

**ASSESSMENT OF SATISFACTION WITH ONLINE LEARNING
ENVIRONMENT AMONG NURSING STUDENTS IN KENYA MEDICAL
TRAINING COLLEGE (KMTC) NAIROBI.**

MARYLINE CHEBII

MSN-3-0687-1/2020

**A RESEARCH THESIS SUBMITTED TO THE SCHOOL OF MEDICINE AND
HEALTH SCIENCES IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE CONFEREMENT OF DEGREE OF MASTER OF SCIENCE IN
NURSING EDUCATION OF KENYA METHODIST UNIVERSITY**

SEPTEMBER, 2023

DECLARATION AND RECOMMENDATION

Student Declaration

“I declare that this research thesis is my original work and has not been presented for a degree or any other award in any other university.”

Signed _____ Date: _____

Maryline Chebii

MSN-3-0687-1/2020

Recommendation by Supervisors

“We confirm that the work reported in this thesis was carried out by the candidate under our supervision.”

Signed _____ Date: _____

Dr. Agnes Kasusu Mutinda (PhD)

Kenya Methodist University

Signed _____ Date: _____

Dr. Susan Njuguna (PhD)

Daystar University

© **Copyright 2023**, Maryline Jepkembio Chebii

All rights reserved. No part of this thesis may be reproduced, stored in any retrieval system or transmitted in any form or by any means, electronically, mechanically, by photocopying or otherwise, without prior written permission of that author of Kenya Methodist University, on that behalf

DEDICATION

I dedicate this thesis to God, for good health and peace of mind and my family for the great support they gave me during the entire process.

ACKNOWLEDGEMENT

I acknowledge the following people for walking with me throughout this academic journey:

My supervisors, for patiently guiding me in this process, from conception of the idea, to execution and finally reporting. I will forever appreciate their quick responses and encouragement throughout the process, and making it a mentoring as well as a learning process.

My Colleagues who were my classmates in the masters class, for their encouragement and guidance.

My workmates, for the support they gave me especially lessening my duties to allow me have time to do my thesis.

ABSTRACT

In recent years, there has been an increased use of eLearning in medical training colleges, driven by technological advancements, learners' desire for flexibility, and the COVID-19 pandemic. However, there is limited literature on nursing students' satisfaction with the eLearning environment at Kenya Medical Training College (KMTC) in Nairobi. Therefore, this study aimed to assess nursing students' satisfaction with online learning at KMTC Nairobi, focusing on teacher, platform, and user-related variables. A cross-sectional survey was conducted, involving 259 nursing students who were selected proportionately from eligible classes. Data was collected using self-administered semi-structured questionnaires and a Focus Group Discussion guide. Ethical clearance was obtained, and participants were informed of the study objectives before giving consent. The collected data was coded, cleaned, and analysed using SPSS software. The study included 234 questionnaires in the final analysis, achieving a response rate of 91%. The majority of participants were preservice learners (75.6%) in their first year of training (50%). Female students constituted a significant proportion (81.5%) of the sample. The primary online learning platforms used were Zoom and Google Classrooms. The study investigated student characteristics, instructor characteristics, platform characteristics, and institutional support in relation to satisfaction with online learning. The findings revealed that a significant proportion of students faced challenges in accessing a computer (50.2%), reliable internet (65.1%), and a conducive study area (53.2%). Cross-tabulation analysis showed that various student factors, including navigating online platforms ($p = 0.026$), browsing the internet ($p = 0.003$), accessing and using a computer ($p = 0.003$), having reliable internet access ($p = 0.01$), and being in a conducive environment for online classes ($p = 0.01$), were significantly associated with high satisfaction with e-learning. Instructor factors associated with high satisfaction included teacher knowledge ($p = 0.001$), active facilitation on online platforms ($p = 0.001$), concern for student needs ($p = 0.002$), and providing prompt feedback ($p = 0.001$). Platform characteristics significantly influenced satisfaction, with a small percentage of students able to upload work onto the platform (34.5%), hold online discussions easily (35.4%), or receive necessary technical support (39.4%). Students expressed significant satisfaction ($p < 0.05$) with platforms offering updated materials, flexibility in learning, accessibility to content and sessions, efficient time management, and time-saving benefits. Higher satisfaction levels ($p < 0.05$) were observed when students could easily upload content, engage in discussions, had clear objectives, encountered logically organized content, experienced seamless communication, and had access to technical support. Institutional support for e-learning was perceived as inadequate, significantly impacting satisfaction levels ($p < 0.05$), particularly in terms of technical support availability and access to e-learning platforms for all students. The study recommends actions to improve the online learning experience, including ensuring access to computers and reliable internet, enhancing instructor effectiveness, improving platform functionality, and addressing gaps in institutional support. Future studies are also suggested to investigate instructor training needs and interventions for technical skill improvement.

TABLE OF CONTENTS

DECLARATION AND RECOMMENDATION	ii
DEDICATION	iv
ACKNOWLEDGEMENT.....	v
ABSTRACT.....	vi
TABLE OF CONTENTS	vii
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF ABBREVIATIONS AND ACRONYMS	xii
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background of the study	1
1.2 Statement of the Problem	5
1.3 Purpose of the study	6
1.4 Broad Objective	7
1.5 Specific Objectives.....	7
1.6 Research Questions	8
1.7 Justification of the Study	8
1.8 Limitations of the Study.....	9
1.9 Delimitation of the Study	9
1.10 Significance of the Study	9
1.11 Assumptions of the Study	10
1.12 Operational definition of terms	10
CHAPTER TWO	12
LITERATURE REVIEW	12
2.1 Introduction	12
2.2 Theoretical Framework	15
2.3 Factors influencing students' satisfaction with online learning.....	16
2.4 Conceptual framework	23

CHAPTER THREE	25
METHODS AND MATERIALS	25
3.1 Introduction	25
3.2 Research Design	25
3.3 Study area	26
3.5 Study population	27
3.6 Inclusion criteria	27
3.7 Exclusion criteria	28
3.8 Sampling technique	28
3.9 Operational definition of variables	30
3.10 Data collection instrument	31
3.11 Pre-testing of the tools	32
3.12 Validity and reliability of the tool	32
3.13 Data Collection process	33
3.14 Data Analysis and Presentation	34
3.15 Ethical approval	35
CHAPTER FOUR	36
RESULTS AND DISCUSSION	36
4.1 Introduction	36
4.2 Response Rate	36
4.3 Socio-demographic data of the respondents	37
4.4 Socio-demographics vs students' satisfaction	38
4.5 Student characteristics	40
4.6 Student characteristics vs satisfaction level	41
4.7 Instructor characteristics	42
4.8 Instructor characteristics vs satisfaction	43
4.9 Platform characteristics	44
4.10 Institutional support	50
4.11 Institutional support vs satisfaction levels	51
4.12 Themes from Qualitative data	52

4.13	Discussion of Research Findings	54
CHAPTER FIVE		57
CONCLUSION AND RECOMMENDATIONS.....		57
5.1	Introduction	57
5.2	Conclusions	57
5.3	Recommendations	59
5.4	Further studies	61
REFERENCES.....		62
APPENDICES.....		68
Appendix 1: Consent form.....		68
Appendix 2: Questionnaire		71
Appendix 3: FGD Guide.....		76
Appendix 4: Map indicating location of KMTC Nairobi		77
Appendix 5: KMTC Approval		78
Appendix 6: KeMU SSERC Approval		79
Appendix 7: NACOSTI Approval		80

LIST OF TABLES

Table 4. 1 Socio-Demographic characteristic of respondents	37
Table 4. 1 socio-demographics vs students' satisfaction	39
Table 4. 3 Student characteristics vs satisfaction level.....	42
Table 4. 4 Instructor characteristics vs satisfaction	44
Table 4. 5 Platform (Quality and flexibility) vs satisfaction	46
Table 4. 6 Platform (organisation of course structure and deployed technology) Vs. satisfaction levels	49
Table 4. 7 Institutional support vs satisfaction levels	51

LIST OF FIGURES

Figure 2.1 Conceptual framework showing relationship between study variables	24
Figure 4.1 Most frequently used platform in online sessions	38
Figure 4.2 Students' ability to use eLearning technology	40
Figure 4.3 Students' access to resources that supports eLearning	41
Figure 4.4 Students' description of instructors on eLearning matters	43
Figure 4.5 Perceptions relating to quality and flexibility of eLearning platforms	45
Figure 4.6 Perceptions relating to the Course structure and deployed technology	47
Figure 4.7 Perceptions of institutional support towards eLearning	50

LIST OF ABBREVIATIONS AND ACRONYMS

KMTC:	Kenya medical training college
TAM:	Technology Acceptance Model
TRA:	Theory of Reasoned Action
UTAUT:	Unified Theory of Acceptance and Use of Technology
TPB:	Theory of planned behavior.
KEMU:	Kenya Methodist University
LMS:	Learning Management System

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Educational institutions worldwide had to shift the teaching delivery mode from face to face to online teaching during COVID-19. Most of the nursing training institutions were based on face-to-face learning until the sudden outbreak of COVID-19. Racheva (2018)) describes online learning as a virtual classroom environment that allows for interaction between the instructor and the learners as they are participating in studying activities. Similarly, Kenya Medical training College (KMTC) defines online learning as a systematic application and integration of information and communication Technologies in the process of teaching and learning (Kenya Medical Training College [KMTC], 2019b). It is the use of a computer connected to a network to learn from anywhere, and at any time (Dhawan, 2020).

The number of institutions offering courses online has risen exponentially across the world (Dhawan, 2020; Moloney & Oakley, 2016). The uptake of online learning is importunately higher in developed countries compared to low-and-medium income economies. In 2016, there were over 6 million students in the U.S. who enrolled in at least one online course (Palvia et al., 2018), and the proportion of students enrolled in at least one online course has risen to over 30%. A recent study in Kenyan Public universities

revealed a few lecturers (32%) and students (35%) were using e-learning and few courses (10%) were offered online (Makokha & Mutisya, 2016).

Several challenges and opportunities have made online learning a must-have in the future (Dhawan, 2020). Web-based learning has recently become possible because of tremendous advanced technologies. Further, the demand by working learners from remote areas for more accessible approaches (Matiang'i et al., 2018) that allows them to study while in employment, but with minimal face-to-face teacher-student interaction is motivating institutions to listen to and act on issues raised by this constituency of learners. Lastly, the emergence of situations, for instance COVID-19 pandemic, have significantly interrupted traditional classroom learning across the globe (United Nations Sustainable Development Group [UNSDG], 2020) and challenged educational institutions to alter content delivery in favor of online teaching and learning (Dhawan, 2020).

In previous studies, factors influencing students' satisfaction with online learning have been established. In a study conducted in Asia, the Open University of Kuwait reported high levels of satisfaction with blended learning (Sharafuddin & Allani, 2017). According to the study, student happiness is linked to ICT infrastructure, instructor assistance, and the quality of evaluations. There has been slow adoption of eLearning in Nursing colleges in Africa. Asunka (2018) lists a number of factors that contribute to Africa's current trend, found out that most students believe online learning has little collaboration, is poorly structured, takes a lot of time and is demanding in their study of students' opinions and experiences with online learning at a Ghanaian university. Besides, online learning offers little opportunities for practical sessions. According to Kyalo and Hopkins (2013),

significant hurdles to KMTC instructors' adoption and perceived ease of use of eLearning platforms have been identified. To begin with, there was a widespread belief that employers and professional bodies would not regard online programs to be credible. According to the survey, current online platforms do not allow for practical sessions or return demonstrations, both of which are crucial in healthcare professional training.

E-learning can accrue many benefits to both the learner and the institutions. Institutions have embraced online platforms of content delivery, albeit for reasons different from those of learners. Institutions whose primary goal is to increase enrolment, especially for non-traditional students, have typically moved online (Allen & Seaman, 2017). Moreover, according to Allen and Seaman (2017) colleges have been driven to embrace online learning so as to increase rate of degree completion and enhance prestige of an institution. KMTC (2019b) contends that implementing E-Learning will significantly improve its profile as an academic institution. This view is shared by Pham et al. (2019) who argue that online learning assists training colleges to become digitized, increase their global presence and become integral centers of the global community. Pham et al. also suggest that shifting to online learning significantly reduces the amount of investment for physical teaching and learning infrastructure. On their part, students on full-time job and no access to a nearby learning institutions are often inclined towards online learning. Therefore, online learning broadens the reach of nursing institutions to students who may not have access to physical on campus learning opportunities.

Just as it is important to look into the motivations of those that have embraced online courses, it is also instructive to interrogate why some students, teachers and institutions

may be reluctant to accept online programs. There have been concerns about the quality of online teaching environment, the value and effectiveness of content delivery, as well as the accessibility of the online platforms (Bolliger & Wasilik, 2017). Further, there are worries among the faculty and students' alike that online platforms do not allow as much interaction as face-to-face courses would have done (Moloney & Oakley, 2016). Furthermore, literature has cast doubts on the levels of faculty commitment to online teaching, students' indiscipline in online classrooms as well as the prohibitively high initial costs to set up the online classes (Bolliger & Wasilik, 2017).

Like face-to-face teaching in the confines of a physical classroom, the online teaching environment affects quality of online course content delivery (Pham et al., 2019). User satisfaction, in this case students' satisfaction, with the online teaching environment is one of the indicators of quality of teaching (Verma et al., 2020). Researchers have attempted to unravel issues affecting students' satisfaction with online learning environment. Harsasi and Sutawijaya (2018) assert that course structure, flexibility of online tutorials, perceived quality of online materials and instruction, and technological issues influence the students' satisfaction with online learning environment. Similarly, Kim and Lee (2017) investigated the influence of online teachers' support, the technical set-up of the online platform, and the learning content on the general satisfaction of underprivileged students with online learning. The online teachers' support and technical support function significantly influenced underprivileged students' satisfaction with the eLearning learning settings. Correspondingly, Abuatiq et al. (2017), cite Subjective norm, Internet experience, platform Interactivity, Self-Efficacy, and Technical Support as some of the factors that

influence perceived usefulness, ease of use, and consequently attitude and actual intention to use web-based programs.

In the light of the foregoing, determinants of students' satisfaction have geographical and demographic variation. As Kim and Lee (2017) say, addressing needs of learners is mandatory in ensuring and assuring quality of any teaching program, online platform not an exception. Since the students' initiative to engage in learning activities is important in ensuring academic success (Bolliger & Wasilik, 2017), it is particularly crucial to shed some light on the factors likely to boost learners' satisfaction in any platform, including online setups. Therefore, like face-to-face teaching in a physical classroom, the online teaching environment should be routinely assessed in order to identify potential challenges with a view to maintaining quality in online course delivery (Pham et al., 2019).

1.2 Statement of the Problem

The usage of online platforms for teaching and learning has increased in recent years. In developed economies such as the UK and the US, eLearning has been extensively used in pre-registration training of nurses (Bramer, 2020). In the past few years, online learning has incrementally attracted attention in nursing programs in middle- and low-income countries like Kenya. According to a recent survey conducted in Kenyan public universities, just a few instructors (32%) and students (35%) use e-learning, and only a few courses (10%) are offered online (Makokha & Mutisya, 2016). However, recent developments have changed this. For example, the emergence of Covid-19, which severely disrupted physical on-campus learning, and the desire for working students to

complete their education online while working, have all contributed to this trend. Though KMTC had planned to begin online learning as part of their strategic plan, the impetus for online learning increased in August 2020 due to the outbreak of the covid 19 pandemic in March 2020, which disrupted physical learning. eLearning delivered in Kenya medical training college – Nairobi involves the lectures uploading the notes, schedule the online classes and teach through the online platform. The online learning in KMTC Nairobi is managed by the Information Communication and Technology department that supports the e learning. The evaluation of user satisfaction is an important quality indicator that can identify that need to be improved in an online program for it to succeed (KMTC, 2019b). In spite of this, there is a paucity of research literature on students' satisfaction with the E-learning environment in Kenyan medical colleges, especially among nursing students. Though there is anecdotal evidence that students have trouble accessing gadgets and navigating online learning platforms, scientifically compiled evidence on the matter is scarce at Kenya Medical Training College. Systematic investigation showing students' satisfaction with the e-learning environment would influence Continuous Quality Assurance (CQA) decisions at nursing schools. The goal of this research is to find out how satisfied KMTC (Nairobi) preservice students are with online teaching and learning.

1.3 Purpose of the study

The purpose of this study is to assess satisfaction with online learning environment among nursing students in Kenya Medical Training College (KMTC) Nairobi

1.4 Broad Objective

To assess the student, instructor, teaching and learning platform and institutional related factors that influence satisfaction with online learning among nursing students in KMTC Nairobi

1.5 Specific Objectives

1. To investigate student related factors that influence satisfaction with online learning among nursing students in KMTC Nairobi
2. To assess instructor related factors that influence students' satisfaction with online learning among nursing students in KMTC Nairobi
3. To assess platform related-factors influence KMTC students' satisfaction with online learning among nursing students in KMTC Nairobi
4. To assess the institutional related-factors that influence KMTC students' satisfaction with online learning among nursing students in KMTC Nairobi.

1.6 Research Questions

1. What are the user related factors that influence satisfaction with online learning among nursing students in KMTC Nairobi?
2. What are the instructor related factors that influence students' satisfaction with online learning among nursing students in KMTC Nairobi?
3. What are the platform related-factors that influence students' satisfaction with online learning among nursing students in KMTC Nairobi?
4. What institutional related-factors influence students' satisfaction with online learning among nursing students in KMTC Nairobi?

1.7 Justification of the Study

There is a knowledge gap on the extent to which expectations of the learners are met in the online teaching environment in the Kenyan context in general and in particular in KMTC. Since the students' initiative to engage in learning activities is important in ensuring success of online learning, it is crucial to shed some lights on the factors likely to boost their learning satisfaction in any platform, including online setups. This is the gap this study intends to fill.

This study will assist training institutions to consider in support system to support e-learning in the training of students, it will potentially inform ~~te~~educational administrators in training institutions to investment, assure quality of online teaching and learning and maintain consistency on online learning. Additionally, the study will contribute to the policy formulations and reviews and the results findings will be used as data of reference.

1.8 Limitations of the Study

This being a study of respondents, social desirability bias may not be ruled out. In addition, the non-experimental study design will not enable us draw cause effect relationship between satisfaction and the various independent variables. Further, there may be factors within the individual campuses or the administration of the online administration of the tools that may bias the responses or the response rate.

1.9 Delimitation of the Study

This investigation will focus on nursing students in KMTC Nairobi. The study will limit itself to gathering data on the online learning platform, nursing students' related factors and the instructor issues that influence students' satisfaction with the online learning.

1.10 Significance of the Study

The findings from this study will identify gaps in online learning that possibly cause students' dissatisfaction with the online teaching and learning. This will potentially inform the educational administrators in KMTC on areas of investment in order to sustain and assure quality of online teaching and learning. Additionally, the study will contribute to the accumulation of evidence that could assist the regulators such as ministry of education and the nursing council of Kenya in evaluating the quality of online teaching and learning.

1.11 Assumptions of the Study

The study assumes that the respondents will be honest in their responses on issues of concern to this study. Specifically, the study assumes that the students will be truthful on matters touching on the online platform, the learning management system and the online instructors. Additionally, this research assumes that the sample population will be representative of the target population.

1.12 Operational definition of terms

E learning: A systematic application and integration of information and communication Technologies in the process of teaching and learning.

Online learning: education that takes place over in the Internet, its often referred to as e learning, the course can be offered synchronously or asynchronously

Synonymous learning: Synchronous learning means that although you will be learning from a distance, you will virtually attend a class session each week, at the same time as your instructor and classmates. The class is a firm, weekly time commitment that cannot be rescheduled.

Learning Environment: Refers to the diverse physical locations, contexts, and cultures in which students learn. It includes learning platform that allows sharing of educational materials with the learners via the web.

Online learning platform: It is a website or portal for educational information and resources that gives students access to everything they need in one place, including lectures, resources, opportunities to connect and communicate with teachers and other students, and more. It's also a great tool for both the student and the teacher to keep track of their progress.

Student related factors: The issues relating to the students that influence their satisfaction with online learning.

Instructor related factors: Aspects on the part of teachers that ultimately shape the students' experience regarding online learning.

System related factors: Characteristics of eLearning platforms that influence students' satisfaction of eLearning.

Learning management system: A software application for the administration, documentation, tracking, reporting, automation, and delivery of educational courses, training programs, or learning and development program

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In previous studies conducted around the world, several variables have been associated to student satisfaction with online learning. While the usage of eLearning has grown steadily over the world in recent years, there are still some countries that are trailing behind. This section summarizes relevant global, regional, and local literature on the subject.

2.1.1 Global

In the English-speaking Caribbean countries, Barclay et al. (2018) explored the factors that influence students' perceptions and use of eLearning. A variety of variables were identified as influencing students' satisfaction with and utilization of online learning systems in developing nations. These factors include the type of assistance provided, availability of ICT infrastructure, and the platform's simplicity of use (Barclay et al., 2018). Students from The Open University of Kuwait showed high levels of satisfaction with blended learning in research conducted in Asia. Students' satisfaction is linked to ICT infrastructure, instructors' help, and the quality of evaluations, according to the study. In the USA, about 33 percent of college students are taking at least one course online (Center for Online Education, 2020). In particular, over 6 million students enrolled in at least one online course in the United States in 2016 (Palvia et al., 2018), and the proportion of students enrolled in at least one online course in that Year was slightly over 30%.

2.1.2 Africa situation

The African continent has made great progress in the area of online education. According to Wright et al. (2017), the first online universities were piloted in Kenya, Uganda, Zimbabwe, and Ghana, with money provided by the World Bank. According to Wright et al. majority of users in Sub-Saharan Africa do not use university-provided learning management systems (LMS). Asunka (2018) identifies a variety of reasons that contribute to this trend in Africa. In their study of students' perceptions and experiences with online learning in Ghanaian University, reported that most students felt online learning sessions have minimal collaboration, are poorly structured, consume a lot of time and are demanding. Students also complained that online learning lacked a personal touch with the teacher as well as practical features.

2.1.3 The Kenyan and KMTC Situation

Online learning is becoming more popular in Kenyan colleges According to a recent survey conducted in Kenyan public universities, just a few instructors (32%) and students (35%) use e-learning, and only a few courses (10%) are offered online (Makokha & Mutisya, 2016).

In their study to identify problems that university students' face when participating in online learning, Muuro et al. (2018) discovered a number of challenges that students face in online classes. These include low internet access, a lack of instructor feedback, and uneven workload distribution between student groups. Learners' limited access to computers and internet facilities was identified as a major hindrance to online learning in

the survey. Hadullo et al. (2018) did a similar study in Kenya to assess obstacles quality eLearning. Hadullo et al. (2018) concluded that teacher traits, learner characteristics, social support, and course design are particularly important in this regard. Studies also indicate that instructors face challenges of consuming a lot of time in development of the e-learning content and of the putting of the e learning content in the on-line system. It has emerged that implementation of e-learning in Kenya faces a number of challenges which include but are not limited to inadequate ICT and e-learning infrastructure, financial constraints, expensive and inadequate Internet bandwidth, lack of operational e-learning policies, lack of technical skills.

Information technology platforms, like as online learning, are seen by the KMTC as methods for expanding access to training possibilities (KMTC, 2019b). The assessment of quality of online learning is multifaceted. Despite the high approval of online programs among tutors, a recent study by Kyalo and Hopkins (2013) found certain barriers to KMTC lecturers' acceptance and perceived ease of use of E Learning platforms. To begin with, there was a widespread belief that online programs might not be considered credible by employers and professional bodies. The instructors in the survey also claimed the existing online platforms do not allow for practical sessions and return demonstrations, both of which are critical in healthcare professional training. From heard discussions KMTC nursing students express that the online learning is ongoing and they are not certain of the satisfaction they are getting from this mode of learning in relation to how the content is delivered, the availability of the electronic gadgets they are using or the efficiency of the learning platform used in the delivery of the knowledge

2.2 Theoretical Framework

eLearning involves a systematic application and integration of information and communication Technologies in the process of teaching and learning (KMTC, 2019b). Following research onto factors that influence acceptance and satisfaction with podiums that exploit information technology and information systems, such as is with eLearning, various models have been suggested. Examples identified in a systematic literature review include the Technology Acceptance Model (TAM, TAM2), Theory of Reasoned Action (TRA), Unified Theory of Acceptance and Use of Technology (UTAUT), and Theory of planned behavior (TPB).

2.2.1 Theory of reasoned Action (TRA)

The theory of reasoned action is premised on the argument that human behavior is motivated by the objectives one wants to achieve. The theory contends that beliefs affect attitudes, which bring about intentions and thus generate behavior. This explains that the satisfaction on e-learning by the students is contributed by many factors and this includes the uptake attitude on e-learning and also the instructors and students behaviors contribute in the uptake of e learning that can be negative or positive uptake.

2.2.2 Technology Acceptance Model

The Technology Acceptance Model (TAM), initially proposed by Davis in 1989, as an off-shoot of the theory of Reasoned Action, is a systems theory (Abuatiq et al., 2017). A widely used model, the TAM proposes that perceived usefulness and ease of use are key

determinants in satisfaction with and acceptance of systems use (Deslonde & Becerra, 2018). Attitudes and actual individual behaviors are the other concepts in the TAM model. The theory has been widely used in testing acceptance of online learning technologies and software. The revised format of the model pinpoints a number of issues that have an effect on eLearning adoption (Abuatiq et al., 2017), namely Subjective norm, Internet experience, System Interactivity, Self-Efficacy, and Technical Support. According to Abuatiq et al. (2017), all these issues influence perceived usefulness, ease of use, and consequently attitude and actual intention use. Ma and Liu (2016) hold that perceived usefulness and Perceived Ease of Use influence constitute the end-user's beliefs about technology system and therefore can foretell their attitude and ultimately the user's acceptance of the system.

Students who have adjusted their behavior and attitude to positively accept e learning are satisfied and are inclined to use internet-based technologies, such as online learning programs, perceived usefulness is a precursor to satisfaction is a factor of perceived ease of use. perceived ease of use also depends on many factors, such as the enjoy ability in navigating through the system, and effective structuring of the content materials. Therefore, it is clear that the students and the instructor's behaviors and attitudes contribute to the acceptance of the e learning.

2.3 Factors influencing students' satisfaction with online learning

The existing literature identifies matters relating to the student, the quality of the online teaching system, and the instructor as some of the antecedents to students' satisfaction

with the online learning. This section presents a summary of the findings from those materials as they relate to the study objectives.

2.3.1 Student related factors.

The list of issues relating to the students that influence their satisfaction with online learning is long. The satisfaction primarily stems from the students' attitude regarding interactivity in online platform and the individual preparedness for online learning. In addition, commitment and time management, and socio-economic and demographics variables play a role. These are discussed next.

Demographic variations in use of online platforms have been observed in previous studies (Harsasi & Sutawijaya, 2018). In a study into issues contributing to students' online satisfaction and retention, Dhawan (2020) concluded that age and marital status may play a role in the student's satisfaction and retention in online classes. Besides age and marital status, the socio-economic backgrounds may not only create inequalities in access to ICT infrastructure but may also be the reason for digital literacy gap across societies (Dhawan, 2020; Kim & Lee, 2017). The ability to access and use reliable internet facilities was associated with students' satisfaction with online learning during the COVID-19 pandemic (Basuony et al., 2020). Furthermore, satisfaction levels vary across students' their previous experience with Internet (Cakir, 2016; Hadullo et al., 2018).

Individual students' commitment, particularly personal discipline to ensure adequate time to attend online classes has been a major concern to stakeholders (Dhawan, 2020). Though time flexibility aspect typically found in online classes is attractive to most learners

(Harsasi & Sutawijaya, 2018), most learners may find it problematic balancing their job, family responsibilities and social engagements with the online learning (Dhawan, 2020). Furthermore, Dhawan holds that online classes are poorly attended, and those who rarely stay active through the entire session. Additionally, there are a lot of distractions from the environment if online classes are not carefully planned (Dhawan, 2020). Therefore, Self-motivation and discipline in online learning is critical (Hadullo et al., 2018). Likewise, McIntyre et al. (2017) conducted a qualitative study of students' experiences online classes. Whereas online platforms provided a feeling of flexibility, there was the realization among students that online classes require more individual learners' commitment and self-drive than the traditional face-to-face learning.

Interactivity refers to the extent to which the students can engage each other and the faculty over the platform (Bolliger & Wasilik, 2017). Abuatiq et al. (2017) conducted a systematic literature review with a view to establishing trends in online nursing education and how to sustain quality in eLearning. Abuatiq et al. (2017) noted that good interactivity enhanced learning. However, a persistent concern among students and faculty is that online platforms do not foster as much interaction among the participants as the face-to-face learning would have done. A content analysis on the recent explosion of eLearning and the associated challenges in India by Dhawan (2020) concurs with the findings of Moloney and Oakley. Dhawan (2020) noted that most students are dissatisfied with lack of personalized attention from their online instructors. Additionally, the study observed that most students find online learning boring and less interactive.

Lack of preparedness to use the online learning managing system is a concern for many institutions. The existing digital divide across the different demographics of societies mean that some students may not afford the requisite devices and uninterrupted internet connectivity (Dhawan, 2020). In their case study of challenges bedeviling access and use of University Learning management systems, Wright et al. (2017) cite lack of access as a major issue. The study notes, for example, that while many universities in Ghana provide uninterrupted internet connectivity, most students do not have access to Internet off Campus. Moreover, some students may lack the technical know-how to navigate through the online platforms, thus feeling disgruntled (Abuatiq et al., 2017). These may end up creating inequalities in learning opportunities.

2.3.2 Instructor related factors

Instructor behavior is regarded as one of the critical elements influencing students' learning. There are a number of aspects on the part of teachers that ultimately shape the students' experience regarding online learning. To start with, giving feedback is considered useful to the instructor and the students alike (Ernest et al., 2017). Appropriate and timely feedback is a determinant of quality teaching irrespective of whether the teaching is online or face-to-face (van Popta et al., 2017). According to van Popta et al. (2017), feedback is a reaction to students' concerns or is informing learners about their academic progress. There are many sources of feedback to students, predominantly peers and the faculty. In the study of instructor's perceptions of online teaching by Richardson et al. (2016), the respondents typically observed that students often disengage if the faculty

is not responsive to students' questions, or takes longer to grade and give the learners feedback.

Likewise, as Wingo et al. (2016) reports, students find delayed or lack of real-time responses to issues posed to peers or lecturers as a major setback with online classes. Richardson et al. (2016) argue that communication is the greatest strategy to maintaining students' online engagement, considering the potential geographical disconnect between the student and the lecturer. Similarly, Wright et al. (2017) maintain that high user satisfaction and perceived usefulness of online platforms are greatly predicted by the teachers' ability to respond to students queries and to communicate effectively. In conclusion, maintaining quality feedback is indispensable to students' online satisfaction, retention and learning (Abuatiq et al., 2017).

Instructor presence has also been linked to students' perceptions of online learning (Richardson et al., 2016). there is more enthusiasm towards online classes if the students feel that faculty member on the other side of the computer is a person. The felt presence of the lecturer often encourages students to actively participate and engage in online activities; which is particularly beneficial to weak and struggling students who are able to seek timely assistance. To establish presence, Richardson et al. (2016) suggest that faculty share personal professional real-life experiences with learners, as well as timely feedback to students' questions and concerns.

In addition, the ability of lecturers to support students greatly influences students' experiences and satisfaction with online classes. In particular, struggling students

frequently need assistance on some issues for them to progress with learning. Timely support therefore motivates them to remain engaged in online classes.

2.3.3 Quality of Online learning environment

The online learning platform has numerous variables that ultimately affect quality of learning. The students' experiences shape their attitudes and satisfaction levels. This subsection looks into some of these issues.

It is critical to provide students with technical assistance in navigating web interfaces (Abuatiq et al., 2017). According to Moloney and Oakley (2016), institutions that have succeeded in offering satisfactory online programs have robust students' support services to enable learners circumnavigate through the platforms. Barbera (2017), conducted a study on what satisfies students while doing online classes. The study notes that students who have access to technical support, particularly when they are stuck, are often likely to be satisfied.

Additionally, ease of use of the online platforms is crucial. Most students are dissatisfied when they are unable to navigate easily through online learning platforms (Harsasi & Sutawijaya, 2018). Web-based learning platforms that provide students with quick in-built directions have been positively rated by students (Moloney & Oakley, 2016). In their research into factors explaining students' satisfaction with e-learning in a University in Turkey, Çallı et al. (2017) reported positive link between the perceived ease of use of the technology and perceived usefulness of online learning. These findings are consistent with the findings from a systematic literature review by Abuatiq et al. (2017). Furthermore,

Çallı et al. (2017) argued that perceived usefulness of online platforms mediates satisfaction and ease of use. Similarly, Ma and Liu (2016) hold that perceived usefulness and Perceived Ease of Use influence constitute the end-user's beliefs about technology system and therefore can foretell their attitude and ultimately the user's acceptance of the system.

Research has shown that adequate practice opportunities enhance learning (Abuatiq et al., 2017). However, there is discontent among online learners on the lack of opportunities for hands on practice and return demonstration during online learning sessions (Dhawan, 2020). Particularly in clinical subjects like nursing that require practice, the students are wary that online platforms are more theoretical. This often denies them chance to practice and build their hands refine their skills (Dhawan, 2020).

Structure of the course also counts in student's satisfaction (Harsasi & Sutawijaya, 2018). Harsasi and Sutawijaya contend that designing online courses should factor multimedia contents, practice opportunities, window for collaboration with peers as well as assessment of learning. Further, the online program designing should be cognizant of the students' desire for flexible sessions that allow some balance between work and study. Other studies also acknowledge that flexible access to learning sessions is regarded among students (Dhawan, 2020; Harsasi & Sutawijaya, 2018).

Another area of interest in this respect is the organization and timing of access to course materials. Structured access to course content is key. Students find assignments less thrilling when there is pre-emptive access to all course materials at the beginning of the

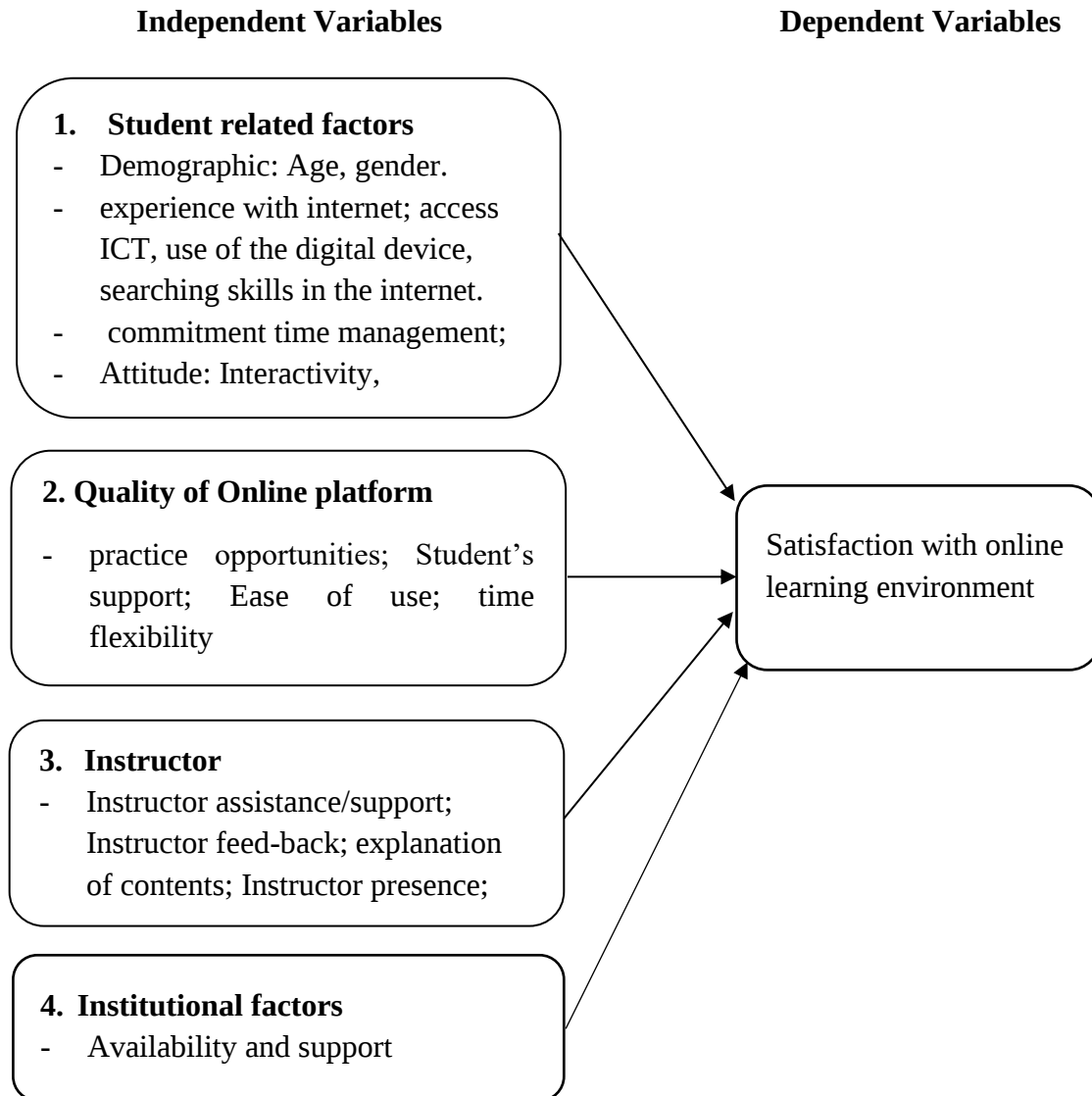
course (McIntyre et al., 2017). The course design should also factor in adequate practice exercises and hands on practice (Abuatiq et al., 2017).

2.4 Conceptual framework

The conceptual framework depicts the envisaged relationship between the various variables. It has been adapted from precious related studies (Abuatiq et al., 2017; Hadullo et al., 2018; Harsasi & Sutawijaya, 2018)

Figure 2.1

Conceptual framework showing relationship between study variables



CHAPTER THREE

METHODS AND MATERIALS

3.1 Introduction

This chapter outlines the procedures used to carry out the study. It covers the research design, variables, study area, populations, sample techniques, data collection methods, and tools. The methods and processes for data analysis used are also presented. Lastly, the ethical foundations of this study are described in this chapter.

3.2 Research Design

A cross-sectional descriptive design was used for this study, with the objective of determining the prevalence and exploring the associations between various factors related to online classes and nursing students' satisfaction levels with online learning. Specifically, the study aimed to investigate student-related factors, instructor-related factors, platform-related factors, and institutional-related factors that influence students' satisfaction with online learning among nursing students in KMTC Nairobi.

To address these objectives, a structured questionnaire was employed to collect quantitative data from nursing students who had experience with online classes and were currently enrolled at the time of data collection. The questionnaire consisted of multiple-choice questions, Likert scale items, and demographic variables. It was designed to capture information on student-related factors (e.g., demographics, technological

proficiency, self-regulated learning skills, prior online learning experience), instructor-related factors (e.g., communication skills, responsiveness, teaching effectiveness), platform-related factors (e.g., usability, accessibility, availability of instructional materials), and institutional-related factors (e.g., institutional support, resources, policies).

The collected data were analyzed using appropriate statistical methods. Descriptive statistics, such as frequencies, percentages, were calculated to summarize the data and provide an overview of the participants' responses. Inferential statistics, such as chi-square tests, were employed to examine the associations between different variables and identify any significant relationships with students' satisfaction levels.

In addition to the structured questionnaire, qualitative data were collected through interviews with the nursing students who participated in the study. These interviews aimed to provide more in-depth insights into the factors influencing students' satisfaction with online learning. The interview questions were designed to explore the students' experiences, challenges, and perceptions related to online classes.

3.3 Study area

Kenya Medical Training College has 71 campuses spread around the country. The Nairobi Campus is one of the oldest and largest in the institution, with 19 departments including nursing. The study was carried out in KMTC Nairobi Campus (Appendix V). The campus offers various, certificate, diploma and higher diploma programs, including nursing. The student population in KMTC Nairobi Campus stands at 4200 (KMTC, 2019a). The

campus is located in Nairobi County, adjacent to the Kenyatta National Referral Hospital. According to the college's policy directive, 20 percent of all content should be available online on all campuses. Therefore, findings will be generalized to all KMTC campuses.

3.4 Target population

There are 5000 nursing students in KMTC at the present (KMTC, 2019a) distributed in all the KMTC campuses in the country; this is the target population.

3.5 Study population

The accessible population for the study consisted of 600 nursing students at KMTC Nairobi, encompassing both basic (preservice) and Inservice (upgrading) programs. The sample was drawn from the students who were currently enrolled and undergoing online learning at the time of data collection. To be included in the sample, students were required to have at least two months of experience with online classes.

3.6 Inclusion criteria

- All nursing students who had experienced an online learning session before the survey in their current program of study at KMTC for at least 2 months of online learning.
- The students voluntarily agreed to respond to the survey.
- The students who were in clinical rotation or theoretical sessions during the time of the study were included.

3.7 Exclusion criteria

- Students who refused to give informed consent were excluded from the study.
- Students who couldn't be reached after two consecutive calls or email reminders were also excluded from the study.
- Students who had not participated in any online classes or had not participated for at least 2 months prior to data collection were not included in the study.

3.8 Sampling technique

3.8.1 Calculation of sample size.

There were 600 nursing students in KMTC Nairobi. This study utilized the following formula, as cited in Mugenda and Mugenda (2019), to calculate the sample size:

$$n = \frac{z^2 \times p(1 - p)}{d^2}$$

Where:

N= accessible population from which sample is drawn. In this case, N=600.

n= sample size for finite populations (When $N \geq 10000$)

Z = Critical value of the normal distribution at the required confidence level (which is ± 1.96 at the conventional 95% confidence level),

p = Sample proportion (Often assumed to be 50% when not known)

d= margin of error (advisable to use 5% in social sciences)

Hence, sample size $n = (1.96)^2 \times 0.05(1-0.05)/0.0025 = 3.8416 \times 0.05(1-0.05)/0.0025 = 384$

Since target population was finite, the final sample size (nf) was adjusted as follows;

$$nf = \frac{n}{1 + \frac{n}{N}} \text{ (Mugenda \& Mugenda, 2019)}$$

Where;

nf = Desired sample size (when the population is less than 10,000)

n = the desired sample size (when the population is more than 10,000)

N = the estimation of study population, N (nursing students in Nairobi campus=600)

$$nf = \frac{384}{1 + \frac{384}{600}}$$

$$nf = 384 \div 1.64 = 259.45 = 235 \text{ student}$$

The sample size was 235. To account for potential non-response, the sample was inflated by a factor of 10%, resulting in a final sample size of 259 participants. This adjustment was made to ensure an adequate representation and address the possibility of non-response in the study.

Given that the entire nursing population is 600, with 450 preservice students and 150 in-service students, the quotas for recruitment were distributed as follows: 194 participants were allocated to the preservice group and 65 participants were allocated to the in-service group based on their respective proportions in the overall nursing population

3.8.2 Sampling procedure and techniques

Class lists were formed from the sampling frame, which served as a representation of the entire population of nursing students at KMTC Nairobi. From these class lists, individuals were systematically recruited to participate in the study. The recruitment process involved selecting candidates from each class list until the assigned quota was reached. This systematic approach ensured that participants were drawn from various classes of pre service and in services, ensuring a representative sample from both the preservice and Inservice groups.

3.9 Operational definition of variables

3.9.1 Dependent variable

Students' overall satisfaction with the online learning environment was assessed using 5-point Likert scale items adapted from similar studies conducted elsewhere (Harsasi & Sutawijaya, 2018). These items included statements such as 'I was satisfied with the whole platform of online learning' and 'Overall, online learning was successful'.

To facilitate Chi-square analysis, the responses on the Likert scale were collapsed into two categories: Agree (consisting of strongly agree and agree) and disagree (comprising of disagree, strongly disagree, and neutral) choices. Any negative responses were reverse coded before analysis.

3.9.2 Independent variable

The independent variables in this study refer to the characteristics of the online learning environment that may influence students' satisfaction with the online learning setting. These variables include student characteristics, instructor characteristics, and characteristics of the online learning platform (refer to Appendix 1 for details). The individual items in the subscales were assessed using a 5-point Likert scale. Participants were asked to indicate their level of agreement or disagreement with each item on the scale. The Likert scale ranged from 1 (Strongly Disagree) to 5 (Strongly Agree).

3.10 Data collection instrument

Data were collected using self-administered semi-structured questionnaires (refer to Appendix I) and a Focus Group Discussion interview. The interviews were guided by the Focus Discussion Guide (FGDs, see Appendix II). The qualitative data were gathered through open-ended questions, while the quantitative data were collected using structured items. The questionnaire consisted of three sections: Section A (Consent form), Section B (Socio-demographics data), and Section C (Domains or factors). The socio-demographic information collected included age, gender, year of study, and the online platform used.

The study focused on four domains relevant to online learning: student characteristics (10 items), instructor characteristics (8 items), characteristics of the online learning platform (27 items), and students' satisfaction with online learning (5 items). The items in these domains were anchored in a five-point Likert scale, ranging from 1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, to 5 = Strongly agree.

During the data analysis process, the negative statements were reverse coded to ensure consistency in the interpretation of responses.

3.11 Pre-testing of the tools

Before being used in the study, the tool was pretested. The pretesting took place in Thika Campus, which is located in Nairobi and is nearly the same size as Nairobi Campus. The tool was administered to nursing students who had also undergone online learning, serving as participants for the pretesting phase.

3.12 Validity and reliability of the tool

During the development of the data collection tool, a comprehensive literature review was conducted to enhance the alignment of the questions with the study objectives. This ensured that the questionnaire captured relevant information related to the research topic.

Additionally, the final draft of the questionnaire underwent a rigorous review process. It was subjected to peer review and expert evaluation to gather valuable feedback and suggestions. The insights and recommendations from these reviews were carefully considered, and necessary modifications were made to refine the questionnaire.

Furthermore, the pretesting phase allowed for practical testing of the questionnaire with a sample of nursing students who had experience with online learning. Based on the feedback received during the pretesting, any necessary adjustments were incorporated into the final version of the questionnaire to improve its clarity, validity, and reliability.

3.13 Data Collection process

Data collection was conducted using a semi-structured questionnaire. Prior to filling out the questionnaire, respondents were provided with relevant information about the study, including its purpose and the measures taken to protect their privacy. Informed consent forms (Appendix I-A) were obtained from the participants. The questionnaire, estimated to take 10-15 minutes, was administered to gather the required data. Each respondent was assigned a unique code for identification purposes, ensuring their anonymity.

To maintain privacy, participants were instructed not to provide personal identification details such as name, phone contacts, postal address, or national identification number in the questionnaire. It was emphasized that participation in the study was voluntary and that there were no physical or psychological risks associated with their involvement.

The data collection period lasted for two weeks. To maximize the response rate, the researcher personally administered the questionnaires to the respondents and allowed them a few minutes to complete the questionnaire. In cases where students were not immediately available or ready to participate, follow-up contact was made to provide them with another opportunity to participate.

Two sets of focus group discussions (FGDs) were conducted as part of the data collection process. The first set involved five students from the in-service programs, specifically from critical care, accident, and medical education programs. The second set of FGDs involved five students from the preservice program, representing each of the three years.

During the FGDs, participants were engaged in structured discussions guided by the Focus Group Discussion guide (Appendix II). These discussions provided an opportunity for the students to share their experiences, perspectives, and insights related to online learning. The FGDs were conducted in a collaborative and interactive manner, allowing participants to express their opinions freely and engage in group discussions.

The FGDs were audio-recorded to ensure accurate capturing of the discussions. Detailed notes were also taken during the sessions to supplement the audio recordings. The data obtained from the FGDs were later transcribed and analyzed to identify key themes and patterns related to students' satisfaction with online learning.

By conducting FGDs with students from both the in-service and preservice programs, a comprehensive understanding of the experiences and perceptions of nursing students across different stages of their education was obtained. This added richness to the data and provided valuable insights into the factors influencing students' satisfaction with online learning.

3.14 Data Analysis and Presentation

The quantitative data collected was checked for completion, cleaned, and coded. The coded data was then entered into Microsoft Excel and imported into IBM SPSS Version 25 for analysis. Both descriptive and inferential statistics were computed to gain insights into the data. To examine the relationship between students' satisfaction and the various domains, chi-square analysis was performed. The significance level was set at $p < 0.05$, indicating that any associations with a probability of less than 0.05 were considered

statistically significant. In the domains, negative items were reverse coded before analysis to ensure consistency in the interpretation of responses.

The findings of the quantitative analysis were presented using charts, narratives, tables, and figures to effectively communicate the results. The qualitative data obtained from the focus group discussions were thematically analyzed, and the themes identified were presented in a prose format to provide a comprehensive understanding of the participants' perspectives and experiences.

3.15 Ethical approval

Ethical approval was obtained from the Kenya Methodist University Scientific and Ethical Review Committee (KeMU SERC), the National Commission for Science, Technology, and Innovation (NACOSTI), and the KMTC administration prior to data collection. Voluntary signed informed consent was obtained from all participants, ensuring their understanding and willingness to participate in the study. Participants were reassured of the confidentiality and anonymity of their responses, and measures were taken to safeguard their privacy throughout the research process.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This study sought to assess the student, instructor, teaching and learning platform and institutional factors influencing online learning satisfaction among nursing students in KMTC Nairobi. This chapter presents the findings as they relate to the study's objectives.

4.2 Response Rate

Out of the 259 questionnaires distributed, 238 were filled out, resulting in a response rate of 91.9%. During the data cleaning process, four incomplete questionnaires were excluded from the analysis. Thus, a total of 234 questionnaires were included in the final analysis. It is worth noting that response rates of 60% or higher are generally considered valid in research studies (Baruch, 1999). The response rate of 91.9% achieved in this study exceeds the acceptable threshold, indicating a strong level of participation and engagement from the participants. Nonetheless, the exclusion of incomplete questionnaires from the analysis ensured data integrity and reliability.

4.3 Socio-demographic data of the respondents

The demographic characteristics of the learners are shown in Table 4.1. The majority of the students were preservice 177(75.6%), in their first year of training (116(50%),), and female (189(81.5%). Most students (134(57.8%) were between 17 and 25 years old.

Table 4.1

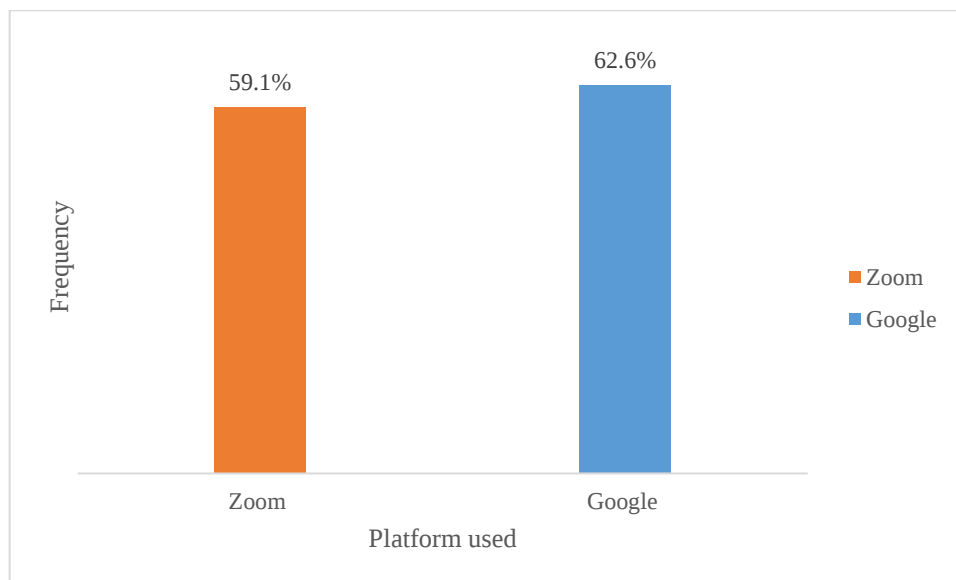
Socio-Demographic characteristic of respondents

Socio-Demographic characteristic		n	Percentage
Program	Preservice	177	75.6%
	Inservice	57	24.4%
	Total	234	100.0%
Year	1 st Year	116	50.0%
	3 rd Year	64	27.6%
	2 nd Yr	52	22.4%
	Total	232	100.0%
Semester	1 st	121	52.2%
	2 nd	107	46.1%
	3 rd	4	1.7%
	Total	232	100.0%
Age	17-25 Yrs	134	57.8%
	30-30Yrs	44	19.0%
	26-30Yrs	44	19.0%
	>40Yrs	10	4.3%
	Total	232	100.0%
Gender	Female	189	81.5%
	Male	43	18.5%
	Total	232	100.0%
Last online e class	<6Months	162	69.8%
	6M-1yr	52	22.4%
	>1Yr	18	7.8%
	Total	232	100.0%

When asked when they last participated in an online learning session, 162(69.8 %) of the students said it was less than 6 months ago, and 52(22.4%) said it was between 6 months and a year ago. Only 18(7.8%) took an online class over a year ago. Figure 4.1 depicts the platforms that most learners use to access online learning sessions. Zoom classroom and Google Classroom were almost equally used, with Google Classroom slightly leading at 144(62.6%), followed by zoom classrooms at 136(59.1%) usage.

Figure 4.1

Most frequently used platform in online sessions



4.4 Socio-demographics vs students' satisfaction

A chi-square test was used to determine the relationship between socio-demographic factors and satisfaction with online learning. Table 4.2 summarizes the findings. Program of study ($p=0.009$), age of the learner ($p=0.001$), and whether or not the learner had previously attended an online class ($p=0.014$) were all significantly related to the level of

satisfaction with online classes. However, the year of study, semester of study, learner gender, and platform type were not significant.

Table 4.2

Socio-demographics vs students' satisfaction

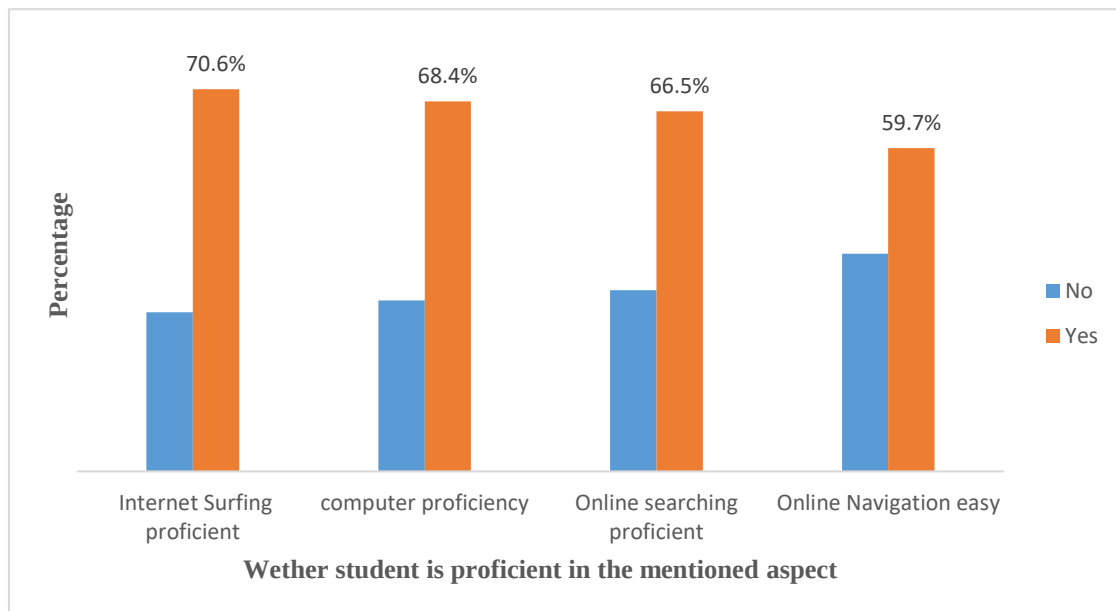
		Satisfaction Level						Significant at $p \leq 0.05$
		High		Low		Total		
Characteristic		n	%	n	%	n	%	
Program	Inservice	30	33.7%	27	18.6%	57	24.4%	$\chi^2=6.813$ df=1, p=.009*
	Preservice	59	66.3%	118	81.4%	177	75.6%	
	Total	89	100.0%	145	100.0%	234	100.0%	
Year	1 st Yr	52	58.4%	64	44.8%	116	50.0%	$\chi^2=4.152$ df=2 p=0.125
	2 nd Yr	16	18.0%	36	25.2%	52	22.4%	
	3 rd Yr	21	23.6%	43	30.1%	64	27.6%	
	Total	89	100.0%	143	100.0%	232	100.0%	
Semester	1 st	44	49.4%	77	53.8%	121	52.2%	$\chi^2=0.851$ df=2 p=0.653 ^b
	2 nd	44	49.4%	63	44.1%	107	46.1%	
	3 rd	1	1.1%	3	2.1%	4	1.7%	
	Total	89	100.0%	143	100.0%	232	100.0%	
Age	17-25 Yrs	38	42.7%	96	67.1%	134	57.8%	$\chi^2=17.156$, df=3 p=.001*
	26-30Yrs	21	23.6%	23	16.1%	44	19.0%	
	30-30Yrs	22	24.7%	22	15.4%	44	19.0%	
	>40Yrs	8	9.0%	2	1.4%	10	4.3%	
	Total	89	100.0%	143	100.0%	232	100.0%	
Gender	Female	67	76.1%	122	84.7%	189	81.5%	$\chi^2=2.667$ df=1 p=.102
	Male	21	23.9%	22	15.3%	43	18.5%	
	Total	88	100.0%	144	100.0%	232	100.0%	
Used Zoom classroom	No	36	40.4%	58	41.1%	94	40.9%	$\chi^2=.011$ df=1 p=.918
	Yes	53	59.6%	83	58.9%	136	59.1%	
	Total	89	100.0%	141	100.0%	230	100.0%	
Used Google Classroom	No	37	41.6%	49	34.8%	86	37.4%	$\chi^2=1.084$ df=1 p=.298
	Yes	52	58.4%	92	65.2%	144	62.6%	
	Total	89	100.0%	141	100.0%	230	100.0%	
When the last online class was attended	<6Months	71	79.8%	91	63.6%	162	69.8%	$\chi^2=8.561$ df=2 p=.014*
	6M-1yr	11	12.4%	41	28.7%	52	22.4%	
	>1Yr	7	7.9%	11	7.7%	18	7.8%	
	Total	89	100.0%	143	100.0%	232	100.0%	

4.5 Student characteristics

The ability of students to use relevant technology for online learning, as well as their access to that technology, was evaluated. Figure 4.2 depicts the students' technological proficiency. In that order, 161(70.6 %) were proficient in internet browsing, 160 (68.4%) in computer use and 155(66.5%) could search and download files online. The learners were least proficient (138(59.7%) in using navigation features during online classes.

Figure 4.2

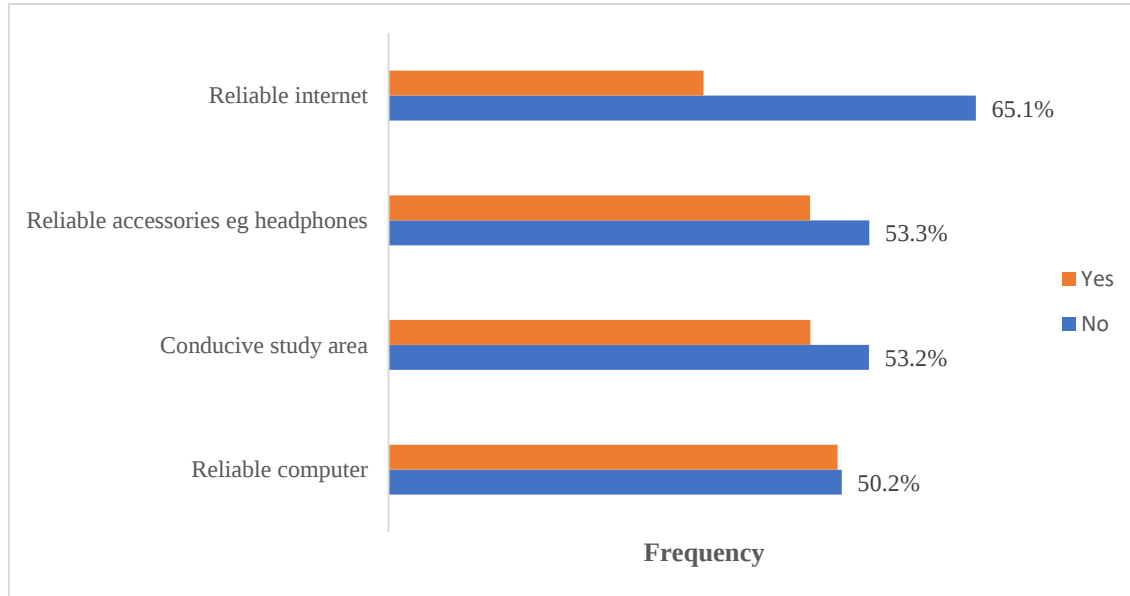
Students' ability to use eLearning technology



Regarding easy access to resources that support online learning, more than half of the students (See Figure 4.3) had no reliable computers, study areas, accessories, or internet supply. The most difficult challenge was internet access, with only 81(34.9%) having reliable internet access.

Figure 4.3

Students' access to resources that supports eLearning



4.6 Student characteristics vs satisfaction level

Students' proficiency in online learning technology and access to eLearning resources were cross-tabulated with satisfaction levels to assess their associations. As shown in Table 4.3, significantly higher frequencies of satisfaction were reported among students who easily navigated the online classroom features ($p=0.026$), were computer proficient ($p=0.003$), were Internet surfy ($p=.002$) and were able to search online browsers and download files ($p=0.003$) easily. With regards to access to resources, significantly higher levels of satisfaction were noted among learners with reliable computer access ($p<0.001$), reliable internet access ($p<0.001$), and a conducive study area ($p<0.001$).

Table 4.3***Student characteristics vs satisfaction level***

		Satisfaction Level						Significant at p≤0.05
		High		Low		Total		
Characteristics		n	%	n	%	n	%	
Online navigation easy	No	27	31.0%	66	45.8%	93	40.3%	χ^2 =4.938 df=1 p=.026*
	Yes	60	69.0%	78	54.2%	138	59.7%	
	Total	87	100.0%	144	100.0%	231	100.0%	
Computer proficiency	No	18	20.2%	56	38.6%	74	31.6%	χ^2 =8.631 df=1 P=.003*
	Yes	71	79.8%	89	61.4%	160	68.4%	
	Total	89	100.0%	145	100.0%	234	100.0%	
Internet Surfing proficient	No	15	17.4%	52	36.6%	67	29.4%	χ^2 =9.493 df=1 p=.002*
	Yes	71	82.6%	90	63.4%	161	70.6%	
	Total	86	100.0%	142	100.0%	228	100.0%	
Online searching proficient	No	19	21.6%	59	40.7%	78	33.5%	χ^2 =8.970 df=1 p=.003*
	Yes	69	78.4%	86	59.3%	155	66.5%	
	Total	88	100.0%	145	100.0%	233	100.0%	
Reliable computer	No	24	28.2%	91	63.2%	115	50.2%	χ^2 =26.130 df=p=1 p<.001*
	Yes	61	71.8%	53	36.8%	114	49.8%	
	Total	85	100.0%	144	100.0%	229	100.0%	
Reliable Internet	No	42	47.7%	109	75.7%	151	65.1%	χ^2 =18.800 df=1 p<.001*
	Yes	46	52.3%	35	24.3%	81	34.9%	
	Total	88	100.0%	144	100.0%	232	100.0%	
Conducive study area	No	93	64.6%	30	34.5%	123	53.2%	χ^2 =19.739 df=1 p<.001
	Yes	51	35.4%	57	65.5%	108	46.8%	
	Total	144	100.0%	87	100.0%	231	100.0%	
Reliable accessories, e.g., headphones	No	40	46.5%	82	57.3%	122	53.3%	χ^2 =2.531 df=1 P=.112
	Yes	46	53.5%	61	42.7%	107	46.7%	
	Total	86	100.0%	143	100.0%	229	100.0%	

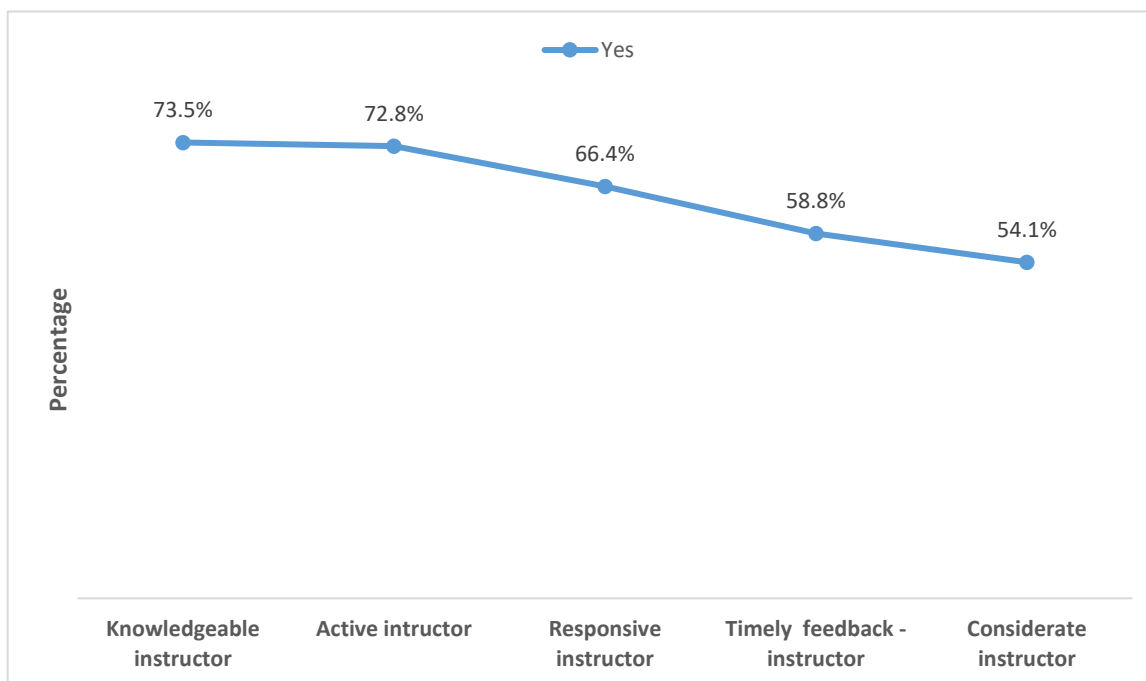
4.7 Instructor characteristics

As shown in figure 4.4, the instructors scored highly on being knowledgeable 166(73.5%), active facilitators of learning 169(72.8%) and responsive to students' concerns

154(66.4%). However, the lowest scores were given to ‘being concerned about student’s learning in the course’ 124(54.1%) and ‘giving timely and helpful feedback’ (137(58.8%).

Figure 4.4

Students’ description of instructors on eLearning matters



4.8 Instructor characteristics vs satisfaction

On cross-tabulation (See Table 4.4), learners who felt their lecturers were knowledgeable ($p=0.001$), active facilitators ($p=0.001$), responsive to students’ needs ($p=0.002$), provided timely and constructive feedback on assessments, e.g., exams and assignments ($p=0.011$), and ‘concerned about students’ learning in the course’ ($p=0.001$) reported higher levels of satisfaction.

Table 4.4***Instructor characteristics vs satisfaction***

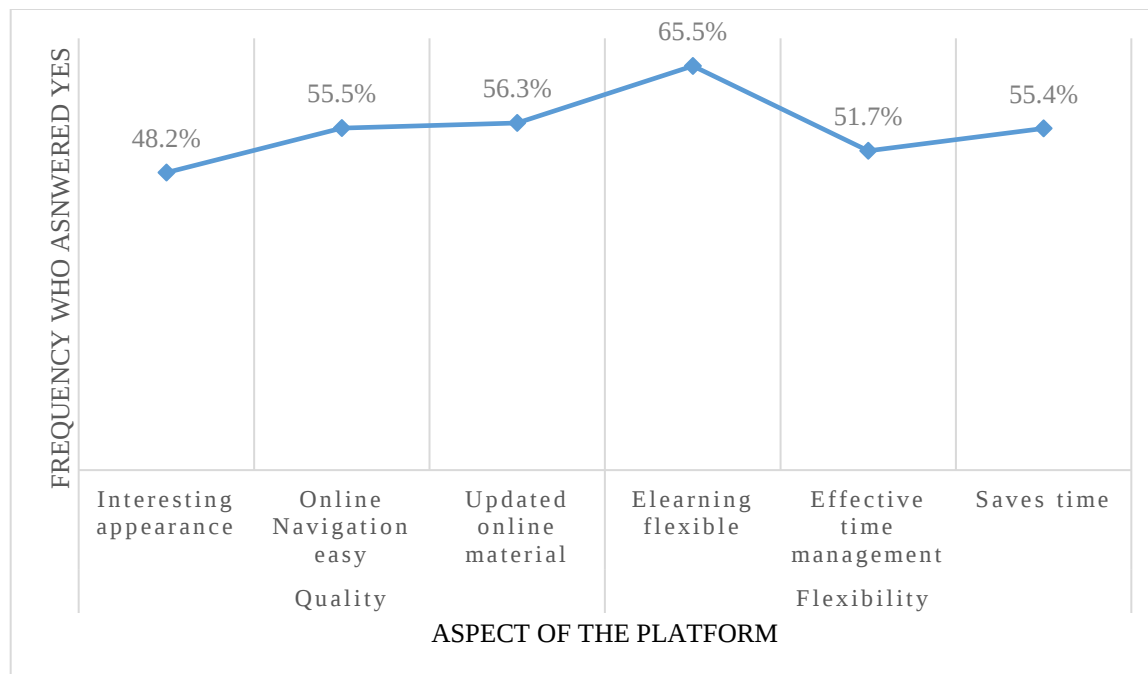
		Satisfaction Level						Significant at p≤0.05
		High		Low		Total		
Description		n	%	n	%	n	%	
Knowledgeable instructor	No	8	9.5%	52	36.6%	60	26.5%	$\chi^2=19.871$ df=1 p<0.001
	Yes	76	90.5%	90	63.4%	166	73.5%	
	Total	84	100.0%	142	100.0%	226	100.0%	
Active instructor	No	12	13.8%	51	35.2%	63	27.2%	$\chi^2=12.564$ df=1 p<0.001
	Yes	75	86.2%	94	64.8%	169	72.8%	
	Total	87	100.0%	145	100.0%	232	100.0%	
Responsive instructor	No	19	21.6%	59	41.0%	78	33.6%	$\chi^2=9.194$ df=1 p=0.002
	Yes	69	78.4%	85	59.0%	154	66.4%	
	Total	88	100.0%	144	100.0%	232	100.0%	
Timely feedback - instructor	No	27	30.7%	69	47.6%	96	41.2%	$\chi^2=6.460$ df=1 p=0.011
	Yes	61	69.3%	76	52.4%	137	58.8%	
	Total	88	100.0%	145	100.0%	233	100.0%	
Considerate instructor	No	20	23.8%	85	58.6%	105	45.9%	$\chi^2=25.960$ df=1 p<0.001
	Yes	64	76.2%	60	41.4%	124	54.1%	
	Total	84	100.0%	145	100.0%	229	100.0%	

4.9 Platform characteristics**4.9.1 Platform quality and flexibility**

The learners' perceptions of the eLearning platform's quality and flexibility are displayed in Figure 4.5. On quality, the platforms scored least on appearance 109(48.2%) and ease of navigation through the platform 127(55.5%). The most desirable attribute of online learning was flexibility allowing balancing between learning and other activities 152(65.5%), followed by 'online learning saves time compared to physical learning' 128(55.4%).

Figure 4.5

Perceptions relating to quality and flexibility of eLearning platforms



4.9.2 Platform Vs students' satisfaction

Table 4.5 depicts the relationship between eLearning platform attributes and satisfaction levels. All attributes had a significant relationship with satisfaction levels ($p < 0.05$). Students who thought eLearning materials were up to date ($P < 0.001$), found eLearning mode flexible ($P < 0.001$), were efficient in time management when on eLearning mode ($P < 0.001$), and felt E-learning saves them time compared to physical classrooms ($P < 0.001$) reported significantly higher levels of satisfaction with eLearning.

Table 4.5***Platform (Quality and flexibility) vs satisfaction***

		Satisfaction Level						Significant at p≤0.05
		Low		High		Low		
Description		n	%	n	%	n	%	
Interesting appearance	No	95	67.4%	22	25.9%	117	51.8%	$\chi^2=36.567$ df=1 P<0.001*
	Yes	46	32.6%	63	74.1%	109	48.2%	
	Total	141	100.0%	85	100.0%	226	100.0%	
Online Navigation easy	No	71	50.0%	31	35.6%	102	44.5%	$\chi^2=4.508$ df=1 P=.034*
	Yes	71	50.0%	56	64.4%	127	55.5%	
	Total	142	100.0%	87	100.0%	229	100.0%	
Updated online material	No	81	56.3%	20	23.0%	101	43.7%	$\chi^2=24.384$ df=1 P<0.001*
	Yes	63	43.8%	67	77.0%	130	56.3%	
	Total	144	100.0%	87	100.0%	231	100.0%	
eLearning flexible	No	67	46.2%	13	14.9%	80	34.5%	$\chi^2=23.526$ df=1 P<0.001*
	Yes	78	53.8%	74	85.1%	152	65.5%	
	Total	145	100.0%	87	100.0%	232	100.0%	
Effective time management	No	91	63.2%	20	23.3%	111	48.3%	$\chi^2=34.396$ df=1 P<0.001*
	Yes	53	36.8%	66	76.7%	119	51.7%	
	Total	144	100.0%	86	100.0%	230	100.0%	
Saves time	No	82	56.6%	21	24.4%	103	44.6%	$\chi^2=22.560$ df=1 P<0.001*
	Yes	63	43.4%	65	75.6%	128	55.4%	
	Total	145	100.0%	86	100.0%	231	100.0%	

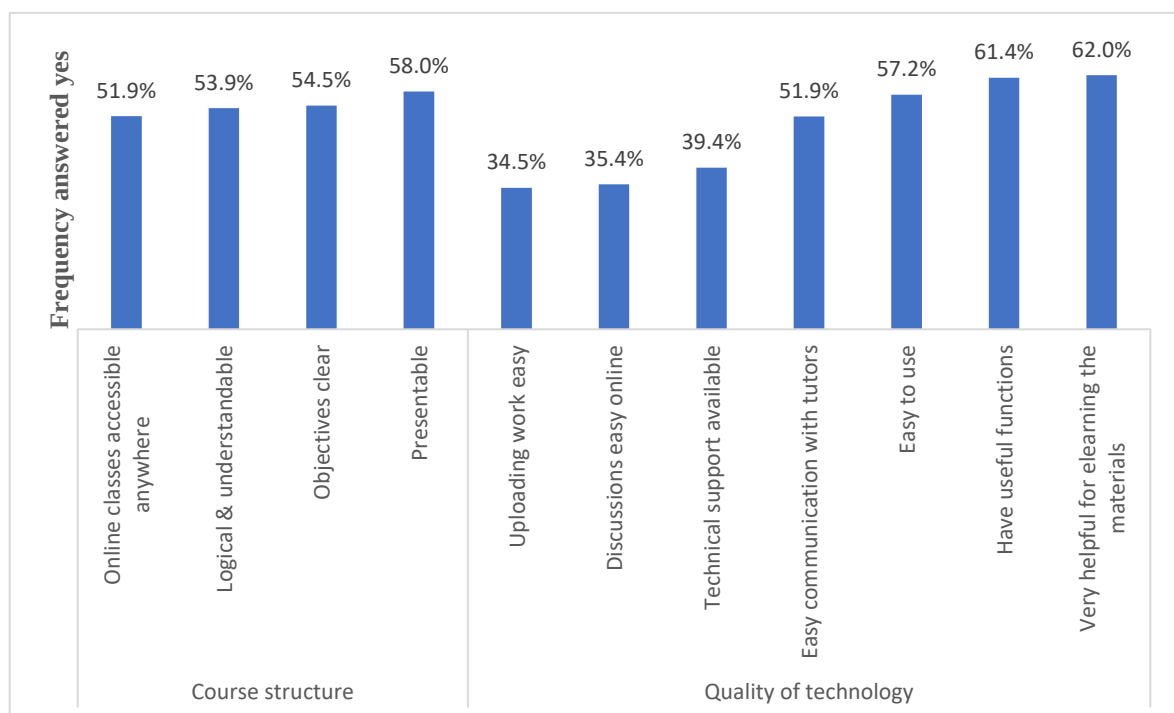
4.9.3 Platform deployment of technology and organization of course structure

The perceived quality of the deployed technology and the organization of the course structure are illustrated in Figure 4.6. On course structure, the content organization looked presentable to 134(58%) the respondents, objectives were clear to 126(54.5%) of them, the eLearning material was logical and understandable to 124(53.9%) of the respondents, and lastly, 120(51.9%) were able to access online classes anywhere.

As regards the quality of the deployed technology, only 79(34.5%) could easily upload their work onto the platform, 81(35.4%) could easily hold online discussions on the platform, and 89(39.4%) of them could easily access the necessary technical support. On a positive note, 137(62%) found the technology helpful in enhancing learning, 135(61.4%) felt the platform had useful functions, and 127(51.9%) claimed the technology facilitated communication with tutors and other learners.

Figure 4.6

Perceptions relating to the Course structure and deployed technology



4.9.4 Students' satisfaction and Platform deployment of technology and organization of course structure

All the variables under course structure and quality of deployed technology were significantly associated with students' satisfaction with eLearning ($p < 0.001$). Significantly high levels of satisfaction were reported in the learners who thought that the eLearning courses were presentable ($p < 0.001$), had clear objectives ($p < 0.001$), the content was organised logically and understandably ($p < 0.001$), the online learning was accessible anywhere ($p < 0.001$), holding discussions online was easy ($p < 0.001$), and that uploading work online, e.g., assignments easy ($p < 0.001$). Similarly, high satisfaction levels were noted among learners who found the eLearning technology easy to use ($p < 0.001$), having useful functions ($p < 0.001$), very helpful in promoting learning ($p < 0.001$), thought it enhanced communication among faculty and other learners ($p < 0.001$), as well as those who received technical support during eLearning sessions ($p < 0.001$).

Table 4.6

Platform (organization of course structure and deployed technology) Vs. satisfaction levels

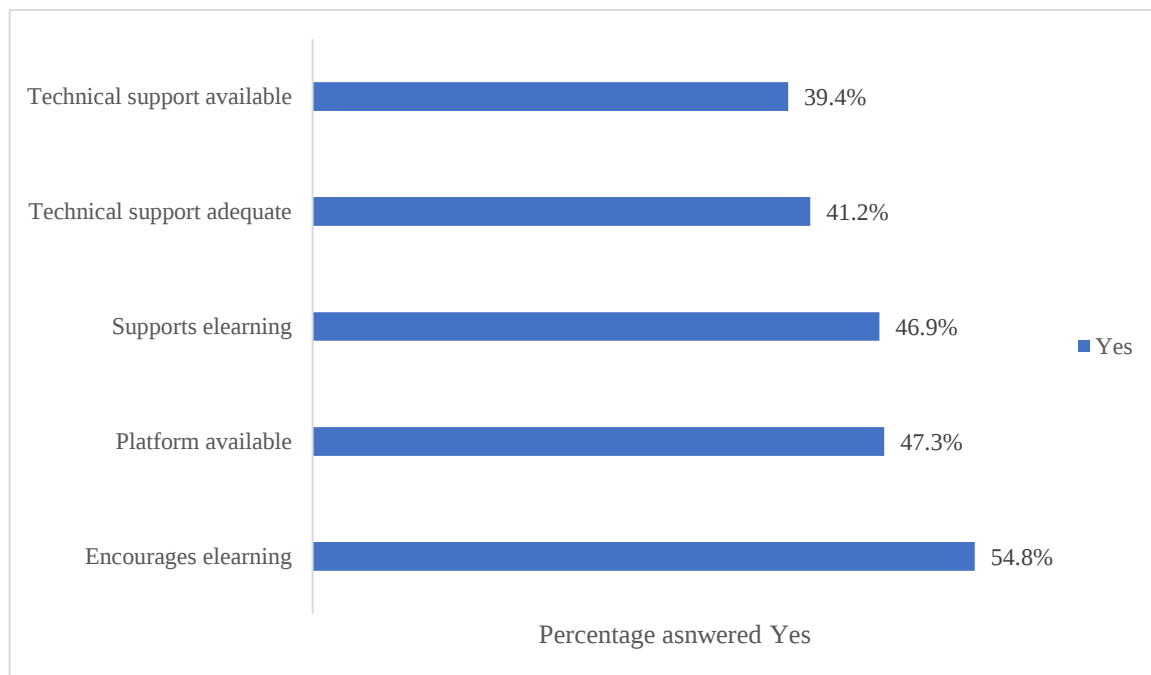
times		Satisfaction Level						Significant at p≤0.05
		Low		High		Low		
		n	%	n	%	n	%	
Presentable	No	75	52.1%	22	25.3%	97	42.0%	15.987
	Yes	69	47.9%	65	74.7%	134	58.0%	df=1
	Total	144	100.0%	87	100.0%	231	100.0%	p<.001
Objectives clear	No	84	58.3%	21	24.1%	105	45.5%	25.578
	Yes	60	41.7%	66	75.9%	126	54.5%	df=1
	Total	144	100.0%	87	100.0%	231	100.0%	p<.001
Logical & understandable	No	86	59.3%	20	23.5%	106	46.1%	27.612
	Yes	59	40.7%	65	76.5%	124	53.9%	df=1
	Total	145	100.0%	85	100.0%	230	100.0%	p<.001
Online classes accessible anywhere	No	88	60.7%	23	26.7%	111	48.1%	24.919
	Yes	57	39.3%	63	73.3%	120	51.9%	df=1
	Total	145	100.0%	86	100.0%	231	100.0%	p<.001
Discussions easy online	No	114	78.6%	34	40.5%	148	64.6%	33.853
	Yes	31	21.4%	50	59.5%	81	35.4%	df=1
	Total	145	100.0%	84	100.0%	229	100.0%	p<.001
Uploading work easy	No	117	80.7%	33	39.3%	150	65.5%	40.350
	Yes	28	19.3%	51	60.7%	79	34.5%	df=1
	Total	145	100.0%	84	100.0%	229	100.0%	p<.001
Easy to use	No	83	59.3%	12	14.6%	95	42.8%	42.115
	Yes	57	40.7%	70	85.4%	127	57.2%	df=1
	Total	140	100.0%	82	100.0%	222	100.0%	p<.001
Have useful functions	No	75	53.6%	10	12.5%	85	38.6%	36.222
	Yes	65	46.4%	70	87.5%	135	61.4%	df=1
	Total	140	100.0%	80	100.0%	220	100.0%	p<.001*
Very helpful for eLearning the materials	No	74	52.5%	10	12.5%	84	38.0%	34.629
	Yes	67	47.5%	70	87.5%	137	62.0%	df=1
	Total	141	100.0%	80	100.0%	221	100.0%	p<.001*
Easy communication with tutors	No	83	60.1%	21	26.9%	104	48.1%	22.030
	Yes	55	39.9%	57	73.1%	112	51.9%	df=1
	Total	138	100.0%	78	100.0%	216	100.0%	p<.001
Technical support available	No	104	72.2%	33	40.2%	137	60.6%	22.381
	Yes	40	27.8%	49	59.8%	89	39.4%	df=1
	Total	144	100.0%	82	100.0%	226	100.0%	p<.001

4.10 Institutional support

Figure 4.7 shows the perceived extent of institutional support towards the success of eLearning. Whereas the college did very well in encouraging students to adopt eLearning 125(54.8%), it performed below average on other related issues. For example, only 94(41.2%) felt the technical support provided was adequate, 106(46.9%) said the institution has succeeded in supporting eLearning, and 107(47.3%) felt the college had availed an eLearning platform to all learners.

Figure 4.7

Perceptions of institutional support towards eLearning



4.11 Institutional support vs satisfaction levels

On cross-tabulation, the institutional support factors were significantly associated with the level of satisfaction with eLearning among the students surveyed ($p < 0.05$). Significantly high levels of satisfaction were reported among the learners who felt that the technical support provided was available and adequate ($p < 0.001$), were able to access the eLearning platform ($p < 0.001$), who felt the college encouraged students to adopt eLearning ($p < 0.001$), and those who felt the institution had successfully supported eLearning ($p < 0.001$).

Table 4.7

Institutional support vs satisfaction levels

Description		Satisfaction Level						Significant at p≤0.05
		Low		High		Low		
		n	%	n	%	n	%	
Technical support adequate	No	104	71.7%	30	36.1%	134	58.8%	27.577 df=1 p<.001
	Yes	41	28.3%	53	63.9%	94	41.2%	
	Total	145	100.0%	83	100.0%	228	100.0%	
Platform available	No	91	63.2%	28	34.1%	119	52.7%	17.684 df=1 p<.001
	Yes	53	36.8%	54	65.9%	107	47.3%	
	Total	144	100.0%	82	100.0%	226	100.0%	
Encourages eLearning	No	81	55.9%	22	26.5%	103	45.2%	18.367 df=1 p<.001
	Yes	64	44.1%	61	73.5%	125	54.8%	
	Total	145	100.0%	83	100.0%	228	100.0%	
Supports eLearning	No	97	66.9%	24	28.9%	121	53.1%	30.573 df=1 p<.001
	Yes	48	33.1%	59	71.1%	107	46.9%	
	Total	145	100.0%	83	100.0%	228	100.0%	

4.12 Themes from Qualitative data

4.12.1 Convenience and Flexibility

Many participants expressed positive opinions about online learning, highlighting the convenience and flexibility it offered. They appreciated the ability to access learning materials and participate in classes at their own convenience, which allowed them to balance their studies with other commitments.

"Online learning has been a game-changer for me. I can study at my own pace and choose the most suitable time for me. It has made it easier to juggle my work and family responsibilities."

4.12.2 Lack of Support and Guidance

Some participants who expressed dissatisfaction with online learning cited a lack of support and guidance as a significant concern. They felt that there was inadequate assistance from instructors and limited opportunities for interaction and clarification of concepts.

"I struggled with understanding certain topics because there was no immediate support available. It was difficult to reach out to instructors for clarification, and it affected my learning experience."

4.12.3 Poor Access to Gadgets and Internet

Another common theme among participants who expressed negative views about online learning was the lack of access to necessary gadgets and reliable internet connections. They highlighted the challenges faced in obtaining the required devices and experiencing frequent connectivity issues.

"I wanted to participate in online classes, but I couldn't afford a laptop or a stable internet connection. It was frustrating to see my classmates engaging in discussions while I struggled to access the online platform."

4.12.4 Lack of Immediate Feedback

Participants who had reservations about online learning mentioned the absence of immediate feedback as a drawback. They emphasized the importance of timely feedback from instructors to gauge their progress and address any misconceptions.

"One of the downsides of online learning was the delay in receiving feedback. It's crucial to have prompt responses and corrections to improve our understanding. Waiting for feedback for days affected my motivation to learn."

These themes emerged from the focus group discussions, highlighting the varying perspectives and experiences of the participants regarding their satisfaction with online learning.

4.13 Discussion of Research Findings

This section compares and contrasts the study's findings with the existing literature. It examines how the results align with previous research and identifies any similarities, differences, or new insights discovered through the study. By analyzing the existing literature, the chapter provides a broader context for interpreting the study's findings and contributes to the overall understanding of the research topic.

4.13.1 Socio-demographic data of the respondents

The majority of the students in the current study were preservice learners (177, 75.6%) in their first year of training (116, 50%). The gender distribution was predominantly female (189, 81.5%). Online learning was prevalent, with the respondents having attended online classes as recently as six months ago, with Zoom and Google Classrooms being the two primary platforms used. Google Classroom slightly led with a usage rate of 144 (62.6%). Dhawan (2020) noted that age and marital status may play a role in students' satisfaction and retention in online classes. While the current study did not explicitly address age and marital status, it does provide insight into the program of study ($P=0.009$), learner's age ($P=0.01$), and prior experience with online classes (0.014), which were significantly related to satisfaction levels.

4.13.2 Student characteristics

Regarding online learning, the learners in the current study were found to be least proficient (138, 59.7%) in using navigation features during online classes. Limited internet

access was also identified as a challenge, with only 81 (34.9%) having reliable access. The study found significantly higher levels of satisfaction ($P < 0.05$) among students who were proficient in navigating the online classroom features, computer proficient, internet-savvy, and able to conduct effective online searches. Similarly, satisfaction levels were higher among learners with reliable computer and internet access and a conducive study area. The findings align with the study by Muuro et al. (2018) and the E-readiness assessment in Kenya, which identified limited access to computers and internet facilities as major hindrances to online learning. Additionally, Hadullo et al. (2018) highlighted the importance of learner characteristics, such as computer proficiency and internet access, as significant factors in quality eLearning.

4.13.3 Instructor characteristics

The current study revealed that learners who perceived their instructors as knowledgeable, active facilitators, responsive to students' needs, and providing timely and constructive feedback reported higher levels of satisfaction. The findings align with the observation by Dhawan (2020), which noted that most students are dissatisfied with the lack of personalized attention from online instructors. The current study expands on this by emphasizing the importance of instructor characteristics in fostering satisfaction.

4.13.4 Platform Characteristics

The study found that students who perceived e-learning materials as up-to-date, found e-learning mode flexible, efficiently managed time during e-learning, and felt that e-learning saved them time compared to physical classrooms reported significantly higher levels of

satisfaction. However, only a portion of the participants (34.5% to 39.4%) reported ease in uploading work, holding online discussions, and accessing technical support. The findings align with the notion from Dhawan (2020) that students find online learning boring and less interactive. Additionally, the study highlights the importance of e-learning materials, platform usability, and technical support in enhancing satisfaction, which corresponds with the findings of previous research.

4.13.5 Institutional support

The study found that a significant proportion of the learners (41.2% to 47.3%) perceived technical support, institutional support, and availability of e-learning platforms positively. Higher levels of satisfaction were reported among learners who felt that technical support was available and adequate, had access to the e-learning platform, perceived institutional support, and felt that the college encouraged e-learning adoption. The findings align with the importance of institutional support and technical assistance highlighted by Dhawan (2020) and the role of e-learning infrastructure and support systems emphasized by Muuro et al. (2018).

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This Chapter presents the conclusions as per the study objectives. It then draws the relevant recommendations.

5.2 Conclusions

5.2.1 Socio-demographic Data of the Respondents

There has been an increase in online content delivery in recent months, with Zoom and Google Classrooms being the dominant platforms. Satisfaction was significantly higher among upgrading students($P=0.09$), relatively older students($P=0.01$), and learners who had previously attended online classes ($P=0.014$) among their complementary counterparts.

5.2.2 Student characteristics

The findings reveal that there was a sizeable population of students who could not access a computer (50.2%) or reliable Internet (65.1%) or a conducive study area (53.2%). On cross-tabulation, various student factors were significantly associated with high satisfaction with e-learning, including navigating online platforms ($p = 0.026$), browsing the Internet ($p = 0.003$), accessing and using a computer ($p = 0.003$), having reliable

Internet access ($p = 0.01$), and being in a conducive environment for holding online classes ($p = 0.01$)

5.2.3 Instructor characteristics

The instructor factors associated with high satisfaction with online learning are teachers who are knowledgeable ($p = 0.001$) and active facilitators on online platforms ($p = 0.001$). Additionally, lecturers who show concern for students' needs ($p = 0.002$) and those who provide immediate and prompt feedback ($p = 0.001$) are also associated with high satisfaction in online learning.

5.2.4 Platform Characteristics

In this study, a small percentage of students (34.5%) were able to upload work onto the platform, hold online discussions easily (35.4%), or receive the necessary technical support (39.4%). The findings of this study indicate that platform characteristics significantly influence satisfaction with online learning. It is worth noting that students expressed significant satisfaction ($p < 0.05$) with online platforms that provided updated materials, allowed for flexibility in learning, granted access to content and learning sessions anytime and anywhere, facilitated efficient time management, and saved time compared to physical classrooms. Furthermore, significantly higher satisfaction levels ($p < 0.05$) were observed among students who could easily upload their content online, actively engage in online discussions, had clear learning objectives, encountered logically organized content, experienced seamless communication among students and faculty, and had access to adequate technical support.

5.2.5 Institutional support

On institutional support for e-learning, most students felt it was unavailable or inadequate, significantly lowering their satisfaction levels ($p < 0.05\%$). In particular, most learners (58.8%) felt that there was inadequate technical support, and the college did not support (53.1%) or avail e-learning platform to all learners (53.7%).

5.3 Recommendations

This study recommends several actions to improve the online learning experience based on the findings:

- I. To enhance student access and support, the KMTC administration should deliberately
 - Ensure access to computers and reliable internet for all students.
 - Provide resources and guidance to create conducive study environments.
 - Offer training and support for students to effectively navigate online platforms, browse the internet, and use computers.
- II. To strengthen instructor effectiveness, the training KMTC administration should:
 - Provide professional development opportunities for instructors to enhance their knowledge and skills in online teaching methodologies.
 - Encourage active facilitation on online platforms and promote student engagement.

- Foster a culture of care and support by emphasizing instructors' concern for students' needs and providing prompt feedback.

III. To Improve platform functionality, the college should

- Enhance platforms to enable easy uploading of student work and seamless online discussions.
- Strengthen technical support services to promptly address students' platform-related issues.
- Regularly update platform materials to ensure they are up-to-date and relevant.

IV. On enhancing institutional support, the college administration should:

- Address gaps in technical support, ensuring timely and effective assistance for students.
- Promote equitable access to e-learning platforms for all students, regardless of their backgrounds or circumstances.
- Invest in resources and infrastructure to improve technical support services and address technical issues promptly.
- Establish clear policies and guidelines to support effective online learning practices across the institution.

5.4 Further studies

There is need for stakeholders to:

- I. Investigate the training and support needs of instructors in online teaching methodologies. Training institutions to orientate their students to computer usage and internet before they embark on the online learning
- II. Investigate the effectiveness of interventions aimed at improving technical skills and creating supportive learning environments.

REFERENCES

- Abuatiq, A., Fike, G., Davis, C., Boren, D., & Menke, R. (2017). E-learning in Nursing: Literature Review. *International Journal of Nursing Education*, 9(2), 81.
<https://doi.org/10.5958/0974-9357.2017.00041.1>
- Allen, I. E., & Seaman, J. (2017). *Online Nation: Five Years of Growth in Online Learning*. Sloan Consortium. <https://eric.ed.gov/?id=ED529699>
- Asunka, S. (2018). Online Learning in Higher Education in Sub-Saharan Africa: Ghanaian University students' experiences and perceptions. *The International Review of Research in Open and Distributed Learning*, 9(3), 1-23.
<https://doi.org/10.19173/irrodl.v9i3.586>
- Barbera, E. (2017). Quality in virtual education environments. *British Journal of Educational Technology*, 35(1), 13–20. <https://doi.org/10.1111/j.1467-8535.2004.00364.x>
- Barclay, C., Donalds, C., & Osei-Bryson, K.-M. (2018). Investigating critical success factors in online learning environments in higher education systems in the Caribbean. *Information Technology for Development*, 24(3), 582–611.
<https://doi.org/10.1080/02681102.2018.1476831>
- Baruch, Y. (1999). Response Rate in Academic Studies-A Comparative Analysis. *Human Relations*, 52(4), 421–438. <https://doi.org/10.1177/001872679905200401>
- Basuony, M. A. K., EmadEldeen, R., Farghaly, M., El-Bassiouny, N., & Mohamed, E. K. A. (2020). The factors affecting student satisfaction with online education during the COVID-19 pandemic: An empirical study of an emerging Muslim

- country. *Journal of Islamic Marketing*, ahead-of-print.
<https://doi.org/10.1108/JIMA-09-2020-0301>
- Bolliger, D. U., & Wasilik, O. (2017). Factors influencing faculty satisfaction with online teaching and learning in higher education. *Distance Education*, 30(1), 103–116. <https://doi.org/10.1080/01587910902845949>
- Bramer, C. (2020). Preregistration adult nursing students’ experiences of online learning: A qualitative study. *British Journal of Nursing*, 29(12), 677–683.
<https://doi.org/10.12968/bjon.2020.29.12.677>
- Cakir, O. (2016). The Factors that Affect Online Learners’ Satisfaction. *Anthropologist*, 17(3), 895–902. <https://doi.org/10.1080/09720073.2014.11891504>
- Çallı, L., Balçıkanlı, C., Çallı, F., Cebeci, H., & Seymen, O. (2017). Identifying factors that contribute to the satisfaction of students in e-learning. *Turkish Online Journal of Distance Education*, 14(1), 85–101.
<https://www.researchgate.net/publication/285944055>
- Center for Online Education. (2020, December 18). *Online College Students by the Numbers*. OnlineColleges.Net. <https://www.onlinecolleges.net/for-students/online-college-students-by-the-numbers/>
- Deslonde, V., & Becerra, M. (2018). The Technology Acceptance Model (TAM): Exploring School Counselors’ Acceptance and Use of Naviance. *The Professional Counselor*, 8(4), 369–382. <https://doi.org/10.15241/vd.8.4.369>
- Dhawan, S. (2020). Online Learning: A Panacea in the Time of COVID-19 Crisis. *Journal of Educational Technology Systems*, 49(1), 5–22.
<https://doi.org/10.1177/0047239520934018>

- Ernest, P., Catasús, M. G., Hampel, R., Heiser, S., Hopkins, J., Murphy, L., & Stickler, U. (2017). Online teacher development: Collaborating in a virtual learning environment. *Computer Assisted Language Learning*, 26(4), 311–333.
<https://doi.org/10.1080/09588221.2012.667814>
- Hadullo, K., Oboko, R., & Omwenga, E. (2018). Status of e-learning quality in Kenya: Case of Jomo Kenyatta University of agriculture and technology postgraduate students. *International Review of Research in Open and Distributed Learning*, 19(1), 138-159. <http://dx.doi.org/10.19173/irrodl.v19i1.3322>
- Harsasi, M., & Sutawijaya, A. (2018). Determinants of Student Satisfaction in Online Tutorial: A Study of a Distance Education Institution. *Turkish Online Journal of Distance Education*, 19(1), 89–99. <http://dx.doi.org/10.17718/tojde.382732>
- Kenya Medical Training College [KMTC]. (2019a). *Kenya Medical Training College | Training for Better Health*. <https://kmtc.ac.ke/>
- Kenya Medical Training College [KMTC]. (2019b). *KMTC-E-Learning-Policy*. <https://kmtc.ac.ke/wp-content/uploads/2019/06/14.-KMTC-E-Learning-Policy.pdf>
- Kim, J., & Lee, W. (2017). Assistance and possibilities: Analysis of learning-related factors affecting the online learning satisfaction of underprivileged students. *Computers & Education*, 57(4), 2395–2405.
<https://doi.org/10.1016/j.compedu.2017.05.021>
- Kyalo, I. W., & Hopkins, S. (2013). Exploring the acceptability of online learning for continuous professional development at Kenya Medical Training Colleges. *The*

Electronic Journal of e-Learning, 11(2), 82-960.

<https://files.eric.ed.gov/fulltext/EJ1012874.pdf>

- Ma, Q., & Liu, L. (2016). The technology acceptance model: A meta-analysis of empirical findings. *Journal of Organizational and End User Computing (JOEUC)*, 16(1), 59–72. <https://doi.org/10.4018/joeuc.2004010104>
- Makokha, G. L., & Mutisya, D. N. (2016). Status of e-learning in public universities in Kenya. *International Review of Research in Open and Distributed Learning*, 17(3), 341–359. <http://dx.doi.org/10.19173/irrodl.v17i3.2235>
- Matiang’i, M., Kibwage, I., Ngatia, P., Omoni, G., Kiarie, J., Bosire, K., Inyama, H., & Muiruri, F. (2018). Improving access to higher education for frontline health professionals in Kenya through ‘blended e-learning’. *African Journal of Midwifery and Women’s Health*, 12(2), 77–85. <https://doi.org/10.12968/ajmw.2018.12.2.77>
- McIntyre, M., McDonald, C., & Racine, L. (2017). Discourse / Discours - A Critical Analysis of Online Nursing Education: Balancing Optimistic and Cautionary Perspectives. *Canadian Journal of Nursing Research Archive*, 45(1), 36–53. <http://dx.doi.org/10.1177/084456211304500105>
- Moloney, J. F., & Oakley, B. (2016). Scaling online education: Increasing access to higher education. *Journal of Asynchronous Learning Networks*, 14(1), 55–70. <http://dx.doi.org/10.24059/olj.v14i1.1639>
- Mugenda, O. M., & Mugenda, A. G. (2019). *Research methods: Quantitative, Qualitative & Mixed Approaches*. African Centre for Technology Studies.

- Muuro, M. E., Wagacha, W. P., Kihoro, J., & Oboko, R. (2018). Students' Perceived Challenges in an Online Collaborative Learning Environment: A Case of Higher Learning Institutions in Nairobi, Kenya. *International Review of Research in Open and Distributed Learning*, 15(6), 132–161.
<https://doi.org/10.19173/irrodl.v15i6.1768>
- Pham, L., Limbu, Y. B., Bui, T. K., Nguyen, H. T., & Pham, H. T. (2019). Does e-learning service quality influence e-learning student satisfaction and loyalty? Evidence from Vietnam. *International Journal of Educational Technology in Higher Education*, 16(1), 7-32. <https://doi.org/10.1186/s41239-019-0136-3>
- Palvia, S., Aeron, P., Gupta, P., Mahapatra, D., Parida, R., Rosner, R., & Sindhi, S. (2018). Online Education: Worldwide Status, Challenges, Trends, and Implications. *Journal of Global Information Technology Management*, 21(4), 233–241. <https://doi.org/10.1080/1097198X.2018.1542262>
- Racheva, V. (2018, May 9). *What is a Virtual Classroom? - Definition*. VEDAMO.
<https://www.vedamo.com/knowledge/what-is-virtual-classroom/>
- Richardson, J. C., Besser, E., Koehler, A., Lim, J., & Strait, M. (2016). Instructors' Perceptions of Instructor Presence in Online Learning Environments. *The International Review of Research in Open and Distributed Learning*, 17(4), 82-104. <https://doi.org/10.19173/irrodl.v17i4.2330>
- Sharafuddin, H., & Allani, C. (2017). Measuring Students' Satisfaction in Blended Learning at the Arab Open University – Kuwait. In V. Snasel, J. Platos, & E. El-Qawasmeh (Eds.), *Digital Information Processing and Communications* (Vol.

188, pp. 333–341). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-22389-1_30

United Nations Sustainable Development Group. (2020). *UNSDG | Policy Brief: Education during COVID-19 and beyond.*

https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/08/sg_policy_brief_covid-19_and_education_august_2020.pdf

van Popta, E., Kral, M., Camp, G., Martens, R. L., & Simons, P. R.-J. (2017). Exploring the value of peer feedback in online learning for the provider. *Educational Research Review*, 20(1), 24–34. <https://doi.org/10.1016/j.edurev.2016.10.003>

Verma, A., Rajput, R., Verma, S., Balania, V. K., & Jangra, B. (2020). Impact of lockdown in COVID 19 on glycemic control in patients with type 1 Diabetes Mellitus. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, 14(5), 1213–1216. <https://doi.org/10.1016%2Fj.dsx.2020.07.016>

Wingo, N. P., Peters, G. B., Ivankova, N. V., & Gurley, D. K. (2016). Benefits and Challenges of Teaching Nursing Online: Exploring Perspectives of Different Stakeholders. *Journal of Nursing Education*, 55(8), 433–440. <https://doi.org/10.3928/01484834-20160715-03>

Wright, G., Cillers, L., Van Niekerk, E., & Seekoe, E. (2017, Jul 20-22). *The Next Stage of Development of eLearning at UFH in South Africa* [Paper presentation]. International Association for Development of the Information Society (IADIS) International Conference on E-Learning, Lisbon, Portugal. <http://files.eric.ed.gov/fulltext/ED579391.pdf>

APPENDICES

Appendix 1: Consent form

Kenya Methodist University

P.O. BOX 267-60200

Meru, Kenya

SUBJECT: INFORMED CONSENT

Dear Respondent,

My names are Maryline Chebii an MSc Nursing Education student from Kenya Methodist University. I am conducting a study titled: Assessment of Satisfaction with Online Learning Environment among Nursing Students in Kenya Medical Training College (KMTC) Nairobi. The findings will be utilized to strengthen the health systems in Kenya and other low-income countries in Africa. As a result, countries, communities and individuals will benefit from improved quality of health care services. This research proposal is critical as it from the study, the finding will show if the students were satisfied with the online learning that was offered to the nursing students. it will generate new knowledge in this area that will inform decision makers to make decisions that are research based.

Procedure to be followed

Participation in this study will require that I ask you some questions and also access your satisfaction level with the online learning I will record the information from you in a questionnaire.

You have the right to refuse participation in this study. You will not be penalized nor victimized for not joining the study and your decision will not be used against you nor affect you at your studies.

Please remember that participation in the study is voluntary. You may ask questions related to the study at any time. You may refuse to respond to any questions and you may stop an interview at any time. You may also stop being in the study at any time without any consequences to the services you are rendering.

Discomfort risks

During the time you will be answering the questions, some questions might be uncomfortable for you to answer. In case of such incidence, you are allowed to skip them. You have the right to refuse the interview or any questions asked during the interview.

Benefits

If you participate in this study, you will help us to know if the online learning that was offered was satisfying. Kenya and other Low-income countries in Africa. As a result, countries, communities and individuals will benefit from this study as it will try to analyze the finding response gotten from the participants and it will reveal of the student.

Rewards

There is no reward for anyone who choose to participate in the study.

Confidentiality

The interviews will be conducted in a conducive setting within the training institutions. Your name will not be recorded on the questionnaire and the questionnaires will be kept in a safer place at the University.

Contact Information

If you have any further questions or concerns about participating in the study, please contact the following supervisors;

Dr. Kasusu Mutinda- agnes.kasusu@kemu.ac.ke

Dr. Susan Njuguna – njugunarsm@gmail.com

Participants Statement

The above statement regarding my participation in the study is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is entirely voluntary. I understand that my records will be kept private and that I can leave the study at any time. I understand that I will not be victimized at my place of work whether I decide to leave the study or not and my decision will not affect the way I am treated at my work place.

Name of participant..... Date Signature

Investigator's statement

I, the under designed, have explained to the volunteer in the language s/he understands the procedures to be followed in the study and the risks and the benefits involved. Name of

Interviewer.....

Date.....

Signature.....

Appendix 2: Questionnaire

Section A: Questionnaire Instructions

This questionnaire is designed to gather information related to online learning. It has two sections: demographics and domains of online learning. You will not be required to provide personal identification details to protect your identity. Kindly give us your honest responses. The entire exercise will take 15 minutes of your time. In case of any discomfort by the participant, one is allowed to withdraw from the study in providing information.

SECTION B: Socio-Demographics

Kindly tick where applicable in the boxes provided.

1. Your current Programme study.

preservice ☐ In -service ☐

2. Your Year of study:

1st year ☐ 2nd year ☐ 3rd year ☐

3. Semester:

1st semester ☐ 2nd semester ☐ 3rd semester ☐

4. Age in years:

17-25 ☐ 6-30 ☐ 30-40 ☐ 40 and above ☐

5. Gender:

Male ☐ Female ☐

6. Tick online learning platforms you have been using. (Select all that apply).

zoom class ☐ google class ☐

7. How far back when you had the last online session

Less than 6 Months ☐ 6 months -1 year ☐ above 1 Year ☐

SECTION C: Domains of online learning

Please remember the most recent semester that you were engaged in online learning. Rate the following aspects of online learning by ticking the response that most captures your feeling. The responses range from 1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, and 5 = Strongly agree.

Domains	Aspect items	Rating
Student characteristics	Ability	
	7. I have difficulty using the features in an online tutorial	
	8. I am reasonably good at using the computer.	
	9. I am comfortable surfing the Internet.	
	10. I am comfortable conducting searches, setting bookmarks, and downloading files.	
	11. Learning through an online learning system enables me learn independently	
	Access	
	12. My computer runs reliably	
	13. I had a reasonably fast, reliable connection to the Internet during online sessions	
	14. I had headphones or speakers and a microphone to use if a class had a videoconference	
	15. My study area had minimal distractions	

Domains	Aspect items	Rating
Instructor characteristics	16. The instructor was very knowledgeable about the course.	
	17. The instructor was actively involved in facilitating this course.	
	18. The instructor stimulated students to intellectual effort beyond that required by face-to-face courses	
	19. The instructor was responsive to student concerns.	
	20. The instructor provided helpful, timely feedback on assignments, exams, or projects.	
	21. I felt the instructor cared about my learning in this course.	
Characteristics of online platform	Perceived Online tutorial quality	
	22. Online learning, as a whole, is of good quality	
	23. The appearance of the online platform is interesting	
	24. I have no difficulty using the features of the online platform	
	25. The material shown in the online tutorial is up to date and relevant	
	Online tutorial flexibility	
	26. Learning through online tutorials benefits me	
	27. Learning through online tutorials gave me the flexibility to divide my time between learning activities / other jobs	

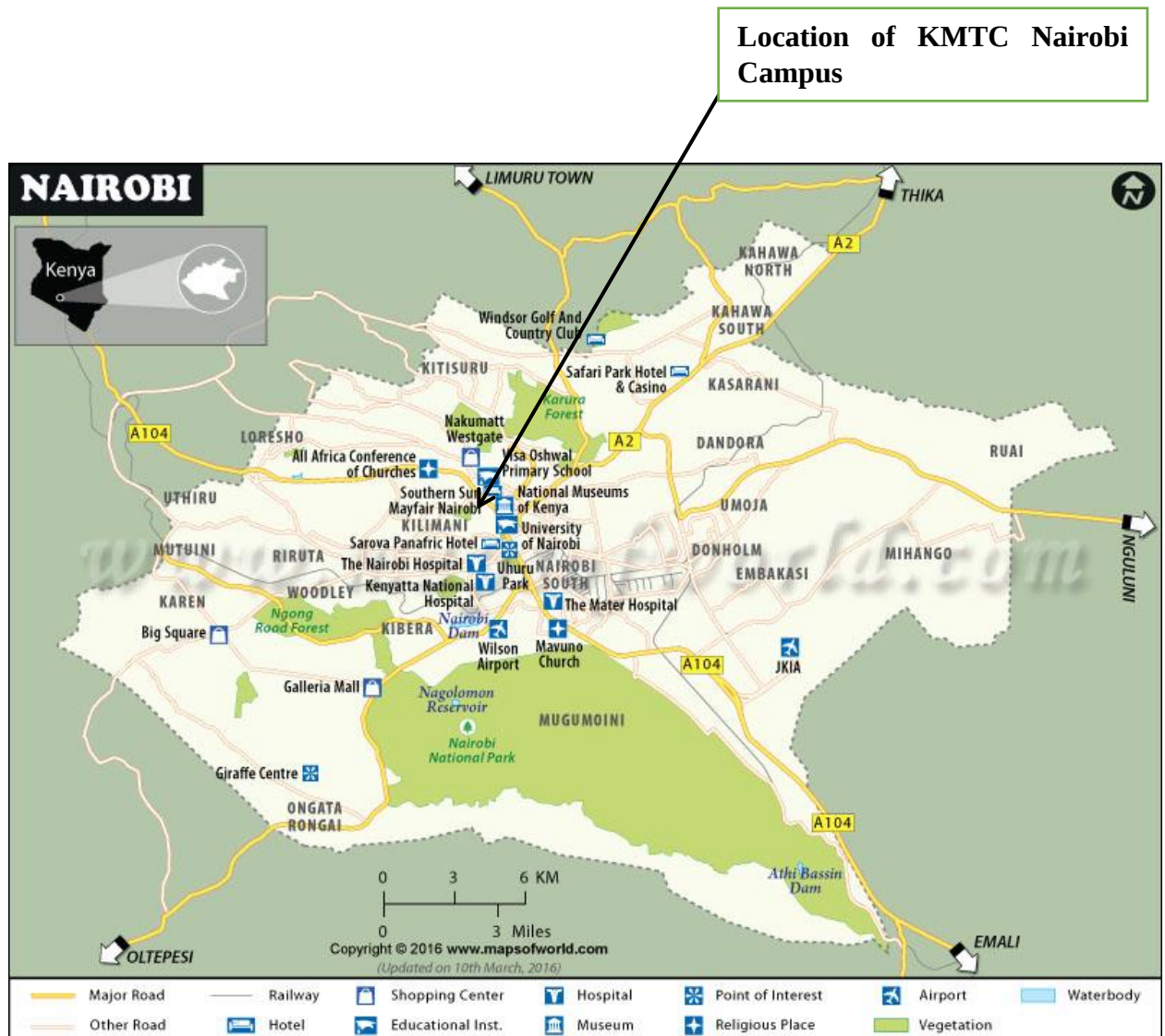
Domains	Aspect items	Rating
	28. I learn better through an online tutorial than through physical learning	
	29. Learning through online tutorials lets me manage my time more effectively	
	30. Learning through online tutorials makes me save time rather than having to attend class	
	Course structure	
	31. Course material is presented in a good structure	
	32. The learning objectives in the online classes are conveyed properly	
	33. The material in the online tutorial is arranged in a logical sequence and is understandable	
	34. The structure of the material in the online tutorial already covers all the material I need to learn in one subject	
	Technology Quality	
	35. I can access online learning anywhere	
	36. I do not experience any problems when learning online	
	37. I do not encounter any difficulty in responding to the discussion	
	38. I do not see any difficulty when uploading the task	

Domains	Aspect items	Rating
	39. I feel that technology for online learning is:	
	• Easy to use	
	• Have useful functions	
	• Very helpful for learning the materials	
	• Facilitate communication with tutors or other students	
	40. I received the technical support I needed when I had a problem.	
Institutional characteristics in supporting online learning	41. I am satisfied with the support the institution is offering for online learning	
	42. The institution has made the online learning platform easily assessable	
	43. The institution has made online learning successful	
	44. The institution has encouraged students to learn online	
	45. The institution has successfully supported online learning	

Appendix 3: FGD Guide

- a. . What aspects did you find enjoyable in online learning?
- b. -The instructor
 - the learning platform
 - the learning environment
- c. What can you comment about online learning as regards the following?
 - i. Teachers' role and preparedness
 - ii. Learners' preparedness
 - iii. Institutional support towards online
- d. What would you say was your online experience like?
 -
- e. . Did you experience any challenges during online classes?
- f. . What suggestions would you propose for future improvement of online learning?

Appendix 4: Map indicating location of KMTC Nairobi



Appendix 5: KMTC Approval

Telegrams: "MEDTRAIN" Nairobi
TELEPHONE: NAIROBI 2725191, 2725711/14
Fax: 2722907 Email: info@kmtc.ac.ke
Please address all correspondence to:
The Director
When replying please quote
KMTC/ADM/74/VOL.VI /237
Ref. No. _____



KENYA MEDICAL TRAINING COLLEGE
P.O. BOX 30195-00100
NAIROBI

Date: 16/11/2022

Maryline Chebii
P.O Box 36520-00200
NAIROBI

Dear Maryline,

PERMISSION TO COLLECT DATA AT KMTC THIKA AND NAIROBI CAMPUSES

Reference is made to your letter dated 4th February, 2022 requesting for authorization to carry out a study titled 'An Assessment of Satisfaction with Online Learning Environment Among Nursing Students in Kenya Medical Training College (KMTC) Nairobi Campus'.

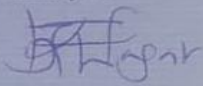
It is noted that the study protocols have received the necessary ethical clearance from the relevant institutions and the required research license by NACOSTI.

The KMTC Research and Ethics Review Committee has also reviewed the proposal and is satisfied that no ethical issues will be violated in the data collection process.

Permission is therefore granted for data collection; should any unanticipated issues arise, please contact the College Research Office.

Upon completion of the study, you are requested to submit one (1) hard and soft copy of the research report to the KMTC Chief Executive Officer's office.

Thank you.



Eglah J. Kiplagat
FOR: CHIEF EXECUTIVE OFFICER

Appendix 6: KeMU SSERC Approval



KENYA METHODIST UNIVERSITY

P. O. BOX 267 MERU - 60200, KENYA
TEL: 254-064-30301/31229/30367/31171

FAX: 254-64-30162
EMAIL: INFO@KEMU.AC.KE

July 12, 2022

KeMU/SERC/MSN/3/2022

MARYLINE CHEBII
MSN-3-0687-1/2020

Dear Maryline,

SUBJECT: AN ASSESSMENT OF SATISFACTION WITH ONLINE LEARNING ENVIRONMENT AMONG NURSING STUDENTS IN KENYA MEDICAL TRAINING COLLEGE

This is to inform you that Kenya Methodist University Scientific Ethics and Review Committee has reviewed and approved your research proposal. Your application approval number is KeMU/SERC/MSN/3/2022. The approval period is 12th July, 2022 – 12th July, 2023.

This approval is subject to compliance with the following requirements:-

- I. Only approved documents including (informed consents, study instruments, MTA) will be used.
- II. All changes including (amendments, deviations, and violations) are submitted for review and approval by Kenya Methodist University Scientific Ethics and Review committee.
- III. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to KeMU SERC within 72 hours of notification.

Appendix 7: NACOSTI Approval

 REPUBLIC OF KENYA Ref No: 583221	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION Date of Issue: 20/September/2022
RESEARCH LICENSE	
	
This is to Certify that Ms. MARYLINE JEPKEMBOI CHEBII of Kenya Methodist University, has been licensed to conduct research in Nairobi on the topic: AN ASSESSEMENT OF SATISFACTION WITH ONLINE LEARNING ENVIRONMENT AMONG NURSING STUDENTS IN KENYA MEDICAL TRAINING COLLEGE (KMTC) NAIROBI for the period ending : 20/September/2023.	
License No: NACOSTI/P/22/20128	
Applicant Identification Number 583221	
Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION	
Verification QR Code 	
NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.	