% of the participants were very positive that e-learning helps them to reflect on how they work while 52% of the participants were positive that e-learning helps them to reflect on how they work. About 6% of the respondents were negative that e-learning did not help them to reflect on how they work, while none of the participants were very positive that that e-learning did not help them to reflect on how they work.



Lastly, the Table 4.6 depicts that 36% of the participants were very positive that e-learning helps them to work with others in a given context, while 64% of the participants were positive that e-learning helps them to work with others in a given context. None of the participants were either negative or very negative that e-learning helps them to work with others in a given context.

4.2.1.4 Challenges to effective utilization of e-learning as a learning tool at the Ghana Health Service in Ashanti Region

Table 4.7: Frequency distribution for challenges to effective utilization of e-learning as a learning tool

Statement	Very Positive (%)	Positive (%)	Negative (%)	Very Negative (%)
There is inadequate funding for e-learning programmes at the Health Service	46	28	16	10
There are less specialized facilitators for e-learning courses at the health services	32	48	8	12
High cost of Internet services is a challenge in effective e-learning	54	24	10	12
Lack of interest by some workers is a challenge in effective e-learning	54	26	10	10



Poor implementation of IT projects in the health service contribute to poor e-learning	46	32	6	16
Recurrent power failure is a challenge in effective e-learning	50	30	10	10
Poor management involvement is a barrier to e-learning at the Health Service	38	38	16	8

Table 4.7 shows the frequency distribution for challenges to effective utilization of e-learning as a learning tool. The table shows that 46% of the participants were very positive that there is inadequate funding for e-learning programmes at the Health Service, while 28% of the participants were positive that there is inadequate funding for e-learning programmes at the Health Service. About 16% of the participants were negative that there is inadequate funding for e-learning programmes at the Health Service, while 10% of the participants were very negative that there is inadequate funding for e-learning programmes at the Health Service.

Table 4.7 shows that 32% of the participants were very positive that there are less specialized facilitators for e-learning courses at the Health Service while about 48% of the participants were positive that there are less specialized facilitators for e-learning courses at the Health Services. About 8% of the participants were negative that there are less specialized facilitators for e-learning courses at the Health Service, while none of the participants was very negative that there are less specialized facilitators for e-learning courses at the Health Service.



The Table 4.7 also shows that 54% of the participants were very positive that high cost of internet services is a challenge in effective e-learning, while 24% of the participants were positive that high cost of internet services is a challenge in effective e-learning. About 10% of the participants were negative that high cost of internet services is a challenge in effective e-learning, while 12% of the participants were very positive that high cost of internet services is a challenge in effective e-learning.

The Table 4.7 also depicts that 54% of the participants were very positive that lack of interest by some workers is a challenge in effective e-learning, while 26% of the participants were positive that lack of interest by some workers is a challenge in effective e-learning. About 10% of the participants were negative that lack of interest by some workers is a challenge in effective e-learning and another 10% of the participants were very negative that lack of interest by some workers is a challenge in effective e-learning.

Furthermore, Table 4.7 indicates that 46% of the participants were very positive that poor implementation of IT projects in the Health Service contributes to poor e-learning, while 32% of the participants were very positive that poor implementation of IT projects in the Health Service contributes to poor e-learning. About 6% of the participants were negative that poor implementation of IT projects in the health service contributes to poor e-learning, while 16% of the participants were very negative that poor implementation of IT projects in the Health Service contributes to poor e-learning.



The Table 4.7 also shows that 50% of the participants were very positive that recurrent power failure is a challenge in effective e-learning, while 30% of the participants were positive that recurrent power failure is a challenge in effective e-learning. About 10% of the participants were negative to the statement that recurrent power failure is a challenge in effective e-learning, also 10% of the participants were very negative to the statement that recurrent power failure is a challenge in effective e-learning.

Lastly, the Table 4.7 depicts that 38% of the participants were very positive that poor management involvement is a barrier to e-learning at the Health Service, while 38% of the participants were positive that poor management involvement is a barrier to e-learning at the Health Service. About 16% of the participants were negative to the statement that poor management involvement is a barrier to e-learning at the Health Service, while 8% of the participants were very negative to the statement that poor management involvement is a barrier to e-learning at the Health Service.



4.2.1.5 Enhancing the effectiveness of e-learning to the professional development of staff at the Ghana Health Service in Ashanti Region

Table 4.8: Frequency distribution for enhancing the effectiveness of e-learning

Statement	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)
Computer based programmes should be more student-centred in their methods of instructions to enhance e-learning at the Health Service	72	28	0	0
Teaching workers the skills to become independent learners can enhance their e-learning lessons	60	40	0	0
Student-student interaction is a key component on online courses	52	36	12	0
Active and deep participation can ensure effective e-learning	72	28	0	0

Table 4.8 shows the frequency distribution for enhancing the effectiveness of e-learning. The Table 4.8 depicts that 72% of the participants strongly agreed that computer based programmes should be more student-centred in their methods of instructions to enhance e-learning at the Health Service, 28% of the participants also agreed that computer based



programmes should be more student-centred in their methods of instructions to enhance e-learning at the Health Service. None of the participants either disagreed or strongly disagreed that computer based programmes should be more student-centred in their methods of instructions to enhance e-learning at the Health Service.

It also shows in Table 4.8 that 60% of the participants strongly agreed that teaching workers the skills to become independent learners can enhance their e-learning lessons, 40% of the participants agreed that teaching workers the skills to become independent learners can enhance their e-learning lessons. None of the participant either disagreed or strongly disagreed that teaching workers the skills to become independent learners can enhance their e-learning lessons.

Table 4.8 also shows that 52% of the participants strongly agreed that student-student interaction is a key component on online courses, 36% of the participants also agreed that student-student interaction is a key component on online courses. About 12% of the participants disagreed that student-student interaction is a key component on online courses, while none of the participants strongly disagreed that student-student interaction is a key component on online courses.



Table 4.9: Nonparametric Correlations analysis using Spearman's rho Coefficient

Statement		IEL	ASE	CEE
Impact of e-learning (IEL)	Coefficient	1.00		
	Sig. (2-tailed)	.		
Attitude of staff towards e-learning (ASE)	Coefficient	0.45^{**}	1.00	
	Sig. (2-tailed)	0.001	.	
Challenges to effective e-learning (CEE)	Coefficient	0.44^{**}	0.53^{**}	1.00
	Sig. (2-tailed)	0.002	0.000	.
Ways of making e-learning effective (MEE)	Coefficient	0.25	0.58^{**}	0.24
	Sig. (2-tailed)	0.078	0.000	0.10

Table 4.9 shows the Nonparametric Correlations analysis using Spearman's rho Coefficient. The correlation analysis is between the four main classes of statement. Correlation coefficient significant at 0.01%. Correlation coefficient significant at 0.05%. There was a strong positive correlation between impact of e-learning and attitude of staff towards e-learning ($r=0.45$, $p=0.001$) and also between impact of e-learning and challenges to effective e-learning ($r=0.44$, $p=0.002$). Again, there were strong positive correlation between attitude of staff towards e-learning and challenges to effective e-learning ($r=0.53$, $p=0.000$) and between attitude of staff towards e-learning and ways of making e-learning effective ($r=0.58$, $p=0.000$).



Table 4.10: Summary of Reliability Analysis

Statements	Cronbach's Alpha	Sig
Impact of e-learning	0.716	0.001
The attitude of staff towards e-learning	0.667	0.001
The challenges to effective utilization of e-learning	0.911	0.455
Ways of making e-learning effective	0.104	0.006

Cronbach alpha values for the impact of e-learning on professional development of staff and attitude of staff towards e-learning of 0.72 and 0.67 suggest that the responses given were consistent. Ways of making e-learning effective was 0.10; suggesting a poor internal consistency. This is possibly because of the limited statements used or probably a misunderstanding and misinterpretation of the statements. But for the challenge, a Cronbach alpha value of 0.91 shows internal consistency which is high but not significant, meaning, a significant response could have been obtained if the statements were more diverse or increased.

4.3 QUALITATIVE DATA PRESENTATION

1. Does the Health Service in Ashanti Region use e-learning as a form of learning tool to train and develop workers? Explain.

Participants responded to this question by stating that yes the Health Service in Ashanti Region uses e-learning as a form of learning tool to train and develop workers but that was in a partial state. Participants also claimed that due to lack of funds for logical support the Health Service in Ashanti Region are unable to reach out to all out- service



staff. That the Health Service in Ashanti Region uses e-learning to train staff and students of the health service which serves as mean of enhancing the competency, knowledge and skills of the staff. The following excerpt confirms these responses:

Respondent A (Facilitator): *Yes but partially. It is part of the agenda of Ghana Health Service to train and develop e-learning competences among health workers, but due to lack of funds for logical support they are unable to reach out to all out- service staff*

2. How does the use of e-learning as a tool of learning impact on the professional development of staff at the Health Service?

With reference to this question, participants asserted that e-learning is used to bridge the knowledge gap as far as midwifery and nursing skills are concerned within the health profession. Participants claimed e-learning helps a practitioner to access vital information and also make pictorial and videos available which has contributed to the development of staff in terms of training and development. It was also highlighted that e-learning has improved the attitude, skills and knowledge of the health service staff and has also helped to reduce the gap of knowledge or know-how between the midwifery and nursing. The following example confirms these responses:

Respondent D (Facilitator): *The use of e-learning in the health profession has helped to reduce the gap of knowledge or know-how between the midwifery and nursing.*

3. How do workers in the Health service evaluate the effectiveness of e-learning as a medium for learning and for their professional development?

It was asserted by participants that each student or active participant on the e-learning platform is assigned a supervisor who regularly assesses the students and that the



implementation of e-learning has made it possible for information to be available. The following excerpt confirms these assertions:

Respondent B (Facilitator): *Each student or active participant on the e-learning platform is assigned a supervisor who regularly assesses the students.*

4. What are the common attitudes of staff at the Health Service towards e-learning as a learning tool?

The common attitudes of staff at the Health Service towards e-learning as a learning tool mentioned by participants were that staff all embraced the system but there is a little apathy in some staff due to technology phobia and reluctant in e-learning, most staff do not have concerns because they lack computers and computing skills and some staff do not show interest because they lack basic computer skills. The following example supports these mentions:

Respondent C (Facilitator): *Some staff members have welcomed it but there is also a few who are reluctant in embracing e-learning due to technology phobia.*

5. Do you think e-learning is well utilized as a form of learning to train and to develop workers professionally at the Health Service?

The opinions from the participants with regards this question were that not at all, it is rather an auxiliary alternative to learning among health staff/students, e-learning has come to eliminate stress by sharing or sending information through computers and e-learning has made it possible for trainees or staff to learn on their own by using the modules. The example below confirms these opinions:



Respondent E (Facilitator): *Yes, because e-learning has made it possible for trainees or staff to learn on their own by using the modules.*

6. What are the challenges to effective utilization of e-learning as a learning tool at the Ghana Health Service?

The challenges to effective utilization of e-learning as a learning tool at the Ghana Health Service mentioned by the participants were: Poor internet access, poor basic computer or IT knowledge or competences, lack of access to computers or laptops, inadequate skills among IT officers to develop learning modules on the e-learning platforms, very few specialized e-learning facilitators, high cost of internet, poor internet services or connectivity or lack of stable internet connectivity, lack of interest in using the internet. The excerpt below supports these mentions:

Respondent A (Facilitator): *These challenges include: Poor internet access, poor basic computer or IT knowledge or competences, lack of access to computers or laptops.*

7. How do you see the future of e-learning as a tool for learning and for the professional development of workers at the Health Service?

Participants had the following to say about the future of e-learning as a tool for learning and for the professional development of workers at the Health Service: It may be bright if there is absolute commitment from policy makers like the MOH/GHS to include e-learning in their curricula, it will be the leading trend of all manners of teaching and learning because every information can be found on the internet which makes e-learning very important and useful tool for learning and the future will be brighter if stakeholders can show more commitment by intensifying the use of e-learning in training of staff at the GHS. The example below supports these statements:



Respondent D (Facilitator): *I see it to be the leading trend of all manners of teaching and learning. Because every information can be found on the internet which makes e-learning very important and useful tool for learning.*

8. Could you please mention some of the possible ways of making e-learning an effective professional and developmental learning tool for the workers at the Health Service?

The possible ways mentioned by these participants as possible ways of making e-learning effective professional and developmental learning tool for the workers at the Health Service were: There should be the provision of reliable internet access at the training schools and hospitals, there should be the training of Health officials on the development of modules on the platform and there should be the provision of computers or laptops to staff even on hire purchase agreement. Participants also mentioned that there should be the provision of adequate computers, the provision of trained and professional e-learning facilitators to train staff and the provision of adequate internet service. It was also mentioned that there should be the training of more facilitators and by educating staff on the importance of using e-learning as a learning tool and the provision of stable internet connectivity (Wifi). The excerpt below confirms these mentions.

Respondent B (Facilitator): *There should be the provision of reliable internet access at the training schools and hospitals, there should be the training of Health officials on the development of modules on the platform and there should be the provision of computers or laptops to staff even on hire purchase agreement.*



4.4 DISCUSSIONS OF THE FINDINGS

The discussions that follow are presented in relations to the research objectives set to achieve in the study:

4.4.1 IMPACT OF E-LEARNING ON PROFESSIONAL DEVELOPMENT

It was revealed that 100% of the respondents agreed that e-learning educate midwives who are not able to attend a college or university due to geographical or time constraints. Also the study revealed that 100% of the respondent agreed that the Health Service uses e-learning to train, improve the knowledge base and skill of employees. It was also revealed that 50% of the respondents agreed that e-learning has a significant influence on the professional development of workers at the health service. Again, it was found that 98% of the respondents agreed that e-development tends to cut down total cost of the training on one hand, it also increase overall productivity of employees.

It was again revealed that within the Ghana Health Service in Ashanti Region e-learning is used to bridge the knowledge gap as far as midwifery and nursing skills are concerned within the health profession. It was also found that e-learning helps a practitioner to access vital information and also make pictorial and videos available which has contributed to the development of staff in terms of training and development. The study also revealed that e-learning has improved the attitude, skills and knowledge of the health service staff and has also helped to reduce the gap of knowledge or know-how between midwifery and nursing. The following claims came from facilitators: *The use of e-learning in the health profession has helped to reduce the gap of knowledge or know-how between the midwifery and nursing.*



The study also investigated to find out if the Health Service in Ashanti Region uses e-learning as a form of learning tool to train and develop workers. The findings were that the Health Service in Ashanti Region uses e-learning as a form of learning tool to train and develop workers but that was in a partial state. It was also revealed that due to lack of funds for logical support the Health Service in Ashanti Region are unable to reach out to all out- service staff. Another finding was that the Health Service in Ashanti Region uses e-learning to train staff and students of the health service which serves as mean of enhancing the competency, knowledge and skills of the staff. The following voice came from a facilitator: *Yes but partially. It is part of the agenda of Ghana Health Service to train and develop e-learning competences among health workers, but due to lack of funds for logical support they are unable to reach out to all out- service staff*

In connections with these findings, Naidu (2003) postulates that there are beliefs and the expectations that online learning will reduce costs and increase productivity and institutional efficiency.

These findings are confirmed by the Australian Flexible Learning Framework (2009), which claims that the flexibility offered through e-learning is particularly important to students wanting to upgrade their skills, to continue to work, or for people wanting to re-enter the workforce. The key benefits Australian students identify for e-learning include flexibility, choice, and the capacity to balance home, life and work commitments.



4.4.2 ATTITUDES OF STAFF TOWARDS E-LEARNING AS A LEARNING TOOL

The study revealed that 98% of the respondents' interests in using e-learning were very positive. It was also found that 98% of the respondents were very positive that e-learning helps them to manage time well. It was again found that 96% of the respondents were very positive that with e-learning, they feel responsible for their own learning in the information age. The study also found that 94% of the respondents were very positive that the use of e-learning has improved their management skills. It was also revealed that 96% of the respondents were very positive that the use of e-learning to learn is very important for their career. Furthermore, the study revealed that 96% of the respondents were very positive that e-learning has enabled them to learn where and when they want.

It was found in this study that the common attitudes of staff at the Health Service towards e-learning as a learning tool mentioned were that all staff embraced the system but there is a little apathy in some staff due to technology phobia and reluctant in e-learning, most staff do not have concerns because they lack computers and computing skills and some staff do not show interest because the lack basic computer skills and that. The words that follow were presented by a facilitator: *Some staff have welcomed it but there is also a few who are reluctant in embracing e-learning due to technology phobia.*

The study also found that each student or active participant on the e-learning platform is assigned a supervisor who regularly assesses the students and that the implementation of e-learning has made it possible for information to be available. The following assertion was made by a facilitator: *Each student or active participant on the e-learning platform is assigned a supervisor who regularly assesses the students.*



It was also revealed that e-learning is an auxiliary alternative to learning among health staff/students, e-learning has come to eliminate stress by sharing or sending information through computers and e-learning has made it possible for trainees or staff to learn on their own by using the modules. The opinion presented below came from a facilitator: *Yes, because e-learning has made it possible for trainees or staff to learn on their own by using the modules.*

To confirm these findings, Abdullah (2011), opines that some of the attitudes of workers are: e-learners are able to learn independently, at any time and everywhere, at any pace, reviewing what they have learned any time through more personalized approaches to learning, by choosing a suitable learning approach, receiving immediate feedback, and evaluating their own learning.

Based on these findings, Mezirow and Associates (2000) also assert that, it is very important in adulthood that people develop a more critical worldview as they seek ways to better understand their world. This means learning how to negotiate and take action on their own objectives, values, feelings and meanings rather than those they have uncritically taken in or learn from others. Thus developing more reliable attitudes, exploring and validating their faithfulness and making informed decisions are fundamental to e-learning as a new strategy or method of teaching and learning.

These results are consistent with previous research that asserts that, several variables are designed to measure attitude of students towards e-learning. This included attitude towards computers, learner computer anxiety, learner internet self-efficacy, e-learning course



flexibility, computer technology, internet quality, instructor feedback, diversity in assessment, perceived interaction with others and perceived easy to use. Also, the statistical analysis (independent sample t-test) of the aforementioned variables that influence learner satisfaction, show that males and females differed significantly in terms of satisfaction levels (Akimanimpaye, 2012).

4.4.3 CHALLENGES TO EFFECTIVE UTILIZATION OF E-LEARNING AS A LEARNING TOOL

It was found that 74% of the participants were very positive that there is inadequate funding for e-learning programmes at the health service. The study also found that 80% of the participants were very positive that there are less specialized facilitators for e-learning courses at the health services. It was also found that 78% of the participants were very positive that high cost of internet services is a challenge in effective e-learning.

The study also found that 80% of the participants were very positive that lack of interest by some workers is a challenge in effective e-learning. Furthermore, the study revealed that 78% of the participants were very positive that poor implementation of IT projects in the health service contributes to poor e-learning. Again, the study revealed that 80% of the participants were very positive that recurrent power failure is a challenge in effective e-learning. It was also found that 76% of the participants were very positive that poor management involvement is a barrier to e-learning at the health service.



The study also revealed the following as the challenges to effective utilization of e-learning as a learning tool at the Ghana Health Service: Poor internet access, poor basic computer or IT knowledge or competences, lack of access to computers or laptops, inadequate skills among IT officers to develop learning modules on the e-learning platforms, very few specialized e-learning facilitators, high cost of internet, poor internet services or connectivity, or lack of stable internet connectivity, lack of interest in using the internet. The assertion below was presented by a facilitator: *These challenges include: Poor internet access, poor basic computer or IT knowledge or competences, lack of access to computers or laptops.*

To support these findings, Alzahrani (2015) found somewhat unique challenges that higher education students in Saudi Arabia faced while using e-learning included a relative lack of knowledge of using e-learning because in secondary schools e-learning is not as commonly used as in some of the western nations. This newness to e-learning can be quite challenging for some students because they are burdened with not only learning higher level things in their subjects but learning it in a manner which is new to them. This puts the teacher into the centre of the learning process as he/she must facilitate the learning process for the students. This means that the teachers require deep knowledge of the usage of e-learning resources.

To also confirm the above findings, Kibinkiri (2014) in an investigation on the topic the role of e-learning on the professional development of student-teachers in Cameroon revealed that, the problem of inadequate Information and Communication Infrastructure, high cost of Internet services, lack of qualified electronic instructors, slow Internet lines or access speed,



lack of interest by some students and lecturers, poor implementation of IT projects in schools, lack of teacher flexibility and creativity, ineffective teacher training programmes on ICT, insufficient knowledge about e-learning (learning with ICTs), recurrent power failure, lack of ICT based curriculum development programme amongst others contribute the greatest impediments to effective e-learning in teacher education in Cameroon.

4.4.4 WAYS OF IMPLEMENTING E-LEARNING FOR THE REALISATION OF STAFF PROFESSIONAL DEVELOPMENT

The study found that 100% of the participants strongly agreed that computer based programmes should be more student-centred in their methods of instructions to enhance e-learning at the health service. It also revealed that 100% of the participants strongly agreed that teaching workers the skills to become independent learners can enhance their e-learning lessons. Lastly, the study found that 88% of the participants strongly agreed that student-student interaction is a key component on online courses.

The possible ways revealed in this study to make e-learning effective professional and developmental learning tool for the workers at the Health Service were: There should be the provision of reliable internet access at the training schools and hospitals, there should be the training of Health officials on the development of modules on the platform and there should be the provision of computers or laptops to staff even on hire purchase agreement. Participants also mentioned that there should be the Provision of adequate computers, the provision of trained and professional e-learning facilitators to train staff and the provision of adequate internet service. It was also mentioned that there should be the training of more



facilitators and by educating staff on the importance of using e-learning as a learning tool and the provision of stable internet connectivity (Wifi). A claim from a facilitator was: *There should be the provision of reliable internet access at the training schools and hospitals, there should be the training of Health officials on the development of modules on the platform and there should be the provision of computers or laptops to staff even on hire purchase agreement.*

The study revealed the following as the future of e-learning as a tool for learning and for the professional development of workers at the Health Service: It may be bright if there is absolute commitment from policy makers like the Ministry of Health/Ghana Health Service to include e-learning in their curricula, it will be the leading trend of all manners of teaching and learning because every information can be found on the internet which makes e-learning very important and useful tool for learning and The future will be brighter if stakeholders can show more commitment by intensifying the use of e-learning in training of staff at the Ghana Health Service. The below statements was presented by a facilitator: *I see it to be the leading trend of all manners of teaching and learning because every information can be found on the internet which makes e-learning very important and useful tool for learning.*

In the literature, Alzahrani (2015) claims that, effectiveness of e-learning rests in development of skills related to independent learning. This can be achieved by focusing broadly on teaching the students skills to become independent learners. This will broaden the scope of e-learning and will provide immense benefits to the human society for providers and policy makers to ensure that they can develop knowledge seeking and society awareness.



Alzahrani (2015) further revealed that, the mere adoption of internet as channel for delivery of education will not result in better outcomes but for this to happen computer based programmes should be more student-centred in their methods of instructions. However, it is the responsibility of the teachers to turn them from passive to active learners. In context of this research the learning which is blended, authentic, active and deep is effective learning.

4.5 CONCLUSION

The chapter four has presented an analysis of participants' responses based on each of the following: biographic information, the impact of e-learning on the professional development of staff, the attitudes of staff towards e-learning as a learning tool, the challenges to effective utilization of e-learning as a learning tool, ways of making e-learning effective in enhancing the professional development of staff, nonparametric correlations analysis was used and a summary of reliability analysis was also done to test the reliability of the study. The chapter has also presented and discussed both the quantitative and qualitative findings of the study.

The next chapter is chapter five; that chapter presents and discusses the summary, conclusion and recommendations of the study.



CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter will present a summary of the findings from the data collected and analysed using the questionnaire and the face-to-face interviews. Opinions, beliefs, understanding of the situation, feelings, attitudes and values that respondents answered and expressed about how e-learning as part of training and development at Ghana Health Service in Ashanti Region could be enhanced would be highlighted for proper intervention. This summary will be followed by the researcher's conclusions, limitations or shortcomings of the study as well as recommendations and suggestions for further studies.

5.2 SUMMARY OF THE STUDY

This research study was set out to investigate how e-learning as part of training and development in Ghana Health Service in Ashanti Region could be enhanced. E-Learning is increasingly recognized as an efficient method of delivering learning, the effectiveness of this (e-learning in training and development) of midwives in Ghana Health Service in Ashanti Region is what stakeholders have doubt about. It was therefore the aim of the work to find out how e-learning could enhance training and development in Ghana Health Service in Ashanti Region. Nowadays, employers desire to employ most advanced training methodologies for training of their employees as they prove to be more result oriented and cost effective. In this digital era, e-learning development is gaining huge popularity among both large and small sized organisations around the globe. E-learning development is a web based training system which helps to deliver a faster and consistent understanding of the training material.



The main research objectives of which this study addressed is: How could e-learning as part of training and development in Ghana Health Service in Ashanti Region be enhanced? The research objectives set to achieve in the study were:

- i. To assess the use of e-learning impact on the professional development of staff at the Ghana Health Service in Ashanti Region.
- ii. To assess the attitudes of staff at Ghana Health Service in Ashanti Region towards e-learning as a learning tool.
- iii. To evaluate the challenges that hinder the effective utilization of e-learning as a learning tool at the Ghana Health Service in Ashanti Region.
- iv. To determine how e-learning can be made effective to enhance the professional development of staff at the Ghana Health Service in Ashanti Region.

The aim of the literature review was to review existing literature on the effectiveness of e-learning in training and development of workers in various organisations. The literature review also presented and discussed each of the following: conceptualisation of e-learning, benefits of e-learning in organisations, attitudes of staff towards e-learning as a learning tool, challenges to effective utilization of e-learning as a learning tool, mechanisms and ways of implementing e-learning for the realisation of staff professional development and conclusion.

The study adopted the mixed method approach. This approach consisted of the quantitative and qualitative research approaches. The core assumption of this form of approach is that the combination of qualitative and quantitative approaches provides a more complete



understanding of a research problem than either approach alone. The research design used in this study was the triangulation, which involves the use of both quantitative and qualitative research designs in the study under investigation. The quantitative research design used was the survey and the qualitative research design used was the case study. The sampling techniques that were employed in the data collection include purposive sampling of all the 50 (midwives) in the quantitative research and in the case of the qualitative research, purposive sampling technique was again used to select five (5) e-learning facilitators within the Ghana Health Service in Ashanti Region.

Questionnaires were used to collect data from the fifty (50) midwives who participated in the study. The questionnaire consisted closed-ended questions. The researcher also used face-to-face in-depth individual interviews to gather in-depth information from the five (5) e-learning facilitators. The Statistical Package for Social Sciences (SPSS), version 20.0 was used to analyze the data collected from the midwives. The collected data from the interview was thematically analysed through the use of the manual method. Participants and respondents used in the study had understanding of the purpose of the study. They were frank and honest in their participation and responses. The main findings were:

- E-learning educate midwives who are not able to attend a college or university due to geographical or time constraints.
- The Health Service uses e-learning to train, improve the knowledge base and skill of employees.
- E-learning has a significant influence on the professional development of workers at the Health Service.



- E-development tends to cut down total cost on training on the one hand; it also increases overall productivity of employees.
- E-learning has improved the attitude, skills and knowledge of the health service staff and has also helped to reduce the gap of knowledge or know-how in midwifery.
- All the staff embraced e-learning but there is a little apathy in some staff due to technology phobia and reluctant in e-learning usage.
- Most the staff does not have interest in e-learning because they lack computers and computing skills.
- There is inadequate funding for e-learning programmes at the Health Service.
- There are less specialized facilitators for e-learning courses at the Health Services.
- High cost of internet services is a challenge in effective e-learning.
- Computer based programmes should be more student-centred in their methods of instructions to enhance e-learning at the Health Service.
- Teaching workers the skills to become independent learners can enhance their e-learning lessons.
- There should be the provision of reliable internet access at the training schools and hospitals.
- There should be the training of Health officials on the development of modules on the platform.
- There should be the Provision of adequate computers, the provision of trained and professional e-learning facilitators to train staff and the provision of adequate internet service.



5.3 CONCLUSION

This research study has assessed how e-learning as part of training and development in Ghana Health Service in Ashanti Region could be enhanced. Chapter one dealt with a general introduction or background to the study; statement of the problem; main and specific research questions and objectives; significance of the study and the organisation of the study. Chapter two presented literature review on the phenomenon been investigated. Chapter three, dealt with the methodology that was employed in the collection and analysis of data. Chapter four entailed the presentation and discussion of findings from the data collected and analysed. Finally, Chapter five contained a summary of the study, conclusion, limitations or shortcomings of the study as well as useful recommendations made based on the research findings. Based on the objectives and the research questions certain inferences were drawn. Some of the findings were as follows:

It was shown that e-learning educate midwives who are not able to attend a college or university due to geographical or time constraints, the Health Service uses e-learning to train, improve the knowledge base and skill of employees, e-learning has a significant influence on the professional development of workers at the health service and e-development tends to cut down total cost of the training on the one hand, it also increase overall productivity of employees.

It was also found that within the Ghana Health Service in Ashanti Region e-learning is used to bridge the knowledge gap as far as midwifery and nursing skills are concerned within the health profession. It was also found that e-learning helps a practitioner to access vital information and also make pictorial and videos available which has contributed to the



development of staff in terms of training and development. The study also revealed that e-learning has improved on the attitude, skills and knowledge of the health service staff and has also helped to reduce the gap of knowledge or know-how between midwifery and nursing.

Furthermore, it was found in this study that the common attitudes of staff at the Health Service towards e-learning as a learning tool mentioned were that all the staff embraced the system but there is a little apathy in some staff due to technology phobia and reluctant in e-learning, most of staff do not have concerns because they lack computers and computing skills and some staff do not show interest because of the lack of basic computer skills. It was also revealed that e-learning is an auxiliary alternative to learning among health staff/students, e-learning has come to eliminate stress by sharing or sending information through computers and e-learning has made it possible for trainees or staff to learn on their own by using the modules.

It was found that there is inadequate funding for e-learning programmes at the Health Service, there are less specialised facilitators for e-learning courses at the Health Services, high cost of internet services is a challenge in effective e-learning, lack of interest by some workers is a challenge in effective e-learning, poor implementation of IT projects in the Health Service contributes to poor e-learning, recurrent power failure is a challenge in effective e-learning and poor management involvement is a barrier to e-learning at the Health Service.



The following were also revealed to be the challenges to effective utilization of e-learning as a learning tool at the Ghana Health Service: Poor internet access, poor basic computer or IT knowledge or competences, lack of access to computers or laptops, inadequate skills among IT officers to develop learning modules on the e-learning platforms, very few specialized e-learning facilitators, high cost of internet, poor internet services or connectivity, or lack of stable internet connectivity, lack of interest in using the internet.

The study found that computer based programmes should be more student-centred in their methods of instructions to enhance e-learning at the Health Service, teaching workers the skills to become independent learners can enhance their e-learning lessons and student-student interaction is a key component on online courses. The possible ways revealed in this study to make an e-learning effective professional and developmental learning tool for the workers at the Health Service were: There should be the provision of reliable internet access at the training schools and hospitals, there should be the training of Health Service officials on the development of modules on the platform and there should be the provision of computers or laptops to staff even on hire purchase agreement. Participants also mentioned that there should be the provision of adequate computers, the provision of trained and professional e-learning facilitators to train staff and the provision of adequate internet service. It was also mentioned that there should be the training of more facilitators and by educating staff on the importance of using e-learning as a learning tool and the provision of stable internet connectivity (Wifi).



The study revealed the following as the future of e-learning as a tool for learning and for the professional development of workers at the Health Service: It may be bright if there is absolute commitment from policy makers like the Ministry of Health/Ghana Health Service to include e-learning in the curricula of their training institutions, it will be the leading trend of all manners of teaching and learning because every information can be found on the internet which makes e-learning very important and useful tool for learning and the future will be brighter if stakeholders can show more commitment by intensifying the use of e-learning in training of staff at the Ghana Health Service.

5.4 LIMITATIONS OR SHORTCOMINGS OF THE STUDY

This study was affected by some shortcomings or constraints. Some of these constraints are highlighted below:

- i. E-learning is still a new practice in the Ghana Health Service and therefore lacks enough documentation. There are only a few practical studies that have attempted to investigate “the role of e-learning in the training and development process”.
- ii. The constant changes coming from new technology, hardware and software respectively, are changing the scope and status of earlier technologies. For example what used to be considered a computer in terms of characteristics ten years ago is no longer the same today. This incessant change is also affecting the scope and status of e-learning.
- iii. The study is limited in its population sample; the sample constituted only fifty (50) midwives who have been trained through e-learning in the Ghana Health Service in Ashanti Regions. The main reason for this sample was due to the fact that it is the



sample that could furnish the study with reliable information given that they are all midwives who have been trained through e-learning.

- iv. It was difficult getting the participants to respond to the data collection instrument, since the participants were scattered in the Ashanti Region. However, it was easier getting the statistics of the all the fifty (50) midwives from the regional office of the Ghana Health Service, Ashanti Region. Also, during the administration of the instrument, it took days before some of the respondents returned the administered instruments.

5.5 RECOMMENDATIONS

This study has highlighted the findings in connections with how e-learning as part of training and development in Ghana Health Service in Ashanti Region could be enhanced. On the basis of these findings the researcher wishes to present the following recommendations:

It is recommended that the government, the Ghana Health Service and other e-learning service providers must join hands to ensure an effective implementation of e-learning centers in all the health centres. To ensure the professional development of workers at the health service all midwives and workers must be registered on e-learning programmes to acquire relevant knowledge and skills..

It is recommended that the Ghana Health Service in Ashanti Region should make all e-learning platforms accessible to vital information. The Ghana Health Service, managers



and service providers should organise awareness programmes where health workers are made to have positive attitudes towards e-learning and to receive all benefits offered by e-learning as a tool for learning.

To minimise workers' resistance and technology phobia to e-learning, the Human Resources Section of the Ghana Health Service must organize a special in-service training to help ease midwives fear for technology in education and to throw more light on the benefits of using e-learning as a tool for training and development.

The Ghana government in conjunction with the Ministry of Health and other donor countries must pool together financial resources to fund e-learning programmes at the Health Service, to train more e-learning facilitators for e-learning courses at the health services, to pay for the high cost of internet services and to ensure a 24 hour power flow for effective e-learning.

It is also recommended that the training and development unit of the Ghana Health Service in Ashanti Region must as a matter of urgency organised basic computer classes and training for all the workers, adequate computers and laptops must be purchased for the workers to assist them acquire the basic knowledge necessary for the e-learning programmes.

It is also recommended that facilitators of e-learning programmes must also be properly trained to ensure all e-learning classes and methods of facilitating used are learner centeredness. There should also be an absolute commitment from policy makers like the



Ministry of Health/Ghana Health Service to include e-learning in the curricula of training institution.

5.6 SUGGESTIONS FOR FURTHER STUDIES

It was evident in this research study that, there is a need for further research regarding how e-learning as part of training and development of midwives in Ghana Health Service in Ashanti Region can be enhanced. It is such a vital issue that if we do not give the necessary attention to these findings the professional development and growth of the health workers might not be attained.

Therefore, other researchers could go beyond the Ghana Health Service in Ashanti Region as these findings highlighted by this study do not only affect health workers and midwives at the Ghana Health Service in Ashanti Region.

It is therefore suggested that, researchers could look at issues like: common factors contributing to health workers' resistance to e-learning as a learning tool, perceptions of stakeholders towards the effectiveness of e-learning as a learning tool, the role of management in the implementation of e-learning at the health centres.



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UNIVERSITY FOR DEVELOPMENT STUDIES

Faculty of Education

Department of Educational Foundations

Tamale Campus



THE REG. DIR. OF HEALTH SERVICE
GHANA HEALTH SERVICE
KUMASI

Dear Sir/Madam

LETTER OF INTRODUCTION-MR OSMAN BEN ADAMS- MA/MED CANDIDATE, UDS

We write to introduce the above named student of our institution who is doing research on "The Effectiveness of E-Learning in Training and Development in the Ghana Health Service (GHS)/Ministry of Health (MOH) in Ashanti" in partial fulfilment of the requirement for his degree.

The office would be most grateful for all support and courtesies extended to him in this endeavour.

Information so obtained shall be used solely for academic purposes.

Thanks in advance for your support

Sincerely,

Rev. Fr. Dr Thomas Asante

(Coordinator)

Coord of Graduate Programs
Faculty of Education
U D S
P. O. Box 1350
Tamale, Ghana



APPENDIX B

In case of reply the number
and the date of this letter
should be quoted

My Ref:

Your Ref. No: *GHS/ASH/RES*

Tel: 22089/23651

Fax:

E-mail: rdhs.ar@yahoo.com



GHANA HEALTH SERVICE
REG HEALTH DIRECTORATE
P. O. BOX 1908
KUMASI

8TH MARCH, 2017

THE PRINCIPAL
ST. MICHAEL'S HOSPITAL
PRAMSO

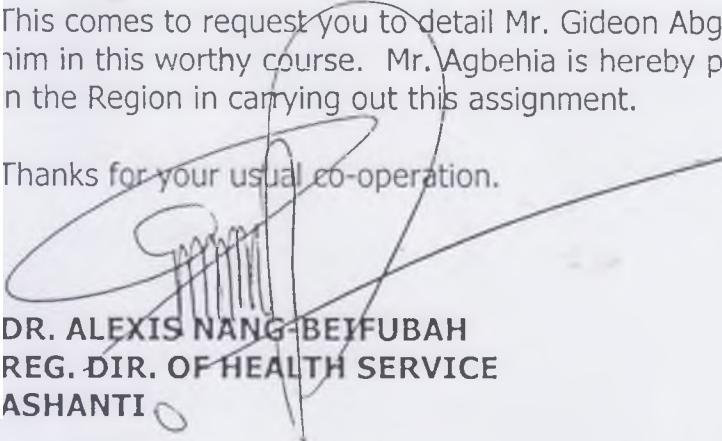
LETTER OF INTRODUCTION

MR. OSMAN BEN ADAMS – MA/MED CANDIDATE, UDS

The above named is undertaking a research entitled "The Effectiveness of E-learning in Training and Development in the Ghana Health Service (GHS)/Ministry of Health (MOH) in Ashanti" in partial fulfilment of the requirement for his degree in the University for Development Studies (UDS).

This comes to request you to detail Mr. Gideon Abgehia, a tutor of your school, to assist him in this worthy course. Mr. Abgehia is hereby permitted to liaise with any institution in the Region in carrying out this assignment.

Thanks for your usual co-operation.


DR. ALEXIS NANG-BEIFUBAH
REG. DIR. OF HEALTH SERVICE
ASHANTI

cc: Mr. Osman Ben Adams
Kumasi



APPENDIX C

INTERVIEW GUIDE

Unstructured interview would be conducted with individuals (Trainers) in the organization to get a deeper understanding of their experiences.

In these individual interviews, open ended questions would be used. The following questions are guideline for the questions that will be used to establish the effectiveness of e-learning in training and development. Follow up questions will be used for more clarity during the interview.

The interview will be divided into five as follows: Part A, Part B, Part C, Part D. and Part E. Part A deals with the biographic details of the respondents, B will focus on the impact of e-learning on the professional development of staff, C will focus on the attitudes of staff towards e-learning as a learning tool, D will look into the challenges to effective utilization of e-learning as a learning tool and E will focus on ways of making e-learning effective in enhancing the professional development of staff .

PART A: Biographical details

1. Gender
2. Educational Qualification
3. How long have been using e-learning?

PART B: The impact of e-learning on the professional development of staff

4. Does the Ghana Health Service in Ashanti Region use e-learning as a form of learning tool to train and develop workers? Explain.

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5. How does the use of e-learning as a tool of learning impact on the professional development of staff at the Ghana Health Service?

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PART C: The attitudes of staff towards e-learning as a learning tool,

6. How do workers in the Ghana Health Service evaluate the effectiveness of e-learning as medium for learning and for their professional development?

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7. What are the common attitudes of staff at the Ghana Health Service towards e-learning as a learning tool?

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PART D: The challenges to effective utilization of e-learning as a learning tool

8. Do you think e-learning is well utilized as a form of learning to train and to develop workers professionally at the Ghana Health Service?

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9. What are the challenges to effective utilization of e-learning as a learning tool at the Ghana Health Service?

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PART E: Ways of making e-learning effective in enhancing the professional development of staff

10. How do you see the future of e-learning as a tool for learning and for the professional development of workers at the Ghana Health Service?

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11. Could you please mention some of the possible ways of making e-learning an effective professional and developmental learning tool for the workers at the Ghana Health Service?

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THANK YOU FOR YOUR COOPERATION



APPENDIX D

QUESTIONNAIRE FOR TRAINEES (LEARNERS)

Dear Respondent,

I am a Master of Philosophy Student in the Faculty of Education, University for Development Studies (UDS). I am carrying out research on the effectiveness of e-learning in training and development of midwives in Ghana Health Service, Ashanti Region. My questionnaire is divided into sections from section A to E. The questions and items in each section are purely for an academic purpose. Please, be objective and sincere. Confidentiality will be given the highest respect. Your timely response will be appreciated.

Thanks for your assistance.

Yours sincerely,

Osman, Adams Ben

SECTION A – BIOGRAPHICAL INFORMATION

Please tick (✓) besides the choice(s) that best describes you.

1. Gender:

Male Female

2. Age:

3. Qualification:

Certificate Diploma Degree Masters

4. How long have you been using e-learning:



SECTION B: THE IMPACT OF E-LEARNING ON THE PROFESSIONAL DEVELOPMENT OF STAFF

Please indicate the extent to which you agree with the following statements by placing a tick (✓) in any of the boxes for each row:

4 = Strongly Agree, 3= Agree, 2 = Disagree, 1 = Strongly Disagree.

	Statements	4	3	2	1
5	E-learning educate midwives (trainees) who are not able to attend a college or university due to geographical or time constraints.				
6	The Ghana Health Service uses e-learning to train, improve the knowledge base and skill of employees				
7	E-learning has a significant influence on the professional development of workers at the Ghana Health Service				
8	E-development tends to cut down total cost of the training on one hand, it also increase overall productivity of employees				
9	E-learning reduces travel time or time off to complete the off-the-job components of the training.				
10	E-learning enhances face-to-face contact in learning				
11	E-learning improves teacher-student communication				
12	E-learning enhances greater employer interest and higher levels of student satisfaction.				
13	E-learning can bring about flexibility to workers in terms of balancing home, life and work commitments.				
14	There is active participation in e-learning platform				
15	E-learning promotes peer tutoring				
16	There is common understanding among trainees (learners) in e-learning platform				
17	Text presentation is user-friendly				
18	Graphical presentation in e-learning facilitates learning				
19	Videos presentations enhances learning				
20	Pictorial presentations enhances learning				
21	Audio presentation sustains learning				



SECTION C: The attitudes of staff towards e-learning as a learning tool

Please, place a tick (√) after each statement in any of the boxes that describes you:

4 = Very Positive, 3 = Positive, 2 = Negative, 1 = Very Negative

	Attitude towards e-learning	4	3	2	1
22	I am interested in using e-learning				
23	E-learning helps me to manage time well				
24	With e-learning, I feel responsible for my own learning in this information age				
25	The use of e-learning has improved my management skills				
26	The use of e-learning has reduced the cost of my training				
27	I believe the use of e-learning to learn is very important for my career				
28	E-learning has enabled me to learn where and when I want				
29	E-learning helps me to reflect on how I work				
30	E-learning helps me to work with others in a given context				

SECTION D: The challenges to effective utilization of e-learning as a learning tool

Please, place a tick (√) after each statement in any of the boxes that describes you:

4 = Very Positive, 3 = Positive, 2 = Negative, 1 = Very Negative

	Statements	4	3	2	1
31	There is inadequate funding for e-learning programmes at the health service				
32	There are less specialized facilitators for e-learning courses at the Ghana Health Services				
33	High cost of Internet services is a challenge in effective e-learning				
34	Lack of interest by some workers (trainees) is a challenge in effective e-learning				
35	Poor implementation of IT projects in the Ghana Health Service contribute to poor e-learning				



36	Recurrent power failure is a challenge in effective e-learning				
37	Poor management involvement is a barrier to e-learning at the Ghana Health Service				

SECTION E: Ways of making e-learning effective in enhancing the professional development of staff

Please indicate the extent to which you agree with the following statements by placing a tick (✓) in any of the boxes for each row:

4 = Strongly Agree, 3 = Agree, 2 = Disagree, 1 = Strongly Disagree.

	Statements (e-learning effectiveness)	4	3	2	1
38	Computer based programs should be more student-centred in their methods of instructions to enhance e-learning at the Ghana Health Service				
39	Teaching workers (trainees) the skills to become independent learners can enhance their e-learning lessons				
40	Student-student interaction is a key component on online courses				
41	Active and deep participation can ensure effective e-learning				

Thank you for your co-operation in completing this questionnaire.

