

AFRICA UNIVERSITY
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PERCEPTIONS AND EXPECTATIONS OF STUDENT NURSES
REGARDING THE USE OF TECHNOLOGY IN NURSING EDUCATION
AT PARIRENYATWA SCHOOL OF NURSING

BY

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF POST BASIC BACHELOR OF SCIENCE IN
NURSING

2022

Abstract

The purpose of this study was to investigate the perceptions and expectations of student nurses regarding the use of technology in nursing education at Parirenyatwa School of nursing. Nursing is an essential component in human existence that ensure human wellbeing and has been transforming due to technological innovations. To achieve this aim the study conducted qualitative phenomenology to understand the lived experiences of student nurses at Parirenyatwa School of Nursing. The study adopted the Social Cognitive theory of Self-efficacy and the Technological Acceptance Model as the theoretical foundation of the study. The study intended to employ a sample of 10 participants from senior student nurses at Parirenyatwa School of nursing to conduct face to face interviews however, the final sample of the study was 9 participants because of participant withdrew from the research. The sample was selected using purposive sampling on the participants who meet the inclusion criteria set by the study. The methodology adopted was to ensure that the study produce quality data. The results emanating from the research show that technological use is common at the institution. However, the use of technology improved drastically since 2020 after the outbreak of the coronavirus disease of 2019 (Covid19) that transformed the educational system, a period coincided with the enrolment of the participants of this study. The use of technology became an essential tool in the learning process. The findings also show that the perceptions and expectations of student nurses emanated from two factors that are the psychological conviction to use the technology from the student and the ability of the institution to provide efficient technology. The use of technology is faced with a lot challenges such as negative attitude to adopt technology from the students with low self-efficacy, poor infrastructure, poor network connectivity and lack of skills on the use of technology among others. Improvement of the mentioned aspects was considered essential to change the perception of the student nurses. The study recommends a multi-stakeholder approach to improve the use of technology which can positively impact the perceptions and expectations of student nurses.

Key Words: Perceptions, Expectations, Technology and Covid19

Declaration

I declare that this research project is my original work except where sources have been cited and acknowledged. This work has never been submitted, nor will it ever be submitted to another university for the award of a degree.

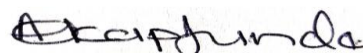
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List of Acronyms and Abbreviations

AMIA	American Medical Informatics Association
Covid19	Coronavirus Disease of 2019
HER	Electronic Health Records
ICT	Information Communication Technology
WWW	World Wide Web

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CHAPTER 1 INTRODUCTION

1.1 Introduction

The aim of this study was to investigate the perceptions and expectations of student nurses regarding the use of technology in nursing education at Parirenyatwa School of Nursing. The integration of technology in education is essential to achieve the goal of education. Therefore the chapter presents the research topic, background to the study, objectives and research questions, significance of the study, delimitations, and limitations of the study.

1.2 Background to the Study

The use of technology in nursing education is critical to achieve the goal of education. Education is a creative and dynamic process that has incorporated technological innovations in the process. According to Clark (2021) the leaders in the field of nursing education should make institutions technologically fluent and competent. Mitchell (2015) further asserts that the requirement of technological competences such as information management, information and computer literacy in health institutions is vital. The school curricula in Nursing Schools need to be improved in the same way the students are required to expand their technological skills (Li, Lee, Wong, Yau, and Wong, 2017). Further, governments have the duty to set up technological competency standards required for undergraduate nursing students. When students are enrolled at nursing schools they possess different levels of technological skills, some possess skills that are necessary to carry them until they graduate while others lack these skills. According to Edwards and O'Connor 2011 as cited in Bennett (2017) different levels of technological abilities cause conflicts in a class. The lack of appropriate technological skills that are required in nursing education negatively affect the learning process of the students. The incorporation of informatics in nursing education has been inconsistent which has negative

implications on the student nurses who graduate without required skills in patient care. This ultimately affects the nursing practise.

Nursing education should include technological standards in order to efficiently train the students for professional nursing practises. There are no standards regarding the use technology in the learning institutions in Zimbabwe. The call for evidence-based-practises, the use of electronic health records and the lack of technological competencies in nursing education create problems in the training process (Bennett, 2017). In Zimbabwe technology use is not developing at the expected pace because of challenges ranging from data cost and the cost of acquiring information technology (ICT) devices (Mupfiga et al 2017). This means that there is need to establish high levels of standard skills in technology use in nursing education. Nursing students across the globe perceive the use of technology in nursing education as an advantage that facilitates their learning process. However, the nursing students in Zimbabwe have faced less exposure to technology in their learning process as a result of a variety of reasons. From this background a research on the perceptions and expectations of student nurses regarding the use of technology in nursing education was essential.

1.3 A brief background of Parirenyatwa School of Nursing

Parirenyatwa School of Nursing is a subsidiary of Parirenyatwa Group of Hospitals formally called Andrew Fleming Hospital during the colonial era. Upon the completion of a program, graduates are awarded the Registered General Nurse qualification. Parirenyatwa School of Nursing offers the following programs; Diploma in General Nursing Midwifery Diploma, Psychiatric Mental Health Nurse Diploma, Diploma in Nursing Administration, Diploma in Nurse Anaesthetist, Diploma in Operating Theatre Nursing, Diploma in Intensive and Coronary Care Nursing, Diploma in Ophthalmic Nursing, Diploma in Peadiatric Nursing, Renal Nurses Diploma, Diploma in Intensive Care Nursing, Diploma in General Nursing,

Diploma in Oncology and Palliative Care Nursing, (www.parihosp.org). Parirenyatwa School of Nursing is one of the biggest and best nursing education institutions in the country. The institution has made stride towards acquiring and integrating modern technology in education system. The institution has integrated different technologies and has greatly benefited from the government intervention at the Parirenyatwa Group of Hospitals through the provision of modern health technologies. The actual impact of these technological improvements on the nursing students is unknown which necessitated this study.

1.4 Research problem

The development of ICT since the second half of the 20th century has witnessed the adoption of technology in the educational sector in particular nursing education. The challenge of preparing student nurses to acquire the expertise that is needed to keep the patients safe in the 21st century health care system requires the use of Electronic Health Records (EHR) and integration informatics in the nursing education curriculum. In Zimbabwe technology use has been hindered by enabling and limiting factors that affect interaction between lectures and students. These factors include; technology exposure for both the students and lecturers, internet connection and the lack of policy framework to ensure efficient adoption of technology among others. The technological innovations in the health care systems have increased the knowledge requirements for nursing students in nursing education. These factors may have influence of the student's expectations and perceptions regarding the use of technology in nursing education in Zimbabwe which is currently not known.

1.5 Research objectives

1.5.1 Broad Objective

The aim of this study was to investigate the perceptions and expectations of student nurses regarding the use of technology in nursing education at Parirenyatwa School of Nursing.

1.5.2 Specific Objectives

In order to achieve this aim the following specific objectives were set:

- To establish the technological innovations used in nursing education at Parirenyatwa school of nursing.
- To determine the perceptions and expectations of student nurses regarding the use of technology in nursing education at Parirenyatwa School of Nursing
- To identify the challenges encountered when using technology at Parirenyatwa School of Nursing
- To identify areas that need developments to improve the perceptions and expectations of student nurses regarding the use of technology at Parirenyatwa School of Nursing

1.6 Research Questions

1. What are the technological innovations used in nursing education at Parirenyatwa School of Nursing?
2. What are the perceptions and expectations of student nurses regarding the use of technology in nursing education at Parirenyatwa School of Nursing?

3. What are the challenges encountered by student nurses when using technology in nursing education at Parirenyatwa School of Nursing?
4. Which areas require developments to improve the perceptions and expectations of student nurses regarding the use of technology at Parirenyatwa School of Nursing?

1.7 Study Justification or Significance

The study is significant to nursing education and educators, and other stakeholders in the following categories.

1.7.1 Parirenyatwa School of Nursing

The findings of this study contributed immensely to the Parirenyatwa School of Nursing body of knowledge. This study provided other students with literature to carry out further studies on the perceptions and expectations regarding the use of technology in nursing education. The study increases the output of competent nursing professionals when they complete their studies as the study detailed the perceptions and expectations of nursing students on technology use in nursing education.

1.7.2 Policy Makers/ Government

The policy makers and government may find the feedback from the students valuable and improve technological innovations in the country to facilitate the use of technology in nursing education at Parirenyatwa School of Nursing and other nursing education institutions in Zimbabwe

1.7.3 The student

The study helped the student to realise the importance of technology in nursing practises. The study also assisted the student to gain required information to match the global demand of informatics in nursing practise.

1.8 Delimitation of the study

The boundaries set by the study to outline the scope of the research are referred to as delimitations (Creswell, 2009). The study had the following delimitations:

The research was conducted at Parirenyatwa School of Nursing and employed 10 purposively selected respondents. The research objectives were achieved using qualitative phenomenology. The study focused on the period in which technological tools were adopted as learning tools at Parirenyatwa School of Nursing and as a result of the outbreak of corona virus diseases of 2019 (Covid19).

1.9 Limitation of the study

Limitations are elements that appear in every research which are beyond the researcher's control. It is important to reduce the limitations of the study to improve reliability and validity of the research findings (Creswell, 2009). Due to the nature of the research the study faced the following limitations;

The movement restrictions caused by Covid-19 pandemic negatively affected the research process. However, the Covid19 induced limitations enabled the researcher to use a smaller sample using qualitative phenomenology.

To add the respondents feared to divulge their perceptions in fear of victimization. However, the study employed the principle of confidentiality and the interviews did not make a mandatory requirement of a person's name for them to participate in the interviews.

The number of research participants for qualitative research is relatively small which can potentially affect the outcome of the study. However, the inclusion criteria helped to select the well informed respondents which maintained the reliability, validity and credibility of the research.

1.10 Summary

This chapter focused on background information that informs this study. This includes the background to the study, objectives and research questions, significance of the study, delimitation, and limitations of the study. The chapter maps the direction in which the study follows.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature that was used for the purpose of this study. The chapter provided the literature regarding the use of technology in nursing education. The expectations and perceptions of student nurses are influenced by institution's use of technology, faculty's experience of using technology which generates the perceived usefulness and perceived ease of use of the technology. The Technology Acceptance Model by Davis 1989 and the Social Cognitive theory of Self-Efficacy by Bandura 1995 were adopted as the theoretical foundations for the study. Previous literature was analysed to give the empirical grounds to conduct the study through identifying the research gap. The review of literature was essential to investigate the perceptions and expectations of student nurses regarding the use of technology in nursing education at Parirenyatwa School of Nursing.

2.2 Technology

The term technology is a complex term that encompasses a lot of aspects. There are several studies conducted on the impact of technological competencies in nursing education across the globe. In light of this it is very difficult to define the term. The term technology can be referred to as the use of digital apparatus to reduce human effort or the organisation of knowledge for practical purposes (Bennett, 2017). The understanding of the term presented herein is too broad and beyond the scope of the study. In simpler view the term technology can be best understood in relation information communication technology (ICT).

Information Communication Technology (ICT) has taken over the academic arena in Zimbabwe. The institutions of higher education in Zimbabwe have adopted different ICT tools to facilitate teaching and learning process. A study by Mupfiga et al, (2017) shows that the

more than 90% of university students in Zimbabwe are exposed to ICT especially mobile devices. The Parirenyatwa School of Nursing has not been left out on the initiatives to adopt different technologies in nursing education. ICT use is embedded in many societies and it is also used in education enabling the students and lecturers to communicate access networks and interact on social media, using numerous applications supported by the ICT devices (Raman, 2015).

The 21st century system of education is not confined to the traditional face to face learning and teacher to student system of informing. According to Mupfiga et al (2017) the use of ICT devices by the instructors and the students impacted the lecture delivery process. The rise of pandemics such Covid-19 affected the traditional way of learning. This increased the students' reliance on ICT devices because of their convenience and efficiency. Accordingly Herold (2016) states that the use of mobile phones and computers in a classroom setting is rampant in the 21st century.

In Zimbabwe the adoption of the multicurrency system improved the network system and drastically increased the number of mobile phone users (Musingafi and Zebron, 2014). These devices are very crucial in information processing and management. Technology has facilitated the development of information communication tools that enabled people to make phone calls, store information, access reference material and perform video conferencing (Ratheeswari, 2018). These capabilities have led this period of technology use to be referred to as the information age. The Parirenyatwa School of Nursing has not been left on the initiatives to adopt technology in nursing education.

2.2.1 Software Capabilities

ICT use improved the mode of lecture presentation in a classroom set up (Bennett, 2017). The lecturers are capable of creating visual presentations and make illustrations through mobile

devices (Buabeng-Andoh, 2018). This improved the sense making process of the students. The software accessed through mobile devices are important in facilitating interactions between different races and human experiences (Ratheeswari, 2018). This broadens the knowledge base of the students and the ability to interact with other people across the world. The use of technology has improved the ability of the educators to efficiently engage students in classroom discussions. Technology creates an environment that improves the students' interaction with their educators. Interactive software used in face to face classroom improves the students' ability to gather data thereby improving their general performance (Clark, 2021). Further, technology can also enable the institution to monitor the progress of the students through online surveys. The institutions can make timely interventions in the case of challenges. The software capabilities produce positive perceptions regarding the use of technology in nursing education.

2.3 Technology Challenges

The challenges of using technologies in a higher education can be categorised into two. These are Institutional challenges and the students' challenges (Sheikhtaheri et al, 2018). These challenges affect the students' perceptions and expectations regarding the use of technology in Nursing Education.

2.3.1 Institutional Challenges

Most lecturers and students adopt technology at a later stage in their lives. The effective use of technology requires training, knowledge and skills. The institution need to enhance the experiences of the educators for them to effectively integrate technological skills in the classroom. The aged lecturers face various challenges when adopting technological skills. The revolution in technology in Zimbabwe started just a decade ago when the country adopted the multicurrency regime (Musingafi and Zebron 2014). Studies have showed that the use of technology is determined by the age of the users (Musingafi and Zebron 2014). The mandatory

use of technology in teaching caused some educators to suffer from anxiety and stress related to technology use which result in overall job dissatisfaction (Clark, 2021). According to Dickens (2017) the experiences of the educators with technology and attitude influences their intention to adopt and use technology in teaching process. Clark (2021) asserts that the lack of ICT tools affects the adoption and use of technology in the classroom and overall teaching process.

In the light of the above, Clark (2021) asserts that it is important to equip the institution with newer technology pedagogical teaching approaches to motivate new learners to improve their technological skills and improve retention in the field of nursing education. The institutional challenges affect the perceptions and expectations of the nursing students. A study by Mackay et al (2017) concludes that the faculty challenges of using technology directly impact the students' perceptions and expectations.

2.3.2 The Students' Challenges

The experiences of the technology users in nursing education are considered essential to understand their perceptions of using technology (Clark 2010). The acceptance and use of technology is influenced by the user's attitude towards it. According to Buadeng-Andoh (2018) student's access to ICT devices influences their attitude towards the use of technology in education. The students who have the ability to access mobile devices and computers favour the use of technology in the learning process. On the other hand the students who lack access to ICT tools denounce the use of technology in the learning process (Clark 2021). These differences create a gap among nursing students that affects their ability to accept technology. According to Mupfiga et al (2017) the students who have poor technological background tend to have negative attitudes towards the use of technology.

The background of the students affect their attitude towards technology. Studies have shown that the majority of the students in universities use technological devices (Bennett, 2017). However, Mupfiga et al (2017) narrates that the minority groups who cannot afford to purchase or own smart phones and laptops have negative attitudes towards the use of technology in nursing education. Some students adopt technology during their entrance at the universities and they lack adequate experience to use the technological tools (Clark 2021). As a result of this they lag behind in their studies. The students who lack background use of technology denounce the use of technology in nursing education. The students' perceptions and experiences with technology also influence the faculty members' perceptions and expectations regarding the use of technology in education (Mackay et al, 2017). Clark (2021) states that although mobile technology enhances and facilitates classroom learning, it is faced with a lot of challenges such as the size of the screen, the large number of resources and the reliability of the internet sources which can potentially limit the usefulness of the internet sources.

Wingo, Ivankova, and Moss (2017) in a study on the impact of mobile devices in enhancing nursing care in a psychiatric-mental health setting conclude that the students have limited experience with the use of technology as well as poor technical support. In light of these difficulties the students' attitudes towards the use of technology is not favourable (Wingo et al 2017). These limitations affect the pedagogy for teaching learning

2.4 Technology Limitations

The integration of technology in the educational sector is challenging. There are enabling challenges in the use of technology. There are several aspects which affects the use of technology these include availability of resources, technology design, student engagement, technical expertise, connectivity and management support (Bennett 2017). The technological design affects the perceptions and expectations of the students' towards the adoption of

technology. The design affects the potential benefits that emanate from the use of technology for the institution. There are positives and negative perceptions and unclear expectations on the use of technology

2.5 Theoretical framework

This section presents the theories that were adopted for this study. The social cognitive theory of self-efficacy and the technology acceptance model formed the theoretical foundation of the study. These theories provided the grounds to understand the perceptions and expectations of student nurses regarding the use of technology in nursing education at Parirenyatwa School of Nursing.

2.5.1 Social Cognitive theory of Self-Efficacy.

The social cognitive theory of self-efficacy was developed by Bandura 1995. Self-efficacy can be understood as the conviction in one's ability to organize and execute the action required to deal with situations (Compeau and Higgins, 1995). The ability of a person is measured by positive or negative conviction towards his or her ability. When a person has positive belief in his or her ability to perform an action the ultimate action is successful (Bennett, 2017). People with high self-efficacy are more successful than people with low self-efficacy. Bennett (2017) states that there is correlation between self-efficacy and performance that is the increase in self-efficacy leads to the increase in performance and decrease in self-efficacy also leads to the decrease in performance. The students with high self-efficacy are better performers than those without (Bandura, 1995). The self-belief in one's ability to use technology increases on a daily bases, as a result of increased interaction with the technology. According to Bennett (2018) mastering experience, vicarious experiences, social persuasion and physiological responses are the key requirements to successfully adopt technology. Firstly the mastering experience refers to the development of appropriate tools to create and execute a course of action (Buabeng-

Andoh, 2018). A person needs to be fully convinced that they can successfully perform the action. The mastering experience is gradual. The experience with technology creates perceptions towards technology among the nursing students. Secondly, social persuasion describes how the individual is verbally encouraged to overcome challenges by their peers or other members of the society (Buabeng-Andoh, 2018). Third, the vicarious experiences, explain how interacting with people in a similar situation positively influence a person to succeed (Buabeng-Andoh, 2018). Fourth, physiological and emotional responses describe how people improve their efficacy and beliefs through reduction of stress and negative emotions (Compeau and Higgins, 1995). The reduction of stress and negative emotions leads to the development of positive self-efficacy.

The performance of individuals results from the “can do” lens of self-efficacy (Compeau and Higgins, 1995). The presented construction of the theory of self-efficacy shows that people are better performers. Social persuasion and vicarious experiences can create the building block upon which efficacy can be created (Bennett 2017). The conviction is essential for a person to perform a task at hand. The framework provided self-efficacy provides insights into students’ beliefs that they could achieve performance with proper preparation. The theory of efficacy was important in understanding the perceptions and expectations of the nursing students at Parirenyatwa School of Nursing.

2.5.2 Technology acceptance model

The theory was developed by Davis (1989) to understand the individual’s acceptance of technology. The theory asserts that there are a number of factors that influence, when and how the individual person accept and use technology (Davis 1989). The theory presents how individual’s attitude and previous experience with different technologies affect their choice of technology. Clark (2021) asserts that the positive attitude of users’, means that they are more

likely to adopt technology depending on the perceived use and perceived ease of use. On the other hand negative attitude towards technology means that the people will denounce the use of technology because of unfavourable perceived usefulness and perceived unease of use (Mitchell, 2015). According to the theorist perceived use refers to the extent to which a technology is useful to user and how the user is motivated to use the technological devices to facilitate their learning process (Clark, 2021). Perceived ease of use refers to the extent to which the user believes that the technology requires little effort and is less complicated to use in the learning process (Davis, 1989).

These aspects are part of the behavioural intention (BI) of a person to make rational choices and their likelihood to adapt certain behaviour. The attitude is determined by the past experiences. The theory asserts that the expectations and perceptions are affected by the usefulness and ease of use of the technology (Mitchell, 2015). The personal experience contributes to the perceived usefulness and perceived ease of use of technology in nursing education.

The peoples technological experiences affect their behaviour to choose technology. There are several factors that influence a person's decision to adopt technology in their life and when to adopt it (Musingafi and Zebron, 2014). According to the theorist perceived use refers to the extent to which a technology is useful to user and how the user is motivated to use the technological devices to facilitate their learning process (Clark 2021). Perceived ease of use refers to the extent at which the user believes that the technology requires little effort and is less complicated to use in the learning process (Davis, 1989).

These aspects are part of the behavioural intention of a person to make rational choices. In addition, BI is the likelihood that an individual will adapt to a given behaviour (Davis, 1989). For this study, the BI indicates the chances that the students would generate positive

perceptions on the use of technology. The attitude is determined by the past experiences. The goal of this study is to understand how perceptions and expectations affect a person's choice of using technology in nursing education. The theory asserts that the expectations and perceptions are affected by the usefulness and ease of use of the technology (Davis, 1989). The perceived usefulness and perceived ease of use is also affected by external variables such as the experience, satisfaction and personal feelings regarding the use of technology in nursing education.

The people's technological experiences affect their behaviour to choose technology. There are several factors that influence a person's decision to adopt technology in their life and when to adopt it. The choice of the technology acceptance model was based on the idea that the theory is popular used in research to ascertain the use of technology. The researcher believes that the theory will be useful to realize the perceptions and expectations of nursing students regarding the use of technology in nursing education at Parirenyatwa School of Nursing. To understand the institutional experience of using technology in nursing education which include; the use of technology in the classroom for teaching and learning and in industrial experiences to observe how the experience influenced the perceived usefulness and perceived ease of use. The theory also helped the researcher to understand how these experiences affect the participant's behavioural intention in relation to the use of technology in nursing education.

2.6 Benefits of Technology in Nursing Education

ICT use is associated with numerous benefits in the learning process. According to Damewood (2016) technological use by student nurses and the institution provides innovative resource to facilitate the student learning and support communication in the academic setting. The nursing institutions provide the students with informatics in preparing them for the complex healthcare environment. The healthcare system adopted the use of electronic health record to trace the

medical records of the patient and to sufficiently manage the medication schedule for the patients (Mitchell, 2015). The integration of technology in nursing education improves the academic performance. More importantly the use of technological devices equips the students and the institution with the software and resources to evaluate and assess students' practical and critical thinking skills (Damewood, 2016). This is important in improving the teaching process in academic institutions in developing countries.

2.7 Importance of Technology Integration

The integration of technology in nursing education has never been a smooth in developing countries like Zimbabwe. The use of technology in the nursing education is essential in improving the quality of healthcare workers in the country (Mupfiga et al, 2017). According to Mupfiga et al (2017) the lecturers must be concerned with the preferences of the students with regards to the teaching and learning styles to facilitate improved results. The use of technology in nursing education is very vital and thus it is important for the nursing institutions to integrate and create mechanisms that facilitate the effective adoption of technological skills (Mupfiga et al, 2017). Without technology nursing educators spend many hours assisting students to critically think and analyze patient care situations and scenarios. Buabeng-Andoh (2018) notes that the use of technology in nursing education lessen the time of lecturing and enable continuous assessment even after the classroom hours through sharing lecture notes and material.

2.8 Student nurses' perceptions and expectations on the use of technology in Nursing Education

The use of technology in nursing education must be concerned with the perceptions of the students. According to Mupfiga et al (2017) perceptions of the students are determined by whether the technology is beneficial or not to their studies. The new millennium generation grew up exposed to different technological devices in their daily lives. These devices have

enabled them to communicate and access wide range of information on the World Wide Web. The younger generation who grew up and adopted technology at a younger age are psychologically motivated to accept technology in their learning process (Buabeng-Andoh, 2018).

However, some students are not exposed to technology because of poverty. This creates an information gap between the rich and poor which led to the variations in perceptions among the rich and the poor (Buabeng-Andoh 2018). The use of technology devices for research is a daily event and a common phenomenon for students in Zimbabwe (Mupfiga et al 2017). Mupfiga et al (2017) further asserts that students in institutions of higher learning prefer recording and the use of electronic material than resort to the traditional note taking.

According to Bennett (2017) in a study to investigate the impact of the users' attitudes toward technology on the acceptance of technology in nursing education asserts the students' level influence their attitude towards technology. Students can disregard technology if they do not perceive it as useful in the learning process.

According to Buabeng –Andoh (2018) in a survey to investigate the use of mobile phones by undergraduate students in Ghana shows that the students perceive the integration of technology in education essential since the majority of them own cell phones. According to Clark (2021) it is important to understand the current use of technology in nursing education to understand the challenges related to its use. There are both internal and external factors that affect the use of technology in nursing education

Sheikhtaheri et al. (2018) conducted a study to understand the attitudes and perceptions of medical and nursing students on the use of technology. The study concluded that the mobile technology is useful in nursing education but it is important to understand the perceptions of the institutions.

2.9 Literature Gap

The literature reviewed showed that technology use is common in tertiary education. Further the studies highlighted that there are various advantages and challenges associated with the use of technology. However, the studies reviewed were conducted in developing nations. This left an information gap to investigate perceptions and expectations of student nurses regarding the use of technology in nursing education in developing countries. Further, the studies conducted in Zimbabwe over the use of technology in learning process were generalised to all tertiary institution which did not generate conclusions that were specific to the experiences of Parirenyatwa School of Nursing. As such this left the need to study the perceptions and expectations of student nurses regarding the use of technology in nursing education at Parirenyatwa School of Nursing.

2.10 Chapter Summary

This chapter presented the conceptual and theoretical literature on the perceptions and expectations of student nurses regarding the use of technology. The chapter further review the empirical literature from previous studies to identify the research gap which necessitated this study. This also helped to understand the perceptions and expectations of student nurses regarding the use of technology in nursing education at Parirenyatwa School of Nursing.

CHAPTER 3 RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology that adopted by the study. The lack of standard use of technology in nursing education led to different perceptions and expectations regarding the use of technology. In order to understand the nursing students' perceptions and expectations regarding the use of technology in Nursing Education at Parirenyatwa School of Nursing the researcher conducted qualitative research. This was essential to understand these factors with regards to the use of technology. In summary this chapter presents the research design, population and sampling technique, data collection instruments and ethical considerations.

3.2 Research Design

The research design presents the direction which the study followed to achieve the aim of the study. Research design is an abstract structure which is used in conducting a research and how the data is measured and analysed (Kothari, 2014). In a similar view Creswell (2014) asserts that research design is the structure used to collect and analyse data. Overall this seeks to answer the research questions set by the researcher. The major question of this study was: What are the nursing students' perceptions and expectations regarding the use of technology in nursing education? The study used qualitative research approach because it is considered ideal for the study.

3.3 Qualitative Research

Qualitative research is popularly used in many disciplines. The research is used by the researcher who seeks to understand the actions and experience of the individual in relation to a certain phenomenon (Creswell, 2014). The research strategy provided the ground to answer the objectives of the study. The qualitative inquiry helped the researcher to understand the

perceptions and experiences of the nursing students basing on their experiences. The lived experiences will be explored using the phenomenological approach.

3.4 Phenomenological Approach

The study will adopt descriptive phenomenology to explore nursing students' perceptions and expectations on the use of technology in nursing education. Creswell (2014) argues that the researcher who uses phenomenological approach is interested in the experiences of the individual under study. Interpretive phenomenology and descriptive phenomenology are the two main phenomenological qualitative approaches. Interpretive phenomenologist argues that setting personal biases in a research is impossible (Creswell 2009). On the other hand descriptive phenomenologist asserts that the researcher set aside personal ideas regarding the phenomenon (Connelly, 2010). The study adopted the descriptive phenomenology approach and begins with an interview and analysis of all the data collected to reflect the lived experience of all participants. The descriptive phenomenology was considered essential to achieve the goal of the study.

3.5 Study Population

The population was selected with a clear understanding of the purpose of the research (Kumar, 2005). The goal of the study was to investigate the nursing students' perceptions and expectations on the use of technology in nursing education. The target population of the study consisted of nursing students from Parirenyatwa School of nursing. The demographic questionnaire was designed to collect the demographic information of the respondents to show that they meet the inclusion criteria used for this research. Thus the study focussed on the nursing students at Parirenyatwa School of Nursing.

3.6 Exclusion Criteria

The study focused on the perceptions and expectations of student nurses regarding the use of technology in nursing education at Parirenyatwa School of Nursing. The study excluded nursing students from other Nursing Schools. Level one and two nursing students at Parirenyatwa School of Nursing were excluded from the study.

3.7 Inclusion Criteria

The study participants comprised of final year student nurses at Parirenyatwa School of Nursing. The final year students were selected to ensure that the participants had enough experience and knowledge about the use of technology in nursing education at Parirenyatwa School of Nursing. The inclusion criterion was maintained through asking the participants to complete demographic questionnaire (Appendix 4).

3.8 Sample size

Sample size is the total number of objects selected for the study (Creswell, 2009). There is no absolute rule that governs the number of participants required in qualitative research (Saunders et al, 2009). The sample size is determined by the researcher's discretion and is also influenced by data saturation (Kumar, 2005). From this background 10 participants (N = 10) were interviewed. The purposefully selected sample who met the inclusion criteria were saturated with data required to answer the questions.

3.9 Sampling Procedure

Kothari (2014) notes that sampling procedures refer to the steps taken to select objects for the research. The study employed purposive sampling to investigate the perceptions and expectations of student nurses regarding the use of technology in Nursing Education at

Parirenyatwa school of Nursing. The sampling procedure directed the researcher to the ideal respondents. A purposive sample contains the most productive participants in qualitative inquiry which enriched the study through providing essential information (Saunders et al, 2009; Babbie and Mouton, 2012). The purposive sample enabled the researcher select respondents that were able to answer the research questions. The sample was used conduct face to face interviews.

3.10 Study Setting

The study was carried out at Parirenyatwa School of Nursing where student nurses are trained.

3.11 Data Analysis

It refers to the steps taken to give structure to the collected data through the research instruments (Kothari, 2004). This study used data analysis techniques such as coding, grouping similar responses and integrating different patterns among other techniques (Creswell, 2014). The research used the thematic approach to present the data.

3.12 Ethical considerations

The study was cognizant of the following ethical considerations. The study sought permission to conduct the study from Africa University and Africa University Research and Ethics Committee (AUREC). Application to conduct the study at Parirenyatwa school of Nursing was sent to the authorities of the Institution (Appendix 5). To add the researcher adhered to the conditions set by the Parirenyatwa School of Nursing in the approval letter (Appendix 6). Further the researcher sought consent from the participants (Appendix 3). The ethical standards were maintained to ensure the credibility, reliability and validity of the study (Bryman, and Bell, 2001).

3.13 Summary

The chapter presented the research methodology adopted to investigate student nurses perceptions and expectations regarding the use of technology in Nursing Education at Parirenyatwa School of Nursing. The study adopted qualitative research and used a sample of 10 students to conduct semi-structured interviews. In summary this chapter presents the research methodology, population and sampling technique, data collection instruments and ethical considerations.

CHAPTER 4 DATA PRESENTATION AND ANALYSIS

4.1 Introduction

The goal of this qualitative phenomenological research was to investigate the perceptions and expectations of student nurses regarding the use of technology in nursing education at Parirenyatwa School of Nursing. The study conducted interviews on purposively selected respondents. Therefore the chapter presents findings that emanated from the study.

4.2 Study Participation

The study intended to interview 10 participants however one participant withdrew at the eve of the interview citing personal reasons. The final sample was made up of nine participants. The nine participants (N=9) of this study were all final year students at Parirenyatwa School of Nursing. The final sample was adequate to meet the aim of the study.

4.3 Demographics

The section presents the demographic data of the respondents. The research participants met the inclusion criteria established in chapter 3 of being final year student nurses at Parirenyatwa School of Nursing. To guarantee that the study population met the inclusion criteria the study developed a demographic questionnaire (Appendix 4). The participants were asked to complete the demographic questionnaire before the interview. The demographic questionnaire consisted of age, sex, academic year and location of residence and the results are presented below.

4.3.1 Gender

The gender information shows the number of female and male respondents used in this study. According to Allen and Wiles (2016) a research should be gender sensitive in order to gather

data that is gender inclusive thereby improving the validity and reliability of the research data.

The summary of the participants' gender data is summarised below.

Table 4.1: Gender of the research participants

Strata	Number of Participants
Male	2
Female	7
Total	9

Source: Primary Data 2022

The results presented in showed that the study was gender sensitive; 7 participants were female while 2 were male. The study was slightly dominated by female respondents owing to the researcher's bias and the nature and general perception of nursing discipline as a female discipline

4.3.2 Age

The age ranges of the 9 participants (N = 9) presented in this section. The age were divided into 3 categories. The summary of the gender is presented below.

Table 4.2: Age range of the participants

Strata	Age Ranges		
	20 years and below	21-30 years	31 years and above
Male	1	1	0
Female	1	4	2
Total	2	5	2

Source: Primary Data 2022

The result presented in table 4.2 shows that of the 9 participants, 5 were aged between 21-30, while 2 were over 31 years and 2 were below 20 years.

4.3.3 Academic Level

The section presents the academic levels of the participants. The study purposively selected final year students to make up the sample of this study. The academic levels are tabulated below.

Table 4.3: Academic Level of the Participants.

Strata	Academic Level		
	Academic year 1	Academic year 2	Academic year 3
Male	0	0	2
Female	0	0	7
Total	0	0	9

Source: Primary Data 2022

The results show that the study participants were all final year student nurses at Parirenyatwa School of Nursing.

4.3.4 Permanent Location of Residence

The respondents interviewed came from different provinces and districts; of the 9 participants 4 permanently resides in Harare, 1 came from Chiweshe rural, 1 came from Domboshava Rural, 1 came from Mutoko, 1 came from Chegutu urban and 1 from Seke rural. The study constituted people from different social and economic backgrounds. These variations impacted their responses which improved the data quality.

4.4 Results of the interviews

The main aim of this study was to investigate the perceptions and expectations of student nurses regarding the use of technology in nursing education at Parirenyatwa School of Nursing. To

present the data the study used the thematic approach in which four themes emerged basing on the set objectives and research questions. The themes include; i) to establish the technological innovations used in nursing education at Parirenyatwa School of Nursing ii) to determine the perceptions and expectations of student nurses regarding the use of technology iii) to identify the challenges iv) recommendations. Qualitative interview questions were used to arrive at the emerging themes. The themes were helpful to arrive at the main goal of the study. The results of the interviews are presented below and the names used were pseudonyms to protect the identity of the participants.

4.4.1 Research Question 1: What are the technological innovations used in nursing education at Parirenyatwa School of Nursing?

To answer the research question the interviewer commenced by asking the students to explain and identify the types of technology used. The respondents were more technologically informed which facilitated their adoption of technology in their studies. The common response showed that Parirenyatwa School of Nursing used different ICT tools. The institutions is gradually moving away from the traditional methods of teaching and adopt technology in the teaching and learning process. The use of technology is now common at Parirenyatwa School of nursing by students and nurses. The students were allowed to bring their mobile devices to the classroom. Important to note is that the outbreak and spread of Covid19 in Zimbabwe fast tracked the use of various technological tools and applications. The Covid19 pandemic effects transformed the social way of life (Kumar 2020). The call for online lectures and submission of researches and assignments through student portal quickened the use of ICT tools and social media. The rapid adoption of technology due to Covid19 was shared by the participants. The technologies used at Parirenyatwa Nursing can be categorised into ICT tools and software or applications. Kudakwashe participant narrates that;

The institution has a library with computers and support Wi-Fi connectivity that enable us to research. The institution support student portal which we use to access our result, we usually send assignment via email and use different search engines to research especially Google.

The response show that the institution use different IT tools. In line with this Tendai notes that;

The most common IT tools include desktops, laptops, tablets and mobile phones. However, the use of mobile phones during lectures is not advisable because the lecturers often feel that the students will be accessing other platforms which do not enhance learning. The use of mobiles is mostly common in conducting online lectures. This is used to review the overall performance of the students.

The response showed that the institution has ICT tools and support different software. To support this claim Mary explained the use of technology at Parirenyatwa School of Nursing in this way;

The outbreak of the corona virus changed the mode of learning; the use of social media became common and mostly used because of the lockdown restrictions. The institutions are now able to use ICT tools more efficiently and regularly. We are now able to use our gadgets to respond to the questions and access medical technology from other parts of the world. We frequently use YouTube, Whats App, Email and the internet in general. Personally I use Whats App for group discussions and online lectures. Power point presentation which can present visual presentation of the content being taught is also used.

The various technological competencies used at Parirenyatwa School of Nursing have transformed the learning and teaching practises at the institution. Since the outbreak of the

Covid19 pandemic the use of ICT tools seized to be a choice to be an integral part of the learning process. The use of technology improves the learning process by enhancing the student engagement through increasing the degree of attention, curiosity, interest and passion generated by the access to IT tools in the learning process. This has made the students an integral part of the course content and the outcome of the learning process. Mercy made the following remarks concerning the use of technology;

It enables us to share information outside of the classroom since the lecture time is inadequate cover the course content. This makes technology essential in the learning process since it enables us to cover for the material that we missed during normal class.

Similar to this Panganai further expounds that;

Technological innovation improves our class engagement because we can read ahead and probe questions during lectures. This overall enhances my understanding of the subject.

The findings of the study show that technology use is common at Parirenyatwa School of Nursing which enable students to write evidence based papers and assignments and conduct online discussions and lectures.

4.4.2 Research Question 2: What are the perceptions and expectations of student nurses regarding the use of technology in nursing education at Parirenyatwa School of Nursing?

The use of technology in the learning process by the students at Parirenyatwa hospital is determined by several factors. The findings showed that the student nurses have different perceptions and expectations regarding the use of technology at Parirenyatwa School of Nursing. The perceptions of the students are determined by the attitude of the learner. The lived technological experiences of student nurses were in line with the technology acceptance model

(Davis 1989). The Davis' model asserts that the person's attitude before adopting technology play a role in their acceptance and integration of the technology (Clark 2021). The adoption of technology is determined by the perceived usefulness and perceived ease of use. The outbreak of Covid19 changed the perceptions of student nurses regarding the use of technology in education. The conception of perceived use was shared by students. Nyasha commended positively that "the use of ICT tools has been motivated by the circumstances and the need to explore medical practises from the outside world".

In a similar view Mary contends that;

I perceive the use of technology to be essential in the learning process since it helps us to learn various technologies that are used globally. The use of technology makes me relevant when I cross the borders to work in other countries because I will be knowledgeable about their medical practises through the internet.

The use of technology in the learning process should enhance higher order thinking amongst the students (Clark, 2021). This is achieved through active involvement both in and out of the classroom. The use of technology is perceived to be a critical component in the learning process. Technology is used to conduct follow up lectures as a result from limited lecture time.

Paida narrates that;

The use of technology is essential to improve learning because it can shift learning from the traditional classroom to an open classroom whereby we can make meaningful addition to the learning process than to be mere recipients of the lecturer's information.

Kudakwashe adds that;

The development of applications such as YouTube and WhatsApp made the world of learning interactive and easier to achieve the learning objectives.

The enrolment of the participants of this study at Parirenyatwa School of Nursing coincided with the outbreak of the Covid19 which halted the natural way of life, both in education and secular life. The nursing students' expectations were related to the perceived usefulness and perceived ease of use. The participants argue that technology should be easy to use and useful to achieve the objectives of the study. The students who participated in this study reports that the technology should be easy to use at whatever time to improve their learning process. Panganai commends that "technology should simplify access to information through making simple input to access readily available data on the internet or database". In a similar view Tanaka asserts that;

The current use of technology when accessing online resources does not give use access to adequate research data. I think the institution should provide access to more paid sites which contains information.

The use of technology enables student nurses to achieve self-direction in their learning process. Technology use has shifted the pedagogical learning classroom centred to decentralised classroom. The participant narrates that the use of technology should be able to facilitate inclusive learning process without leaving anyone behind. The technology should be accessible to the students and the lecturers to the students. The strategies adopted in the use of technology must be effective for the success of the students. Mercy shared her expectations that, "students are exposed to various tools which the institution is not ready to offer. The lecturers are not well versed in technology use which leads them to operate below our expectations."

The students are enrolled with different technological backgrounds and experiences which affect their preference of technology in the learning process. The students gave comprehensive

descriptive experiences of their use of technology. Urban students are more tech savvy than those with strong rural backgrounds. Paida asserts that ICT help me to engage in class proceedings, however I prefer hands-on learning, and online lectures are creating a gap on us because some students do not know how to use mobile phones for learning purposes.

Commenting on the expectations of accessing medical technology during learning. Tendai contends that “the institution should give us access to medical technology during practise than focussing too much on theory to improve patient care”.

The results showed that the students have varied perceptions and expectations on the use of technology at Parirenyatwa School of Nursing.

4.4.3 Research Question 3: What are the challenges encountered by nursing students on the use of technology in nursing education at Parirenyatwa School of Nursing?

The use of technology changes the subtleties of learning and teaching process and requires the time investment into learning how to use various technologies for the students and the institutions. The students are required to bring their own devices to class however, this is difficult to implement. Responding to the question on the challenges of integrating technology in nursing education at Parirenyatwa School of Nursing the students shared challenges relating to poor planning, poor network and poor funding on the training, lack of technological competencies before going to nursing education and lack of efficient devices.

Some students who lack access to technology before their enrolment at the Parirenyatwa school of nursing had difficulties in using technology. Chipso account her account of the challenges she encountered when using technology;

Before I was enrolled at the institution I was a novice on the computer and my first time of using a computer I was registering as a nursing student. On the first day I was asked

to open a student portal and did not know where to start. Using laptops and cell phones in education create class system between the rich and the poor, the technologically affluent and those who cannot use computers.

To answer the same question Panganai asserts that;

...although I had previous experience with computers integrating my experience with the school demands was challenging since I used a computer mainly for other activities which were not academic related.

The use of technology is hindered by the lack of proper planning on how to use the technology in the teaching process. The institution must properly plan on how to use technology as an instructional tool. The participants asserts that the lack of preparation and sudden adoption of technology as an instructional tool possess challenges to the use of technology. In light of this Mercy asserts that “they require us to attend online classes on Zoom or WhatsApp whilst our lecturers do not understand how to use these applications to conduct online lessons. Most of the times the lectures are not conducted because of lack of knowledge to use these technologies”.

Kudakwashe also narrates that;

The lecturers needs to be well prepared to use these technologies before they finally use them conducting when lectures. The lecturers must be self-motivated to get training to use different technological devices. Thus the practise to use technology on the part of the institution is critical to meet the expectations of the students.

Another problem cited by the participants is poor network connectivity. Successful integration of technology in nursing education at Parirenyatwa School of Nursing requires connectivity in the classroom. One of the most efficient network connectivity is connection to Wi-Fi which

improve student engagement in the classroom and information exchange. This provides both the students and lecturers with immediate access information from different writers (Clark, 2021). When bring your own device (BYOD) strategy is fully implemented there is need for effective network infrastructure to support different mobile devices in the classroom setting (Benham et al, 2014). The problem of lack of connectivity was confirmed by Tanaka that “poor internet connectivity possess challenges when accessing World-Wide Web.”

Nyasha as well asserts that poor network affects academic progress;

It is difficult to access my student portal especially when I’m not at the college premises. In addition to poor network connectivity the lack of information literacy skills affected my progress as a student. I had problems in accessing information for assignments and other research tasks

The cost of purchasing data is too high for the poor students. In light of this Panganai asserts that “data has become too expensive in this poor economy and sometimes I fail to attend online lectures because I don’t have enough resources to purchase data”. The participants bemoan the poor medical technology at Parirenyatwa School of Nursing. In light of this Mary notes that;

...the access to modern health technology is still poor at Parirenyatwa School of Nursing. You have to find your own ways to access electronic health records. You virtually have to learn how to use health technology on your own.

Tendai narrates that there is limited exposure to information management. Similar, Mercy argues that;

...although we are exposed to computers they are limited in the clinical setting. This has made it even difficult for me when I was working as a nursing assistant to

understand the electronic health records. The lack of efficient access to technology has led us to use paper documents to keep patient records.

There are similar patterns in the responses provided by the interviewees who participated in this study.

4.4.4 Research Question 4: Which areas require developments to improve the perceptions and expectations of student nurses regarding the use of technology at Parirenyatwa School of Nursing?

The participants were asked to provide strategies that can be adopted to improve the use of technology at Parirenyatwa School of Nursing. The participants identified strategies such as adopting a multidimensional approach in dealing with the challenges of network connectivity and provide IT support at the institution which helps in the use of technology to improve the use of technology.

It came out of the research that there is need to improve exposure and access to technology. The need to efficiently adopt informatics in the nursing practise as professionals requires use of IT technology. The organisation need to access different search engines to improve student access to information. Chipso argues that “we mostly access free search engines and websites which does not give enough information. The school should enable us to access technical sites that can help use access information that enhance our learning.”

Tanaka elaborated this point saying;

The institution should improve information communication skills to the freshmen for them to find it less difficult to implement technological skills during nursing practises. This will enable them to find the right material on the internet. When I was enrolled I

mainly used Wikipedia to access information regardless of the fact that it does not provide credible information.

Similar patterns emerged from the respondents that the development of scientific innovation across the globe meant that there is need for the students to have knowledge of technology so that they may not be left in a vacuum in a fast changing world of technology. This makes the learning process more interactive. Panganai asserts that, “we need knowledge and skills to use technology because nursing education is evidenced based that more exposure good exposure to research information”. Further. Chipo narrates that, “I feel lost when it comes to practise because what we learn in class is different from the actual practise in the hospital the integration of technology will help students to integrate different competencies acquired in the classroom and the work place.” Several areas of improvement were identified as essential to enhance the use of technology.

4.5 Chapter Summary

This chapter presented the perceptions and expectations of student nurses regarding the use of technology in nursing education at Parirenyatwa School of Nursing. To respond to the research questions set on the onset of the study the researcher interviewed 10 nursing students at Parirenyatwa School of Nursing and generated data regarding their use of technology. The 1 out of the 10 participants that were selected as sample did not turn up for the interview because of personal reasons making 9 participants the final sample of the study.

CHAPTER 5: SUMMARY, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter discusses the major findings of the study. The chapter presents the summary of the study, discusses the major findings emanated from the study and presents the conclusions. The chapter also presents the implications of the study to various stakeholders who include students, lecturers, the college and the government. The ends end by giving recommendations and area of future studies.

5.2 Summary

The purpose of the study was to assess perceptions and expectations of student nurses regarding the use of technology in nursing education at Parirenyatwa School of nursing. In the first chapter the study focused on background information that informed the study. The chapter provided background information on the use of technology in nursing education, the statement of the problem, the research objectives and questions, the significance of the study and limitations and delimitations of the study. The chapter mapped the direction in which the study followed.

In chapter 2 the study focused on literature review. The study reviewed the conceptual literature explaining the concept of technology and its benefits and challenges. The chapter further presented the theoretical framework used for the study. The study adopted the social cognitive theory of self-efficacy and technology acceptance model as the foundation to understand the lived experiences of student nurses at Parirenyatwa School of nursing. The chapter further, presented the empirical literature to identify the research gap which necessitated this study.

Chapter 3 presented the methodology adopted by the study. The study adopted qualitative phenomenology to understand the perceptions and expectations of nursing students regarding the use of technology at Parirenyatwa School of nursing. The chapter presented the study population and the inclusion and exclusion criteria used to select the participants. The study used purposive sampling and used 10 participants as the sample size. The chapter presented some ethical considerations used during the research.

In Chapter 4 focus was placed on data presentation. The chapter presented the study participation rate. The study intended to interview 10 participants however 1 participant withdrew from the interview leaving 9 participants to be the final sample used. The demographic information of the participants was presented. The results were presented using thematic approach. The findings were used to draw conclusions and recommendations used in this study.

5.3 Discussion of findings

Technology use has significantly increased in the country for the past decade. However little attention has been given on the influence of the student's expectations and perceptions regarding the use of technology in nursing education in Zimbabwe. The study aim to understand the perceptions and expectations of student nurses regarding the use of technology. The analysis of the lived experiences of student nurses help to help better understanding the perceptions and expectations of nursing students regarding the use of technology in nursing education. Data analysis conducted was done using each research question. The discussion of the results was done in relation to the research questions and the previous literature.

5.3.1 Research Question 1: What are the technological innovations used in nursing education at Parirenyatwa School of Nursing?

All the participants of the study affirm the existence of technology at Parirenyatwa School of nursing. They agreed that they use different forms of technology during their studies this resonates with Mupfiga et al (2016) that the universities in Zimbabwe have adopted different technologies. Common responses show that the institution uses desktops and laptops to access information. The use of technology is not a new phenomenon at Parirenyatwa School of nursing and these technologies have been answered in class. The use of technology increased since the outbreak of Covid 19. The participants of this study were enrolled during the same period when the first case of Covid 19 was discovered in Zimbabwe. The outbreak of Covid19 transformed the existing educational system of face to face classroom to an online system. The use of technology became more interactive between the students and lecturers. According to Alanagreh, Alzoughool and Atoum (2020) the outbreak of the Covid19 and the measure put in place to curb transformed the social, economic and political way of life of the people. ICT became an essential tool in the educational fraternity. To this end the operations of Parirenyatwa School of Nursing has been hinged on the use of technology since the outbreak of Covid19 a period within which this study was conducted. Thus the use of technology was a common phenomenon at Parirenyatwa School of nursing but changed significantly since the outbreak of Covid19. The ICT tools identified include computers, tablets and mobile phones. Further, reliable information was retrieved from various websites such as .org, .edu and .gov. Social media handle such as WhatsApp, Zoom and YouTube among others have been integrated into education to help in sharing information between lecturers and students.

5.3.2 Research Question 2: What are the perceptions and expectations of student nurses regarding the use of technology in nursing education at Parirenyatwa School of Nursing?

The research question sought to understand the perceptions and expectations of student nurses regarding the use of technology in nursing education. In examining the perceptions of the students towards the use of technology. Technology is considered an enabling factor in education that facilitates communication between students and lecturers. As noted by Mitchell (2015) that the individual feeling or perceptions brings confidence and improve their competences. The participants had mixed perceptions towards the use of technology. The perceptions were better understood in the lens of the Social Cognitive Theory of self-efficacy and the Technology Acceptance Model. The theory of self-efficacy shows that the perceptions of a person are determined by their ability to use the technology. The people with low self-efficacy developed negative perceptions on the use of technology. According to Davis (1989) technology use is greatly impacted by the attitude of the user. Thus the perceptions of a person are built upon the internal mental processes that motivate someone to accept or refuse it. Thus the skills that the students acquire before entering college determine their perceptions towards technology in education. It can be inferred from the findings that the participants who had technological experience before entrance into college had high expectations towards the use of technology because of its high efficacy. However, the lack had low self-efficacy negatively perceive technology as difficult to use in education setting. Important to note is that the negative attitude arise from lack of experience (Bennett, 2017). It is the duty of the institution to create a properly functioning system that enables effective technology use.

5.3.3 Research Question 3: What are the challenges encountered by nursing students on the use of technology in nursing education at Parirenyatwa School of Nursing?

Some students were first exposed to the use of technology at a later stage in their lives. It surfaced that the participants had different levels of knowledge on the use of technology. The students who permanently reside in rural areas before enrolment found it difficult to use ICT devices because they lacked exposure (Battle and Tyson, 2018). As argued by Mupfiga et al (2016) the late entry in technology use poses challenges to the user who will end up develop negative attitudes towards technology. Thus the lack of exposure affected information management and data retrieving skills for assignments and evidence based papers (Raman 2015).

According to Clark (2021) lack of connection, poor knowledge base and faculty experience affects the integration of technology in education. According to Chiridza et al (2016) the use of technology in Zimbabwe is impacted by poor infrastructure that supports network connectivity. These difficulties impacted the perceptions and expectations of the student nurses at Parirenyatwa School of Nursing.

5.3.4 Research Question 4: Which areas require developments to improve the perceptions and expectations of student nurses regarding the use of technology at Parirenyatwa School of Nursing?

The question was designed to understand the areas that require improvement in the use of technology in nursing education. It came out of the study there are many areas that require improvements through the recommendations that arise from the study. Buabeng-Andoh (2018) asserts there is need to improve social persuasion, mastering experiences, vicarious experiences and physiological responses to the technological innovations introduced.

On the other hand the improvements are also required at the institution such as proper network connectivity through Wi-Fi and acquiring efficient computers that can lead to improved lecture delivery. As noted by Damewood (2016) technological use by the institution provides the ground for innovation. Thus the perceptions and expectations of student nurses can be improved by focusing on the students themselves and the college.

5.4 Conclusions

The study aimed to present the perceptions and expectations of student nurses at Parirenyatwa School of nursing regarding the use of technology. To achieve the aim the researcher conducted qualitative phenomenology to understand the lived experiences of the students. The social cognitive theory of self-efficacy and the technology acceptance model formed the theoretical foundations of the study. A final sample size of 9 participants was used to understand the lived experience of the student nurses. The results were presented using the thematic approach showing that there is minimal technology use at Parirenyatwa School of nursing which is insufficient to meet the ever changing needs of nursing education. It came out of the study that the students had positive perceptions and expectations however, some students who lacked exposure to technology disregard the use of technology because it increase the social gap among students. The study established that there are various constraints that hinder the use of technology in nursing education. Therefore the study can conclude that the student nurses have positive perceptions and expectations regarding the use of technology regardless of negative attitude emanating from the background of students.

5.5 Implications

This study adds to studies on the perceptions and expectations of student nurses at Parirenyatwa School of Nursing. The study findings will assist various stakeholders in the nursing education that include students, lecturers, administrators and institution and the policy makers. The

outbreak of the Covid19 increased the need to integrate technology in education to improve the provision of education. The pandemic led to a social change that requires serious consideration on the use of technology. To add the current crop of students are technologically affluent and their skills maybe used to improve their learning process. The efficient use of technology requires a multi-stakeholder approach to efficiently improve technology use in nursing education to improve the perception and expectations of the students.

5.5.1 Students

The integration of technology is becoming a reality in education aided by the social change brought by global pandemics. The adoption of technology in nursing education is essential to improve learning process and patient care in the clinical setting (Clark 2021). The students may develop positive perceptions when the proper technology setting is implemented. The ages enrolled at Parirenyatwa hospital are motivated to use technology thereby improving the workforce produced. The results showed that the majority of the participants have positive perceptions towards the use of technology in nursing education. However, the students with negative perceptions were mainly arising from their social backgrounds. Therefore the negative perceptions were not intrinsic to the nature of technology but the students' experiences. Thus the use of technology can develop positive perception and expectations towards the use of technology.

5.5.2 Lecturers

The use of technology was not hands on which meant that there was less interaction between the lecturers and students. The findings showed that the age of lecturers at the institution affected their knowledge of using ICT tools. This lack of skills to operate ICT tools led them to denounce the use of technology as a teaching tool. The lecturers can improve the perceived usefulness and perceived ease of use with regard to technology in nursing education if they

efficiently integrate it. Postgraduate certificate in ICT education is essential to improve the ability of the lecturers. The lecturers should receive training that facilitates technology use at the college

5.5.3 Institution

The study established the nature of technology at Parirenyatwa School of Nursing does not sufficiently meet the ever changing needs of nursing education. The use of technology was identified at the college was mainly for assignment and evidence based papers which is insufficient to deal with current need. According to Clark (2021) a successful integration of technology requires the institution to pave way and create a framework that facilitates the use of technology. The findings of the study suggest that the college should quickly integrate appropriate technology that meet the changing needs of education.

5.5.4 Policy makers

The study highlighted that the use of technology at Parirenyatwa hospital is still very poor and requires massive improvement to meet the new challenges that require technologies. The findings explained that there is need for multi-stakeholder approach to improve the perceptions and expectations of student nurses with regards to the use of technology. The policy makers should provide equipment and make mandatory requirements for each institution to have technological standards that can lead to the improvement of the teaching process. Bennet (2017) asserts that it may be beneficial if the policy makers at the institution or the health ministry to make mandatory requirements. The findings of the study may not only be used to improve the college but can also provide the policy makers with the framework to craft policy at macro level.

5.6 Recommendations

The conclusions established in this study led the researcher to generate the following recommendations:

- To Parirenyatwa School of Nursing

The study recommends the college to improve technological use at the institution. The improvement of technology use at the college is essential to develop positive perceptions and expectations on the use of technology among students.

- To the Policy Makers/ Government

The study recommends the government to enact policy frameworks that compel Parirenyatwa School of nursing to improve the use of technology by acquiring efficient ICT tools.

5.7 Suggestions for further studies

This study focused on the perceptions and expectations of student nurses regarding the use of technology in nursing education at Parirenyatwa School of nursing. Future studies can be conducted perceptions and expectations of lecturers regarding the use of technology in teaching student nurses. The study made use of qualitative phenomenology. Further studies can be conducted using other methodologies such as quantitative and qualitative research and other nursing schools.

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APPENDICES

APPENDIX 1: Timetable

Activity (Submission of)	Dates of submission to supervisor for marking
Proposal	8/03/2022
Chapter 1	18/03/2022
Chapter 2	28/03/2022
Data Collection Instruments/Tools	7/04/2022
Chapter 3	7/04/2022
Chapter 4	20/04/2022
Chapter 5	27/04/2022
Full bound draft	1/05/2022
Final draft	10/05/2022

APPENDIX 2: Budget

Activity/ item(s)	Projected Cost (USD)
Stationary	15
Instrument design and printing	20
Typing	0
Photocopying	10
Travelling	30
Binding	30
Interviews	0
Communication	25
Total	130

APPENDIX 3: Consent Form

Dear Sir/Madam

My name is Nyasha Musiyiwa. I am a POST BASIC BACHELOR OF SCIENCE IN NURSING STUDENT AT AFRICA UNIVERSITY. I intend to conduct a research titled PERCEPTIONS AND EXPECTATIONS OF STUDENT NURSES REGARDING THE USE OF TECHNOLOGY IN NURSING EDUCATION AT PARIRENYATWA SCHOOL OF NURSING. I kindly request you to contribute to this study through participating in interviews. The interview process shall be guided by the following aspects.

Purpose of Study

The purpose of the research is to investigate the perceptions and expectations of student nurses regarding the use of technology in nursing education at Parirenyatwa School of Nursing.

Participants

The study will include final year nursing students at Parirenyatwa School of Nursing. You have been selected to participate in this study because you meet the inclusion criteria.

Voluntarism

Participation in this study is subject to your own decisions which you will maintain throughout the research. You may withdraw your contribution during and after the interview.

Procedures

A questionnaire will be presented to you which contains questions relating to your demographic information. Interview questions will follow which will be recorded using audio tapes. This will take an average of 20 minutes.

Confidentiality

This study will maintain the principle of confidentiality. No name or any form of identification will be required to participate in the research. The information emanating from this research will be used for the study only. Your responses will be shared between the researcher and the supervisor. The recorded information shall be discarded upon completion of the research.

Cost

No cost will be incurred for participating in this research. No monetary benefits will come to you for your participation because the research is for academic purpose only.

Potential risks

There are no potential risks that are associated with your participation in this research because your contribution will remain private and if there is a need to reference your contribution pseudonyms will be used to reduce risks and maintain confidentiality.

Your agreement will be greatly appreciated. Please tick in one of the following boxes to show your response.

☐ I agree

☐ I do not agree

Signature.....

Date.....

Witness's signature.....

Date.....

Researcher's Signature.....

Date.....

Researcher: Nyasha Musiyiwa

APPENDIX 4: Interview guide

I request you to complete this questionnaire in the best of your knowledge and honesty. The success of the study depends on the nature of your responses.

Instructions

- i. Please mark or write your appropriate response in the provided space
- ii. Use the words and language of your choice.

1. Name (Optional)

.....

2. Permanent residential location

.....

3. Gender

Male

Female.....

4. Age range (Please tick)

16 to 20 years.....

21 to 30 years.....

31 and above.....

5. Academic Year (please tick)

Level 1/ 1st year.....

Level 2/ 2nd year.....

Level 3/ Final year.....

Research guide

1. What are the technological innovations used in nursing education at Parirenyatwa School of Nursing?
2. What are your perceptions and expectations with regard the use of technology in nursing education at Parirenyatwa School of Nursing?
3. What are the challenges that you encountered on the use of technology in nursing education at Parirenyatwa School of Nursing?
4. Which areas require developments to improve your perceptions and expectations regarding the use of technology at Parirenyatwa School of Nursing?

APPENDIX 5: Letter requesting to carry out a study at Parirenyatwa School of Nursing



P. Bag 1320

Fairview Road

Mutare

20 January 2022

The Group Chief Executive

Parirenyatwa Group of Hospitals

P.O Box CY 198

Causeway

Harare

Dear Sir/Madam

My name is Nyasha Musiyiwa. I am a POST BASIC BACHELOR OF SCIENCE IN NURSING student at Africa University. I intend to conduct a research titled PERCEPTIONS AND EXPECTATIONS OF STUDENT NURSES REGARDING THE USE OF TECHNOLOGY IN NURSING EDUCATION AT PARIRENYATWA SCHOOL OF NURSING. I kindly ask for your permission to conduct this research at this organisation. The research will help me to complete my studies and can also assist the institutions to understand the views of the students. The study will used for academic purposes only.

Your permission will be greatly appreciated.

Yours faithfully

Nyasha Musiyiwa

APPENDIX 6: Approval to conduct the study at Parirenyatwa School of Nursing

All communications should be addressed to
"THE GROUP CHIEF EXECUTIVE"
Telephone: 701520-701554/7
Fax: 706627
Website: www.parihosp.org



PARIRENYATWA GROUP OF HOSPITALS
P.O Box CY 198
Causeway
Zimbabwe

04 March 2022

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH STUDY AT
PARIRENYATWA GROUP OF HOSPITALS : MS NYASHA MUSIWIWA

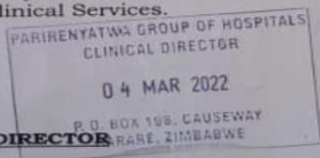
The above matter refers.

The Parirenyatwa Group of Hospitals hereby grants you permission to conduct research on:-
An Investigation on nursing students perceptions and expectations regarding the use of technology in nursing education.

The permission is granted subject to the following conditions:-

1. The researcher will provide all sundries necessary for sample collections. ☒
2. The researcher sponsors all payments for the tests involved. ☒
3. The hospital incurs no cost in the course of the research. ☒
4. All relevant departments are notified in advance and the Head of section/ward signs acknowledgement of such notification. ☒
5. The conduct of the research does not interfere or interrupt the daily service provision by the hospital. ☒
6. Formal written feedback on research outcomes must be given to the Director of Clinical Services. ☒
7. Permission for publication of research must be obtained from the Director of Clinical Services. ☒


DR. M. MHLANGA
ACTING CLINICAL DIRECTOR


PARIRENYATWA GROUP OF HOSPITALS
CLINICAL DIRECTOR
04 MAR 2022
P.O. BOX 198, CAUSEWAY
HARARE, ZIMBABWE