# THE MODERATING ROLE OF CHANGE APPROACHES ON THE RELATIONSHIP BETWEEN E-LEARNING STRATEGY AND LEARNER GOAL ACHIEVEMENTS IN THE UNIVERSITIES IN KENYA

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## DECLARATION

This thesis is my original work and has not been presented for a degree or any other award in any other University.

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

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## DEDICATION

This thesis is dedicated to my husband Royford Muriuki, my son Jaydon Prince and my daughter Peace Favour for their love, support and encouragement during the entire duration of writing this thesis. I also dedicate this thesis to all my friends and parents for their physical and spiritual support. God bless you and your families for your support.

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## ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| AAAA | American Association of Advertising Agencies |
| CD | Compact Disc |
| CD-ROM | Compact Disc Read-Only Memory |
| COL | Commonwealth of Learning |
| COVID | Corona Virus Disease |
| CUE | Commission for University Education |
| DOI | Digital Object Identifier system |
| ICT | Information and Communication Technology |
| IMC | Integrated Marketing Communications |
| IS | Information Systems |
| JKUAT | Jomo Kenyatta University of Agriculture and Technology |
| LMS | Learning Management System |
| MIS | Management Information Systems |
| MOOCs | Massive Open Online Courses |
| NACOSTI | National Commission for Science, Technology and Innovation |
| ODL | Open and Distance Learning |
| OERs | Open Educational Resources |
| OESQ | Online Engagement Strategies Questionnaire |
| PEOU | Perceived Ease of Use |
| PU | Perceived Usefulness |
| RAA | Registrar Academic Affairs |

| | |
|---|---|
| RBV | Resource Based View |
| SPSS | Statistical Package for Social Sciences |
| SWOT | Strengths, Weaknesses, Opportunities and Threats |
| TAM | Technology Acceptance Model |
| TOE | Technology-Organization-Environment |
| TV | Television |
| UDSM | The University of Dar es Salaam |
| UK | United Kingdom |
| USA | United States of America |
| UTAUT | Unified Theory on Acceptance and Use of Technology |
| VR | virtual reality |
| VRIN | Valuable, Rare, Inimitable, and Non-Substitutable |

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## ABSTRACT

Emphasis on using e-learning strategies has greatly increased as the universities continue to operate in a very dynamic and competitive world. Great market forces emanating from the dynamic technological advancement, progressively more varied learner groups with varying requirements, anticipations and intensified demands that are aimed at innovative plus diverse facilities and programs ought to be dealt with by higher education institutions. Despite the many initiatives to support online learning, many of the strategies are inadequately accomplished for successful learner goals achievement. Mixed methods research design was employed. There are a total of 74 universities licensed to operate in Kenyan universities out of which 16 universities are offering e-learning programs. The target population was the e-learners who comprised of 26,761 participants and 2,847 e-lecturers. The sample consisted of 351 e-lecturers and 394 e-learners because they both interact more with the e-learning system that uses currently implemented e-strategies. Slovin's formula was used to determine the sample as it allows researchers to obtain a sample from the population with anticipated accurateness. Stratified random sampling, a method suitable once sub-populations contained in the total population differ was used for identifying the sample size in the 16 universities individually. Primary data was collected using questionnaires with a Likert scale type of questions. Respondents' mobile numbers and email addresses was given by the university's Registrar Academic Affairs (RAA), distributed to them through e-mails and received back through the same medium due to COVID-19 pandemic situation. The questionnaire was pre-tested to 32 respondents comprising 10 e-lecturers and 22 e-learners from 1 university within Nairobi County. Descriptive and inferential statistics was used. Relationship between learner goals achievement with each variable was regressed using binary logistic regression analysis and was accompanied by relevant explanations. Results revealed that e-learning technology strategy, e-learning content strategy, e-learning administration support and e-learning communication have a statistically significant relationship with learner goals achievement at 5% significant level. Furthermore, change approach is a key factor as it played a moderating role in the learner goals achievement. An empirical model linking e-learning strategies, learner goals achievement and change approach as the moderator was developed to help e-learning managers with insight on successful identification and implementation of e-learning strategies to achieve learner goals. Further study can be carried out to include e-learning management as respondents to find out whether findings will be different. Additionally, using the same variables to find out whether there will be any change in the findings, a similar study can be done at other educational levels.

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background of the Study

Emphasis on using e-learning strategies has greatly increased as the universities continue to operate in a very dynamic and competitive world (Telles-Langdon, 2020). Great market forces emanating from the dynamic technological advancement, progressively more varied learner groups with varying requirements, anticipations and intensified demands that are aimed at innovative plus diverse facilities and programs ought to be dealt with by higher education institutions (Tadesse et al., 2021)

Globally, the face-to-face learning in the universities is a digital transformation process that is unstoppable. According to Baber (2020), who asserts that due to global COVID-19 widespread of the pandemic, there was a forced shift from the old kind of study where students met in classes to the modern digital one. For instance, just like the case of many universities globally, Hong Kong Universities suspended and transitioned their old kind of study where students met in classes to the modern digital one during the COVID-19 pandemic (Moorhouse, 2020).

Britain's Open University carried out a study and found out that e-learning takes 90% less work of the teaching and learning than traditional courses (Zhu & Mugenyi, 2015). IBM came up with a report that deployment of e-learning tools and strategies in the United Kingdom’s universities has potentially increased the productivity by 50%, (Pappas, 2017).

Consequently, e-learning benefits have pressed the universities to come up with various e-learning technology strategies to rip maximum benefits (Murphy, 2020).

In sub-Saharan Africa, initiatives of e-learning has continued to face ICT-related infrastructural challenges, inadequate policies, and inadequate stakeholder's Virtual Learning environments (VLEs) skills (Jorge et al., 2019). Furthermore, a widespread of e-learning mediations have failed at the pilot stage. This is due to failure to embrace an all-inclusive system approach leading to insufficient administrative and user training, technological maintenance, high unattainable expectations and unrealistic budget planning. Therefore, as emphasized by Jorge et al. (2019), e-learning in countries with insufficient resources appears like e-technology development is overwhelming rather than revolutionizing e-learning in the sub-Saharan Universities.

In East Africa which is one of the developing nations according to Niyigena et al. (2020), e-learners experience challenges of inadequate ICT training that would lead to higher productivity of e-learning resources which is the situation in developed countries during the last decade. Thus, the main factors that help to enhance fluency of ICT in East African region and generally other developing nations is very vital. In Kenya, e-learning delivery depends on well-established infrastructural initiatives which is way below the level of satisfaction (Kibuku et al., 2020). Furthermore, one of the characteristics of ICT infrastructure and internet bandwidth access in Kenya is the clear disparity between the urban and rural areas which stands at 69%. However, there has been a diminishing of

digital disparity save for the initiatives from the private and public institutions such as fibre optic infrastructure thus increased e-learning usage.

Despite the many initiatives to support online learning, many of the strategies are inadequately achieved for successful learner goals achievement due to inadequate technology strategies, poor content strategy, insufficient administrative support strategies, poor communication marketing strategies and inadequate change approach (Benavides et al., 2020) .Consequently, the study pursued to establish effect of e-learning strategy in learner goals achievement: moderating role of change approach in Kenyan universities. Owing to this, universities have been hard pressed to come up with various strategies to keep up to the pace. According to Benavides et al. (2020), responding to emerging innovative markets for students and intensified demands aimed at innovative plus diverse facilities and curriculums, great market forces emanating from the dynamic technological advancement, progressively more varied learner groups with varying requirements, anticipations and intensified demands is commendable.

Benavides et al. (2020) further emphasizes that universities ought to be in a position to; outline their teaching and learning vision in addition to the definition of the place of technology within the vision, identifying the possibility of getting hold of innovative targeted groups to be reached through technology use besides defining applicable technology-based delivery programs. Totally implemented strategies and developments in e-learning are aimed at motivating students to always focus their interest on the achievement of the recognized objectives thus achievement of their learning goals.

Vershitskaya et al. (2020) emphasized that most of e-learning strategies are either inadequately achieved, partly achieved or are unachieved in totality despite the fact that there is a high probability of LMS supporting e-learning. The utmost likely causes of failure are inadequate technology strategies, inadequate content strategy, insufficient administrative support strategies and poor communication marketing strategies (Vershitskaya et al., 2020). Technological advancement has brought about opportunities for learning institution to deliver education regardless of the time and physical location of the learners hence the ability to achieve learner goals. Schneider and Blikstein (2015) pointed out that e-learning systems have multiple advantages with the most significant one being the high number of students reachable due to the learning flexibility. According to Sife et al. (2007), mode of approach in teaching, learning and learning activities' administration is shifting in the universities.

Information and Communication Technology (ICT), e-learning technology strategies have emerged as the paradigm of modern education at the universities. Using e-learning systems, referring to the usage of telecommunication technology to deliver materials associated with learning and training have been initiated by the universities. A study by Akbari et al. (2013) classified approaches of offering e-learning content in an e-learning classroom as one, Synchronous referring to an approach that is streamed live, real time, usually planned, expedited and learning oriented interaction. The second approach is asynchronous which is not limited by time, location and not real time. The two methods were of focus under technology strategy. However, despite the many strategic e-learning technology initiatives by the universities, inadequate implementation of ICT infrastructure

has caused many challenges in the learner goals achievement and Kenyan universities have not been able to deal with the gap in enactment (Murphy, 2020). Ssekakubo et al. (2011) points out that the bulk of Learner Management Systems enacted within developing countries such as Kenya are either inadequately achieved, partly achieved or are unachieved in totality possibly credited to inadequate or unsustainable strategies that have not been properly implemented. Therefore, it is evident that successful e-learning technology strategies must be employed to achieve learner goals.

Successful content strategy has a great bearing on e-learning in the achievement of learner goals and vise-versa. University should develop quality and interactive course content. According to Mtebe and Raisamo (2014), e-learning lecturers ought to design course content that meets academic needs specific to the capabilities, understanding and skills of the students for maximum usage of LMS and more student's fulfillment with the entire system in order to achieve learners' goals. Martin and Bolliger (2018) carried out a study to determine learners' insights on engagement approaches in e-learning set up. The findings showed that students treasured student–lecturer engagement approaches that are in line with the classifications according to Moore (1999).

The classifications included student-to-student collaboration, student to lecturer collaboration and student to content collaboration. According to Lear et al. (2010) collaborations with classmates, lecturers as well as content assist e-learners to be more active and involved in the courses undertaken. In the study, learners graded consistent notices, prompts through emails to be very advantageous. Focusing on student-to-student classification, introductions and team effort was evident as the utmost advantageous

engagement approaches. Furthermore, the greatest valuable to those who responded in the learner-to-content classification was on the projects that reflect on the real world and regulated sessions. Accordingly, learner fulfillment, learner inspiration to study and learner performance has been increased while the perception of seclusion was reduced in e-learning programs.

Epignosis (2014) described personalized learning as tailoring learners need in terms of courses adoption, instructional approaches and educational environs. This means determining educational environs tailored for each student in terms of color, e-study content or mode of content presentation such as typescript, audial or audiovisual. According to Androniceanu (2017), various students find audiovisual content eye catching, others embrace typescript more as it helps them to retain more of the information taught while others are attracted to the study interactive approach. Furthermore Brooks et al. (2015) emphasizes that personalized e-learning, also contains adaptive-learning whereby courses are individually professed using different perceptions depending on a student's performance and progress. Achievement of this could be through student's feedback from initial tests or learner-responses from ongoing programs.

Additionally, adoption of online education has one more pointer, which could be the period spent on answering various questions by students that enables the reorganization of study units divisions permanently or when the study is ongoing hence avoiding doing it at the completion point. Brooks et al. (2015) asserts that based on learner performing and participation level, adoptive-learning helps in the structuring of courses and the level of toughness of questions used in students' assessment. Therefore, according to Chau et

al. (2017) if custom-made online learning entails a practice established on scrutiny, then it denotes the adoption of the content to an extent that learners are in a position to achieve their goals in a specific course.

Peer to peer evaluation is an additional way of keeping the learners motivated according to Kigozi et al. (2012). For example, a learner can get motivated in the event that they know the number of other students who got correct or incorrect answers to the assessment questions when the lesson is completed. Furthermore, reviewing their classmates work motivates learners thus ought to include comments to offer students an opportunity for verbal and written performance.

Makokha and Mutisya (2016) studied on the online learning position in Kenyan public Universities. The findings were that Kenyan public universities have neither completely implemented online learning as an approach of instruction nor are they moving significantly towards that path. Furthermore, small fraction of instructors and learners making use of e-learning thus far indicates that online learning is still at its early stages. Additionally, in the few instances where uploading of units has been done on LMS, they are inadequate and not interactive.

In Kenyan universities, asynchronous mode of delivery that is characterized by inadequate interaction, collaboration and communication is still commonly used. Nyerere (2016) noted that only asynchronous approaches of delivery and collaboration were employed on LMS by universities in Kenya where e-instructors uploaded unit contents on online portals in form of summaries, examinations and course works. Subsequently, online learners then

downloaded them from the university's portal. Since the system has not been planned for interactive team work, learners revise the uploaded notes and do the examinations in isolation. Thus, asynchronous methods are described by their insufficient interactions, communications and inadequate teamwork. Therefore, it is evident that Kenyan universities should purpose to deliberately scan their environment, identify and define competitive source of e-learning content whether bought or self-developed, develop delivery materials to be used and the mode of delivery that promotes student-instructor interactivity. This should be greatly influenced by resources and modern e-learning technology available for successful implementation to achieve learner goals.

Administration support strategy is key in the operational and maintainable incorporation of ICTs thus should be derived from the university's unique capabilities and competencies informed by information gathered from SWOT analysis. Administrators must be well equipped with technological knowhow, extensively be technically, pedagogically, administratively and financially knowledgeable (Vries et al., 2009).

Abdalmenem et al. (2019) conducted a study in universities within Palestine and concluded that high-ranking managers were not keen on online learning budget provision. Additionally, it was evident from the findings that high ranking managers did not help in the adherence of standards of performance as stipulated by the University. Recommendations of the study was that high-ranking managers in every university ought to have an e-learning budget provision as well as deliberately encouraging the staff members to continuously use online learning strategies.

According to Mwaniki et al. (2020), delay in the delivery of modules meant for study and learner support services that are not adequate including inadequately designed course resources, insufficient online support services for the learners including dwindling efforts to support learners' online units form the greatest e-learning programe's challenges. He recommends that universities ought to device e-strategies aimed at strengthening learner enablement mechanisms to address the institutional challenge. Accordingly, Kenyan universities ought to have appropriate strategies in place, for instance, ensure frequent refresher courses for ICT team to keep upgrading their technical skills, invest in capacity building for ICT team in terms of numbers and technical support skills. Additionally, allocation of a budget for administrative support for both students and instructors is very vital in learner goals achievement.

Communication strategy in the study focused on strategic student-instructor communication and strategic marketing communication. For the usefulness of e-learning to be realized, responses through online platforms need to be given by lecturers besides helping with learners' inquiries, issues, guidance on career, guidance on e-technological usage and guidance on online courses hence ease in their goals achievement (Vries et al., 2009). Marketing communication to the potential e-learners helps to create awareness of the courses available and how they would be of benefit to them hence the probability of increasing students' enrollment. According to Farid et al. (2018) university learning product being non-tangible in nature brought about the necessity of tailored advertising and campaigns to access identifiable markets with implementable strategies. The most used strategies for advertisement for the attraction of potentially new learners by higher

education institutions are direct-mail, tele-marketing as well as on campus visiting programs. Lately, universities have realized that websites are very essential in the learner recruitment process hence have designed very eye-catching university websites for successful recruitment.

A study by Lindbeck and Fodrey (2010) evidenced that 88% of potential university learners excluded universities from their list of options in the event that their surfing encounters were undesirable. In addition, an increase in enrollment was evident in universities that heavily invested in website technologies for communication purposes with the potential learners within the millennial age group. Universities focusing on their main potential customers using tailored communications were advantaged to record higher recruitment success. The scholar further emphasizes that the generation of millennials does not pay any attention to non-customized communication (Lindbeck & Fodrey, 2010). University websites were graded the highest by the potential learners citing it as the major spring of information about the institution and that most of those who had an interaction with the websites submitted their applications to be admitted (Gomez et al., 2016). Therefore, it is the role of universities to scan the environment to identify unique communication strategies that increase students' enrolment and learner goal achievement.

Addressing resistance to change through strategic change approach could lead to the adoption of e-learning strategies. The rate of failure in change processes could be as high as 93% with the most cited reason for employees' resistance to the changes initiated by organizations (Decker et al., 2012). According to Aleksic et al. (2015), teachers' resistance to change comes in the form of unwillingness to incorporate information and

communication technology into their pedagogical process. Kanwar, et al. (2018) further asserted that the reluctance could be due to maintenance of status quo where members of the faculty felt that they might have lesser control at their work, course quality would be lowered, less official work recognition while using technology that aids e-learning, learning approach adjustment possibility and loss of ownership of learning materials produced. Other reasons for reluctance to embrace change according to Beckton (2009) included insufficient time, inadequate information technology operation abilities and the attitude that online teaching is not part of their job description.

Kimani (2019) underscored that it is not automatic that success will be evident by just having in place great online learning initiatives and structures in the absence of appropriate management of shift to change. To take care of the university's day to day requirement for online learning flexibility and cost reduction sustenance Buzzetto-More (2010) various tools and website installations have been put in place. Nevertheless, mere connection and incorporation of systems in the university with no deliberate plan and activities to address change resistance is likely to negatively affect the implementation and usage of e-learning technologies. Without a clear and well thought out change approach of e-learning strategy, the implementation efforts most likely fail to achieve the Kenyan university's learner goals achievement. Therefore, Kenyan universities should invest in end user training who includes both learners and instructors for e-capacity building and targeted reward for those who embrace e-learning mode of learning for continued motivation.

Learner goals achievement as conceptualized in the study was considered as achieved if there is one, e-learning course learning flexibility whereby they can learn from anywhere, anytime and at their own pace facilitated by the integration of all the e-learning strategies' elements, two, perceived satisfaction which accounts for personal experience with the study's integrated e-learning strategies and finally the ability to complete courses undertaken within the time frame stipulated in the course programme. From the background information, it is clear that regardless of the many e-learning strategy initiatives that universities have employed to achieve learner goals, inadequate technology strategies, poor content strategy, insufficient administrative support strategies and poor communication marketing strategies and resistance to change due to inadequate change approach are the most likely causes of e-learning strategy failure.

Consequently, Emphasis on using e-learning strategies has greatly increased as the universities continue to operate in a very dynamic and competitive world. Great market forces emanating from the dynamic technological advancement, progressively more varied learner groups with varying requirements, anticipations and intensified demands that are aimed at innovative plus diverse facilities and programs ought to be dealt with by higher education institutions. Murage (2013) points out that despite the many initiatives to support e-learning, most e-learning strategies are not fully realized for successful learner goals achievement due to inadequate technology strategies, poor content strategy, insufficient administrative support strategies, poor communication marketing strategies and inadequate change approach.

Thus, universities ought to do a SWOT analysis to come up with well outlined and all-inclusive strategies taking into account their core competencies, capabilities and effective change approach activities capable of integrating e-learning approaches into the e-learning strategies in their learning processes of delivery. Subsequently, it will counter possible e-learning strategy causes of failure for successful learner goals achievement.

Therefore, the study aimed at determining the impact of e-learning strategies on learner goals achievement in the universities of Kenya: the moderating role of change approach, that precisely focused on activities that reduce resistance to change such as end-user training and rewards aimed at strengthening its association's impact between e-learning strategy and learner goals achievement. Accordingly, the researcher developed an empirical model linking e-strategies, learner goals achievement and change approach. This model can be adopted by e-learning managers in the universities to successfully implement e-strategies to assist e-learners in achieving their goals. The study recommended areas of further research that form the basis for researching more on the topic.

### 1.2 Operationalization of terms

**Technology strategy**: This refers to the deliberate identification and implementation of individual technological strengths and opportunities in the internal and external environment to enable e-learners to achieve their goals. The study focused on two types of e-learning technologies basically used for learning content delivery. First, synchronous technology involves real-time interaction between the instructors and the learners. Second,

asynchronous technology is self-paced whereby learners are able to view the content of their wish and have the benefit of controlling their time and place. Technology as an e-learning strategy was considered a success if Internet connectivity, e-learning technologies which include synchronous, asynchronous, and LMS assist students in the application of ICT to achieve their goals.

**Content strategy**: e-learning institutions need to scan their environment, identify and define a competitive source of e-learning content whether bought or self-developed, develop delivery materials to be used and the mode of delivery that promotes student-instructor interactivity. All this should be greatly influenced by resources and modern e-learning technology available for successful implementation to achieve learner's goals. Content strategy was considered as an appropriate e-learning strategy to achieve learner goals. Instructors or content designers are expected to come up with an outstanding course content that meets the educational goals by increasing learner's expectations and satisfaction. Moreover, the content must be appropriate to the learner's knowledge, skills, and abilities to maximize the use of the available ICT infrastructure. More so, content developed should be deliverable through various delivery materials such as course modules, audio compact disks (CDs), computers, tablets, and phones and through various modes of delivery which includes but not limited to online, course modules, textbooks and lecture notes, video conferencing, Moodle, Skypes, LMS or blended. Source of content referring to where students get their e-learning materials from, whether from experts or university faculty instructors were of focus in this study.

**Administration support strategy** focused on the plans by the Universities to ensure the availability of online learning technical support specialists that have e-technological skills and capacity to handle students' queries and financial resource allocation for the tasks. The success was measured by the success of an e-learning administrative support staff that had strong technology and problem-solving skills. The technical administrator should also understand the LMS and technologies used for developing and designing courses. The strategy was also considered effective enough to achieve learner goals if the ICT team has the capacity in terms of numbers and skills capacity to support flexibility. Financial resource allocation for administration support was focused on making the strategy implemented successful.

**Communication strategy:** In communication strategy, two factors were focused on in communicating e-learning to learners: interactive student-instructor online communication and marketing communication to the potential e-learners to create awareness of the courses available and how they would be of benefit to them. SWOT analysis was necessary to come up with competitive marketing strategies. In this study communication as an element of e-learning, a strategy was considered successful in the achievement of learner goals outcome if instructors can interact well with students online to handle various queries, give career guidance and offer guidance and counseling. Additionally, marketing communication needs to be effective enough to win potential e-learners into the e-learning mode of learning.

**Learner goals achievement** was considered as achieved if there was one e-learning course learning flexibility whereby they can learn from anywhere, anytime and at their

own pace facilitated by the integration of all the e-learning strategies' elements; two, perceived satisfaction which accounts for personal experience with all the e-learning strategies namely content, technology, administration and support, and communication and finally the ability to complete courses undertaken within the time frame stipulated in the course programme while saving on cost.

**Change approach**: Refers to the planned activities and programs implemented by the university such as end-user training, giving rewards, and those that deal with resistance to ensure a successful implementation of e-learning strategies to achieve learner's goals. The change approach moderating variable was considered successful if all the initiatives such as training the users on how to usage e-learning technology, developing and delivering e-learning content, giving incentives to the instructors, and initiatives to curb resistance to change have been adequately implemented.

**E-learning** has been described by the use of emerging e-learning technologies that includes: synchronous, asynchronous, and Learning Management System (LMS) in learning and or learner support services. Content delivered through the Internet, intranet, audio, satellite broadcast videotapes, interactive TV, and CD-ROM is involved. This ensures successful blended learning for the achievement of learner goals in the universities of Kenya.

**E-learning strategy:** It is the deliberate identification and implementation of plans through SWOT analysis, which could be short-term, below five years or long term, above

five years to set programs that are used by a university to achieve predetermined learner goals achievement.

## 1.3 Statement of the Problem

Universities deal with great market forces emanating from the dynamic technological advancement, increasingly varied learner groups, students' dynamic requirements as well as intensified requests for diverse programs and services. Consequently, universities have been hard pressed to come up with various strategies to keep up to the pace (Jacobsen et al., 2013). However, despite the many e-learning strategies that have been introduced in the universities in developing countries, learner goals achievement has become a major challenge which could be attributed to inadequate or unsustainable e-learning strategies and or poor change management during the implementation process (Makokha & Mutisya, 2016).

Vershitskaya et al. (2020) emphasized that most of e-learning strategies are either inadequately achieved, partly achieved or are unachieved in totality despite the fact that there is a high probability of LMS supporting e-learning. The utmost likely causes of failure are inadequate technology strategies, inadequate content strategy, insufficient administrative support strategies and poor communication marketing strategies (Vershitskaya et al., 2020). Furthermore, according to Mwaniki et al. (2020), delay in the delivery of modules meant for study and learner support services that are not adequate including inadequately designed course resources, insufficient online support services for the learners including dwindling efforts to support learners' online units form the greatest

e-learning programe's challenges. He recommends that universities ought to device e-strategies aimed at strengthening learner enablement mechanisms to address the institutional challenge. Inadequate ICT and e-learning infrastructure, poor internet bandwidth, insufficient expertise, inadequate human capacity, insufficient change management, inadequate content design and delivery hinder successful e-learning strategy implementation (Tarus et al., 2015).

The rate of failure in change processes could be as high as 93% with the utmost mentioned reason being employees' resistance to the changes initiated by universities (Decker et al., 2012). Without e-learning strategies and change approach programs for its successful implementation, universities may be faced with decreasing market share and unsuccessful learner goals achievement. Kimani (2019) underscored that it is not automatic that success will be evident by just having in place great online learning initiatives and structures in the absence of appropriate management of shift to change.

In the quest to understand more about e-learning in the universities, various scholars have studied various topics about it as evidenced in the reviewed articles. Some of the areas studied included issues and challenges facing information technology implementation in advanced training. Secondly, the influence of ICT e-learning applications among the undergraduate learners . Thirdly, e-learning strategy and the association on increasing the efficacy of educational performance. Fourth, the impact of ICT applications' use and increasing the ability of scientific research among the faculty's members. Fifth, the impact of modern and latest applications of e-learning technologies used in services delivery on improving research performance. Sixth, the public universities' status of e-learning.

Seventh, investigating the factors that influence the implementation of e-learning. In addition, a study on the establishment of the obstacles hindering the success of Open and Distance Learning programs was done among others. Based on the reviewed literature, studies have been carried out on one or two variables used in this study but none has combined the six variables, as it is the case in the study.

Therefore, the study aimed at determining the impact of e-learning strategies on learner goals achievement in the universities of Kenya: the moderating role of change approach, that precisely focused on activities that reduce resistance to change such as end-user training and rewards aimed at strengthening its association's impact between e-learning strategy and learner goals achievement. Researcher came up with an empirical model linking e-strategies, learner goals achievement and change approach. This model can be adopted by e-learning managers in the universities to successfully implement e-learning strategies to assist e-learners in achieving their goals. The study recommended areas of further future research that form the basis for researching more on the topic.

## 1.4 Purpose of the study

The study was carried out with the main purpose of establishing the influence of e-strategies and learner goals achievement: the moderating role of change approach in the Kenyan universities. The study proposed an empirical model linking e-learning strategies, change approach and learner goals achievement that will give e-learning directors in Kenyan universities insight on how to successfully implement e-learning strategies to achieve learner goals.

## 1.5 Limitations of the Study

Factors over which the researcher has no control of during the research process are referred to as study limitations. Due to COVID-19 pandemic, the researcher was not able to physically distribute questionnaires to the respondents in the course of data collection. To deal with this limitation, researcher got the respondents' mobile numbers and email addresses from registrar academic affairs office. Delivery of questionnaires to respondents was through an email after which they were filled and emailed back to the researcher. To increase the level of response, follow-ups were made through emails and calls. Record of the questionnaires was upheld to help in the questionnaires accountability, both issued and returned back. The challenge with the instruments validity can also arise during data collection process in that there is no single data collection instrument that can be termed as completely dependable. According to Cable and DeRue (2002), points out that validity is when an instrument measures the extent to which it was meant to measure. To control the measuring instrument's validity challenges, a pre-test was done in one of the universities based in Nairobi and involved 32 respondents who comprised of 22 e-students and 10 e-lecturers. Mugenda and Mugenda (2008) argues that pre-test was vital for determining the questionnaires' content validity in conjunction with other research experts' opinions.

## 1.6 Objectives of the Study

### 1.6.1 General Objective

Establishment of the relationship between e-learning strategy, change approach and learner goals achievement in the Kenyan Universities was the study's general objective.

### 1.6.2 The Specific Objectives

Specifically, the study sought to:

i. To establish relationship between e-learning technology strategy and learner goals achievement in the Kenyan universities.

ii. To examine the relationship between e-learning content strategy and learner goals achievement in the Kenyan universities.

iii. To determine the influence of e-learning administration support strategy on learner goals achievement in the Kenyan universities.

iv. To determine the effect of e-learning communication strategy on learner goals achievement in the Kenyan universities.

v. To examine the moderating role of change approach on the association among e-learning strategies and learner goals achievement in the Kenyan universities.

## 1.7 Research Hypothesis

To guide in the implementation of the study, hypothesis were formulated as follows;

i. $H_0$1 e-learning technology strategy and learner goals achievement in the Kenyan Universities have no significant relationship.
ii. $H_0$2 e-learning content strategy and learner goals achievement in the Kenyan universities have no significant relationship.
iii. $H_0$3 e-learning administration support strategy and learner goals achievement in the Kenyan universities have no significant relationship.
iv. $H_0$4 e-learning communication strategy and learner goals achievement in Kenyan universities have no significant relationship.
v. $H_0$5 There is no moderating effect of change approach on the relationship between e-learning strategies and learner goals achievement in Kenyan universities.

## 1.8 Justification of the Study

The study focused on e-learning strategies precisely, technology, content, administration support and communication strategies to achieve learner goals. Change management approach being the moderating variable precisely focused on activities that reduce resistance to change such as end-user training and giving rewards to strengthen its effect on the relationship between e-learning strategy implementation and learner goals achievement.

An empirical model was proposed and developed linking e-learning strategy, change approach and learner goals achievement in the Kenyan universities that will help

university e-learning managers to identify and develop a successful e-learning strategy implementation and plan for an effective change approach to achieve learner goals in Kenyan universities. Additionally, educational institutions in other ranks for instance primary schools, secondary schools and tertiary institutions can tap into the findings and recommendations for a successful application of the strategies. Furthermore, study also recommended areas of further future research which forms basis for researching more on the topic.

## 1.9 Scope of the Study

This refers to the characteristics that a researcher selects to indicate the scope of the study. The scope in this research covers the study population, study sample, variables under study, perspectives of the theories and the data collection instruments to be used. Population boundary was limited to specific universities that offer e-learning. e-students and e-lecturers formed the respondents sample due to their day-to-day interaction with the implemented strategies hence, better placed to respond based on their experience. On the moderating variable, study was delimited on the examination of the moderating role of change approach on e-learning strategy and learner goals achievement. e-learning strategies were limited to those that concerns e-technology, e-content, e-administration support and e-communication. No other e-learning activities in universities was investigated. Hence, the only variables under study were technology strategy, content strategy, administration support strategy, communication strategy, change approach and learner goals achievement.

## 1.10 Significance of the Study

An empirical model was proposed and developed linking e-learning strategy, change approach and learner goals achievement in the Kenyan universities that will help university e-learning managers to identify and develop a successful e-learning strategy implementation and plan for an effective change approach to achieve learner goals in Kenyan universities. The body of knowledge benefited from the study findings and recommendations. Furthermore, great insights on e-learning strategy were gathered from the findings. Additionally, educational institutions in other ranks for instance primary schools, secondary schools and tertiary institutions are able to tap into the findings and recommendations for a successful application of the strategies. Furthermore, the study also recommended areas of further future research which forms basis for researching more on the topic.

## 1.11 Assumptions of the Study

One of the assumptions was that study respondents would give honest feedback. Another assumption was that during data collection respondents would give uniform feedback and assessment pointers.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

The chapter aimed at scrutinizing the conceptions between e-learning strategies and learner goal achievement. Besides, the concepts about the change approach, which is the moderating variable, have also been discussed. Empirical studies by various scholars relevant to this discourse have also been reviewed and synthesized to identify research gaps as well as acquire an in-depth understanding of the subject matter. Moreover, to help us appreciate the subject matter theories explaining the relationship between e-learning strategy and learner goals achievement have been discussed alongside change management theory.

## 2.2 Theoretical review

Kombo and Tromp (2009) define theories as a reasoned statement or group explaining phenomena and based on empirical evidence. Theories explain occurrences by providing a generalized explanation of phenomena. It offers a systematic relationship between events, occurrences, or phenomena. According to Kombo and Tromp (2009), scholars must be conversant with relevant theories in their area of specialization. A theory provides guidelines to subsequent research, determines parameters to be measured, and important statistical correlations to observe when researching a defined problem statement (Torraco, 2004). Theories about the relationship between e-learning strategy implementation and learner goals achievement as well as that of the moderating variable, change approach, have been reviewed. The study was anchored on dynamic capability theory and supported

by other theories that included Technology Acceptance Model (TAM) theory, Cognitivism theory, Constructivist theory, integrated marketing communications (IMC) theory and change management theory.

### 2.2.1 Technology Acceptance Model-(TAM) theory

Fishbein and Ajzen were psychology researchers and the main proponents of TAM theory in the year 1975 (Davis, 1989). Davis (1989) further advances that Perceived Usefulness (PU) talk about the extent to which a user perceives technology as being capable to enhance his/her performance at work. Subsequent study by Munguatosha (2011) shows that TAM is wide-ranging and has been modified to apply mainly in areas such as information systems (IS), (management information systems (MIS) and adoption of information technologies.

Furthermore, institutions will be forced to respond to changing needs and expectations and to new students markets. Consequently, e-learning in the institutions of advanced studies must be articulated in the vision clearly mapping out potential market targets for exploitation through technological use. Furthermore, institutions of higher learning can apply the TAM framework in the e-learning systems' implementation for students' goals attainment.

### 2.2.2 Dynamic Capability Theory

Helfat et al. (1997) articulated the Dynamic Capabilities Theory. The theory provides great insights on the sources of competitive advantage. The theoretical framework is based

on the resource-based view (RBV) concept, through which competitive edge is derived from the ownership of resources that are valuable, rare, inimitable, and non-substitutable (VRIN). According to Helfat et al. (1997) resource base is a broad term referring to an organization's resources ranging from complementary assets, technology, financial, structural, reputational, market, and institutional assets.

However, in a competitive and dynamic environment, the performance and relation of resources alone are insufficient to guarantee the attainment of sustainable competitive advantage. Wu (2006) reckons that in an unstable environment resources alone do not strongly reinforce the competitiveness of firms. Similarly, tangible assets such as buildings, financial capital, vehicles, etc. are also critical in ensuring smooth operations of firms. Nonetheless, Helfat et al. (2007) asserts that processes are also treated as resources. Effectively, institutions of higher learning seek to adopt new technologies in delivering their programs to reach new student markets and thus increase enrolment.

In Kenyan universities, this theory was used to inform technology strategy. Garrison (2017) came to an agreement that well deployed technology would most likely assist in the achievement of the learner's goals. Universities should be in a position to do a SWOT analysis to identify their capabilities, which could include unique synchronous and asynchronous e-technologies, staff technological innovative ideas, or their ICT infrastructure that is capable of coping with the dynamic e-learning technology and adapt them to achieve their learners' goals. The theory also offers helpful insights on the identification of e-learning content, e-learning administration support, and e-learning

communication strategies in their identification during SWOT analysis and their practice to achieve learner goals. This is because the theory concept offers useful supplementary perceptions on response to questions pertaining the use of resources that possess VRIN characteristics capable of providing a competitive advantage to the universities as they endeavor to achieve learner goals.

### 2.2.3 Cognitivism Theory

In 1936, Piaget, a psychologist made a systematic study of cognitive development thus becoming the first one to do so. Yilmaz (2011) reckon that cognitivists perceive learning to be an internal process involving thinking, memory, abstraction, reflection, metacognition, and motivation. Cognitive psychologists believe that learning as a process revolves around information processing. The various theories highlighted in the study were useful in giving guidance on designing e-content for learners. Different aspects must be brought into consideration by instructional designers. However, this may be costly and time-consuming. To the instructors, the theory will give insights on best practices of how to deliver e-content and advice on the best tools of delivery. Thus, very applicable to content strategy in achieving university's learner goals.

### 2.2.4 Constructivist Theory

The theory was conceptualized by Vygotsky in 1978. The theory emphasized on the personal construction of knowledge from an individual's internal representations. The individuals often apply previous experiences as a foundation to the learning process. Johansen (1990) asserts that learning occurs through interaction within a rich learning

environment and building on previous knowledge. Moreover, Johansen (1990) further added that learning results from negotiations, involvement in authentic activities, and social interaction. Nunes and Fowell (1996) suggest that the need for social negotiation multiple perspectives and situated learning implies that in assisting a learner to construct knowledge, adoption of various learning strategies is necessary.

Bates (1991) asserts that the learning process has two kinds of interactivity. First, the learning materials such as computer-based simulations, traditional textbook social activities between instructors and students. Second, involves private or individual, activity between the students. The interaction with facilitators or instructors is aimed at promoting learning through supervised guidance provided by skilled people (Rogoff, 1990).

The theory focuses on student and tutor social interactivity. Where the tutor supports the student on course, content, and career guidance. Additionally, technical and administrative support initiatives such as e-learning technology online registration, learner information are critical for the success of learners. Moreover, online social skills, ability to use computer facilitated technology, web navigation, web searching, and online etiquette, are of great significance to the learners. The theory has, therefore, been used to provide insights on the administration support strategy of e-learning. Johansen (1990) posits that learning occurs through interaction with rich learning environments, and by progressively building on previous knowledge. This concurs with Nunes and Fowell (1996) who suggests that the need for social negotiation multiple perspectives and situated learning implies that in assisting a learner to construct knowledge, adoption of various learning

strategies is necessary. Based on Johansen (1990) and Nunes and Fowell (1996) arguments, the theory also informs the content strategy variable.

### 2.2.5 Integrated Marketing Communications (IMC) Theory

Integrated Marketing Communications (IMC) was an idea that was conceived in 1989 in the United States of Amercia (USA) at the American Association of Advertising Agencies (AAAA) when Keith Reinhart was the chairman. It focused on advertising efforts across several different promotional methods. IMC synergizes, integrates, and combines, the elements of the communications mix, with the strengths of one offsetting the shortcomings of others. Therefore, the IMC communication approach entails the consideration of all message delivery channels, all forms of communication, all brand contact points, customers, and prospects.

Therefore, Kenyan universities that will embrace IMC strategic marketing approach will be able to build a strong e-learning brand and spot different types of prospective e-learners to be targeted with customized communication. This builds a strong relationship with e-learners hence a possibility of higher enrollment and a higher level of interaction between e-lecturers and potential e-learners for online career advice before choosing courses to undertake. The theory in the study informs the e-learning communication strategy that mainly focuses on marketing communication in the universities to create awareness to potential e-learners on available e-learning services.

### 2.2.6 Change management theory

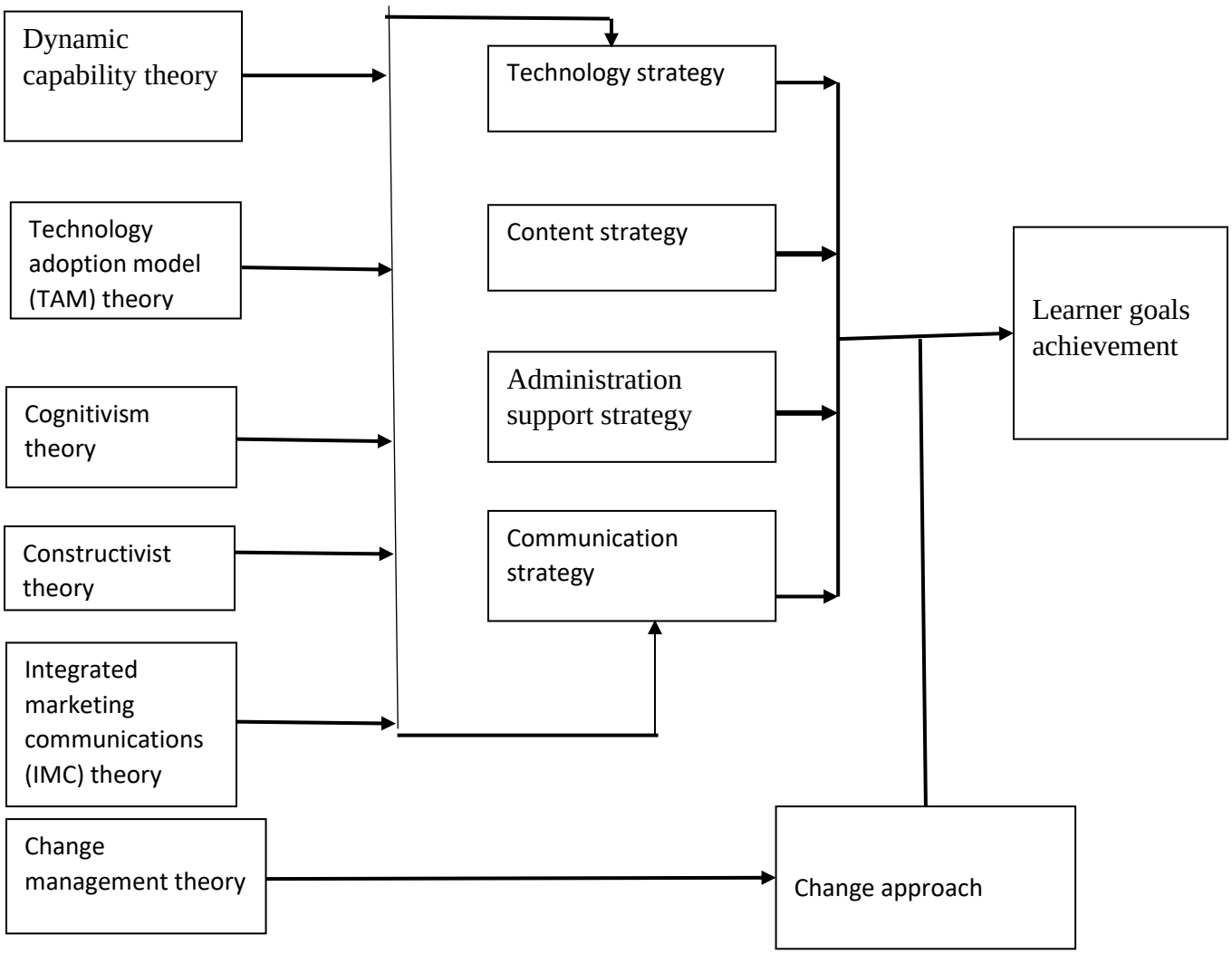
In 1947, Kurt Lewin developed a change model theory for understanding the change process using three distinct steps as follows; and unfreezing changing and refreezing the model is both practical and simple to understand the process of change (Lewin, 1951). Lewin further posits that the change process involves evoking the perception that a change is required, followed by implementing the new anticipated modification and to finish up with coagulating that new actions as the standard. According to Lewin (1951) most people naturally resist change.This theory is applicable in this study as it gives insight on how the change approach is used as a moderating factor between e-strategies and learner goals achievement in the Kenyan universities.

At the unfreezing stage, e-learning directors will communicate the need for implementing e-learning strategies and how it will affect individuals and the achievement of educational outcomes. At the changing stage, e-learning strategies will be implemented by putting in place various programs and activities such as end-user training and rewards to curb resistance to change by ensuring change of attitude and ensure more e-learning technology system usage. At the refreezing stage, institutions of higher learning must remain vigilant to ensure that efforts towards change are not lost but rather made concrete into the institutions' culture as the new way of doing things. Since positively reinforced behavior is likely to be repeated recognition and positive rewards of individualized efforts are habitually used to reinforce the new state of changes.

### 2.2.6 Theoretical Framework

**Figure 2.1**

*Theoretical Framework*



## 2.3 Empirical review

Scrutinization of published materials, from periodicals, books, and articles providing empirical findings and in-depth exploration of the theoretical concepts guides the process of empirical review (Zikmund et al., 2010). The review involves an exhaustive sample of preceding research related to the research question. According to Yang and Miller (2008), empirical literature review helps an investigator to assert why their research study is credible or substantive. Therefore, the empirical literature on e-learning technology strategy, e-learning content strategy, administration support strategy, and e-communication strategy were reviewed.

### 2.3.1 e-learning technology strategy

Dabbagh et al. (2019) conducted a study where they surveyed students in one of the largest universities in the USA. The study sought to investigate technologies most commonly used for learning, how learners and tutors value the technologies, and the perception of the technology's learning support capabilities. According to the findings, use of technology was closely related with laptops. Generally, the majority of respondents acknowledged the significance of technology as an effective tool in fostering interaction, collaboration, and discussion. It facilitates planning experiential learning, resource management, support for the organization, and supports a personalized learning experience.

A study by Luo (2020) aimed at investigating the issues and challenges facing information technology implementation in higher education. The study found that Chinese and the United Kingdom (UK) Universities encounter barriers, some are similar but others are different when deploying e-learning technologies. The key barriers faced by UK institutions are mainly technical literate, lack of time and financial resources, and legal issues; whilst traditional mindset. On the other hand, teaching methods, market demand, and government support are the key barriers faced by Chinese institutions. Barriers facing the UK and Chinese e-learning deployment included organizational capability and technical constraints. The study results revealed a gap that government should fill by providing necessary support for e-learning initiatives in both Chinese and UK institutions.

Mwaniki et al. (2020) in his study examined the challenges hindering ODeL's success in Kenyatta University. Findings were that both learners and instructors faced major challenges in the area of insufficient funds for buying gadgets, inadequate internet connectivity and unsatisfactory exposure to computers in addition to ICT technology. Kimani (2019) conducted a study to examine the correlation between undergraduate learners' e-learning skills in critical thinking and the ICT applications in a selection of Universities in Kenya. Findings showed a positive interaction between undergraduate learners' critical thinking skills in e-learning and ICT applications.

Vershitskaya et al. (2020) did a study on the contemporary Russian universities' management. The study which aimed at investigating students, tutors and managements' readiness for active e-learning in Universities was titled elearning education and

information technology's projections and barriers. The study aimed to investigate the student, tutors, and managements readiness for active e-learning in Universities.

The study purpose was to establish ICT issues and prospects in the management of education during the introductory stage of e-learning. To attain the study goals, questionnaires were administered to the students who were taking IT and were in their first year. The participants were from three universities in Moscow. The learners were engaged directly in e-learning activities involving 19 ICT, specialists from e-learning, 6 college executives, 3 management university heads, and 135 tutors. According to the research findings, the potential of a learning system to support blended learning, activities do not translate to the realization of their full potential. Instead, e-learning initiatives are a partial or complete failure, judging by the primary objective on the onset of the e-learning programs. Poor service and marketing strategy coupled with technical support services that are poor poses the most likely reasons for failure.

Pandita (2017) study on internet as a transformational agent mainly focused on the speed of growth of the internet and its penetration in many parts of the world. In his findings, about 49.63% constituting nearly 3.73 billion people across the globe have the internet's accessibility and ability to use it on a daily basis in their daily activities. Furthermore, America being the global largest continent registered the highest internet infiltration at 88.12%. This was followed by Europe and Oceania that attained77.42% 68.06% respectively. Generally, it was observed that continents with the highest population lagged behind when it came to internet penetration hence the conclusion that Africa and Asia are the weakest links in internet penetration and usage globally owing to their high population.

A study by Vitoria et al. (2018) examined the learner's perception on integration and adoption of e-learning system as they use the TAM framework to base their theoretical argument. The findings indicated that all learners acknowledged the usefulness of modules used plus the ability to easily use them. The students not only emphasized they understood the information but also accessed and navigated documents effortlessly which has the capability to positively change their attitude towards embracing e-learning platforms. In addition, TAM was used to assess the perception of teachers towards e-learning. The result of which indicated that coupled with a tutor's previous experience, the teacher's perception towards e-learning impacted behavior (Dookhan, 2018).

In a study involving Mauritian students in public universities Dookhan (2018) investigated learner's attitudes on e-learning. The study showed that the attitude of the students on e-learning was positive. Nonetheless, the attitude improved with the perception that e-learning systems are easily usable and accessible. Furthermore, the study revealed that using it to complement traditional method classes, e-learning increased classroom engagement with the lectures whilst improving students' experience.

Nyerere (2016) did a survey to review Open-Distance-Learning (ODL) in Kenya's existing situation. The COL study became necessary in the coming up of initiatives and projects relying on ODL use countrywide. Approximately 66.7% of the respondents according to the research findings agreed to have all the ODL programme computers for delivery. However, 24% claimed that there was inadequate access to computers for delivering the ODL programme. Of the 67% of the participants, acknowledged that tablets

were unavailable to learners, also noting their significance in facilitating the implementation of ODL programs.

Research was conducted by Njenga and Fourie (2010) on e-learning basing on the Unified Theory on (UTAUT) and Digital Object Identifier (DOI) system. The study findings showed factors such as self-efficacy, perceived usefulness, demonstrability, complexity, perceived ease of use, and compatibility had a positive influence on strategy implementation of e-learning. Munguatosha et al. (2011) researched socially networked learning implementation in universities in Tanzania. The study is based on Vygotsky's social development theory. The results revealed that system interactivity and ICT infrastructures were among the technical characteristics that affected the social networked learning implementation and adoption. According to Njenga and Fourie (2010), the literature lacked common technological characteristics influencing strategy implementation of e-learning. Consequently, to avoid user resistance to e-learning technology the implementation should be simplified and user friendly. Ndonje (2013) study to examine e-learning implementation in Tanzania found that the technological characteristics include compatibility, complexity, and relative advantage. These factors may positively or negatively affect the decision to implement a technological innovation.

Emergence of ICTs has enabled e-learning to give e-learners opportunities in convenient, instant, flexible and long-distance learning. e-learning environment can either be hybrid, synchronous, and or asynchronous (Perveen, 2016). Real time engagement is offered by learning environments that are synchronous. The interaction is collaborative integrating elements such as group chat or video conferencing. Moreover, Synchronous learning

requires that both the student and instructor to be present simultaneously (Shahabadi & Uplane, 2015). Conversely, asynchronous learning environments are not space or time-bound. Meaning that learning can take place at different times and places. The students are expected to use internet tools for flexible learning (Shahabadi & Uplane, 2015). Nevertheless, synchronous e-learning comes with certain cost implications relating to the costs incurred in acquiring necessary infrastructure, and the cost of ensuring adequate bandwidth. Many technologically advanced nations adopted asynchronous e-learning (Ssekakubo et al., 2011).

Tornatzky and Fleischer (1990) developed a model known as the Technology-Organization-Environment (TOE) framework. The TOE theory, suggests that a firm functions along three dimensions of TOE. The three aspects influence an organization's ability to either reject or implement new technologies (Lee & Chung, 2009). The Technology aspects include factors such as expectancy, reliability, cost, compatibility, performance and complexity. Additionally, factors at the organizational level include innovativeness, competitiveness, human and financial resources.

The environmental aspect includes factors of competition, industry, government, customers, and suppliers. These aspects may positively negatively impact the decision to implement a technological innovation. In the Kenyan context, the TOE theory could be of great assistance during the e-learning technologies SWOT analysis process. Based on Technology, organizational and Environmental dimensions the universities are in a position to do the SWOT analysis to identify the most effective, efficient, and cost-effective e-learning technologies for learner goals achievement.

### 2.3.2 e-learning Content Strategy

Martin and Bolliger (2018) study to investigate learners' perceptions concerning online learning environment's engagement strategies. The study findings revealed that students valued lecturer-learner interaction strategies. The three kinds of engagement strategies inherent in effective online courses according to Moore (1999) included interaction between student-to-instructors, student-to-content interaction, and student-to-learner interaction.

A study by Mwaniki et al. (2020) establishes the obstacles hindering the Open and Distance Learning program's success in Kenyatta University. It was found out that key institutional challenges facing the programme are inadequate learner support services, delay of materials used for study and insufficient support in academic. Moreover, lecturers failed to facilitate units online and course materials were poorly designed. To address the institutional challenge the study recommended strategic initiatives that will strengthen learner support mechanisms.

According to Lear et al. (2010) instructor, content and peer engagement enables online students to become more engaged and active in their studies. Regular announcements, students' ratings, grading rubrics, and email reminders are most useful under the e-learning content category. Moreover, icebreakers, collaborative work, and learner-learner category were considered as the most beneficial interactive strategies. Respondents agreed that real life projects and structured discussions were the most beneficial. Consequently,

this increases student performance in online courses, enhances learners' satisfaction, reduces the feeling of remoteness, and enhances student inspiration to learn.

Research conducted by various scholars such as Andersen et al. (2018), Kang and Im (2013), and Walker (2016) yielded similar results. All the scholars agreed that learner–instructor engagement is a vital predictor of learners' achievement and satisfaction in e-learning courses. Besides instructors have the opportunity to foster a sense of belonging and community within learners. Several ways instructors apply in fostering community and belonging in the students are through modelling online behaviour, demonstrating virtual presence, offering structured or guided virtual discussion.

Furthermore, Martin et al. (2018), and Shackelford and Maxwell (2012) both contend that tutors promote a sense of community by offering encouragement and support, creation of alternative communication channels, setting study objectives, and timely feedback. Notably, excellent communication is key in promoting online student interaction. Multiple communication channels promote better levels of instructors-student engagement.

Walker (2016) however notes that it is not automatic that all tools of communication are of value to the students, for example, learners tend to dislike phone calls and chats. The author further argues that direct interaction when students and instructors engage makes the students to feel that they are in the right place. Therefore when instructors are accessible through multiple channels learners developed confidence in the system. Ryle and Cumming (2007) argue that although the facilitator's presence is critical, each

different learners' community may have varying needs as far as interaction with the instructor is concerned.

Learners–content engagement is a critical component of interaction needed for the learner's success (Vrasidas, 2000). According to Tuovinen (2000), learners–content engagement is very vital because students interact with both planned activities and instructional materials. Su et al. (2005) reckon that learners–content engagement is described as the time learners are engaged in studying instructional content. The instruction content occurs in varying formats including video, text, interactive games, online resources, and audio. Rodrigues and Armellini (2018) studied the respondent's interaction with content in an e-learning scenario without planned social interaction. The findings were that there was a significant interaction between instructional content and learners. Students admitted that they learned more in their e-learning courses. Besides, online students attained higher grades than learners in traditional classes did.

The findings showed that content-based learning enables learners to progress at their own pace and master content and hence attain flexible learning objectives. Chao et al. (2011) study combined knowledge sharing and online learning in an experimental design. The research findings revealed that effective sharing of knowledge enhances learning online. Additionally, learner–content engagement is associated with the success of learners who learn online. Zimmerman (2012), researched about learner–content engagement as a precursor of learning online's success. The study was carried out to determine the association between students' grades and the time they spent with their course materials.

The findings revealed that learners spending more time on course materials were highly likely to excel in their studies.

Kisanjara (2020) carried out a study to assess factors the adoption factors influencing e-learning in Tanzanian universities. The findings of the study indicated that characteristics of the user, characteristics of technology, social-attributes, environmental and adoption of e-learning is significantly influenced by characteristics of pedagogy. The study introduced new attributes like pedagogical, environmental, and social factors, which were inadequately addressed in the previous e-learning adoption models. Furthermore, both attributes were jointly used to create a model for improving the execution of e-learning strategies in Tanzanian and countries with similar challenges.

Murage (2013) study aimed at determining the status of e-learning as a course delivery method and review a range of challenges experienced by public universities in adopting e-learning. One of the research findings was that different staff were involved in the transmission and development of e-learning course modules. Some of the study recommendations were that staff and students should be motivated and encouraged on using systems used for e-learning, that staff members should be sensitized on the importance of e-learning through workshops for training and organized seminars. Exposure and training for all the lecturers on writing online learning materials and developing tools for content design was highly recommended.

Eom (2019) Studied self-regulated learning strategies and the effects of student motivation on student's perceived e-learning satisfaction and outcomes. Structural equation modeling

is used to assess the influence of extrinsic motivation, intrinsic motivation, and self-regulated learning methods on perceived students outcomes and satisfaction. The findings indicated that self-regulated, intrinsic motivation and learning methods impact online learning outcomes. However, extrinsic learners' motivation did not have a meaningful correlation with learning outcomes. Nonetheless, it impacted self-regulated learning. The findings implied that the outcomes of e-learning strongest predictor was derived from intrinsic motivation.

Makokha and Mutisya (2016) studied on the online learning position in Kenyan public Universities. The findings were that Kenyan public universities have neither completely implemented online learning as an approach of instruction nor are they moving significantly towards that path. Furthermore, small fraction of instructors and learners making use of e-learning thus far indicates that online learning is still at its early stages. Additionally, in the few instances where uploading of units has been done on LMS, they are inadequate and not interactive. Regardless of the adopted e-learning strategy, several aspects can be integrated into content. The aspects include ideas e.g. serious game (gamification), adaptive learning, personalized learning, video-based learning, peer-to-peer assessment, and bite-sized learning (Curpănaru, 2021).

The application of current trends in content serves the same objectives. The goal is to awaken the student's interest and fulfill learners' needs for self-improvement. Secondly, through simulating phenomena, it facilitates a high level of understanding by which in a face-to-face training setup would require special materials or financial resources.

Gamification is defined as the process of techniques specific to the game rules and in a non-game environment to encourage and motivate the learners in the studies (Kapp, 2012).

Regardless of age, students are both happy to learn from past mistakes and to get reward for correct answers reinforces positive learning outcomes. Both Choules (2007) and, Elsaid and Abbadi (2013) agree that gamification is a technique used to embed content in medicine and technical courses. The technique will ideally provide simulated experiences for students to improve students' understanding. Medical courses and laboratory-associated technical courses use the LMS platform which incorporates gamification and simulation elements. Dinicu (2017) argues that the techniques help the learners to understand the succession of procedures and instruments used, and enhance practical skills in the field.

Bârsan et al. (2017) contend that the development of laboratories in a traditional face-to-face learning setup is capital intensive. The alternative virtual setup can be less costly to undertake without compromising the learning standards (Bârsan et al., 2017). Ideally, both setups can be used to complement each other with virtual classes used to familiarize the learners with equipment and new products in the field whereas traditional face-to-face classrooms are left for more demanding activities (Bârsan et al., 2017).

Personalized learning according to Epignosis (2014) refers to the adoption of pedagogical learning environment strategies, and the curriculum, to learners' needs. Implying that a learning environment can be suited for each learner according to the form of content (audio, text, Video), theme, color, e-learning content. Some learners prefer multimedia

content whereas, others can commit more to memory if the content is in text format but still other grasp content presented through interaction (Androniceanu, 2017). EdSurge (2016) adds that personalized e-learning also contains adaptive learning where adaptation is achieved for example by the way students perform in the preliminary test or answers during each course. Consequently, it enables the instructor to skip some lessons if the teaching objectives have been met or repeat content that was not adequately grasped by learners. The re-scheduling of learning units could not only be done at the end but also mid-way during classes. Various scholars concede that the utmost indicators of adaptive e-learning may be derived from the time that the learners spend when answering particular questions.

Students can also be kept continually interested during a course according to a study by Kigozi et al. (2012) through peer-to-peer assessment. Peer-to-peer assessment is where colleagues work through peer review processes. Additionally, students improve their oral and written communication through evaluation activities followed by feedback. Therefore all strategies and trends adopted in e-learning aim at engaging the students to maintain their interest. The strategies help students to develop the skills and qualifications, achieve the established goals, required by the teaching goals, and thus attain their learning objectives.

### 2.3.3 Administration support strategy

A study by Mwaniki et al. (2020) establishes the obstacles hindering the Open and Distance Learning program's success in Kenyatta University. It was found out that key

institutional challenges facing the programme are inadequate learner support services, delay of materials used for study and insufficient support in academic. Moreover, lecturers failed to facilitate units online and course materials were poorly designed. To address the institutional challenge the study recommended strategic initiatives that will strengthen learner support mechanisms.

The study by Abdalmenem et al. (2019) sought to ascertain methods of eLearning and the part that hey play in enhancing the efficacy of the performance of education. The study covered several universities such as the University of Ottawa, Suez Canal, Munster, Islamic, Al-Aqsa, and Al-Azhar University. Finding showed that there was a positive link between efficiency in educational performance and the adaption of e-learning strategies. It became apparent that Palestinian universities lacked appropriate budgetary support for e-learning initiatives. Consequently, the study's recommendations was that managers in the executive-level of higher learning should set aside a budget for e-learning and motivate both staff and learners to use e-learning platforms.

Vershitskaya et al. (2020) did a study on the contemporary Russian universities' management. The study which aimed at investigating students, tutors and managements' readiness for active e-learning in Universities was titled elearning education and information technology's projections and barriers. The study sought to assess the level of preparedness by e-learning students and university management. Problem identification of the ICT as well as its prospects during the educational management's introduction of e-learning was the main objective.

The students were identified based on their direct involvement in e-learning activities. In total 19 information, 135 teachers, and communication technology (ICT)/e-learning specialists. The study findings indicated most e-learning objectives are inadequately achieved and that they are a part or complete failure. The reasons for failure include inadequate technical support, strategies of marketing that are insufficient and strategies of services that are poor. However, if well-managed e-learning has the potential for supporting initiatives for both blended and e-learning.

Hadullo et al. (2018) research aimed at identifying the factors influencing the quality of asynchronous e-learning platforms in developing nations. E-learning systems have several benefits which if applied can resolve the various challenges in education systems particularly in developing nations. However, the majority of e-learning initiatives in the developing world have not been successful. The study recommendations include that managers in charge of implementing LMS should undertake preemptive strategies to avoid system downtimes. Proper preparation will help the organization in achieving its learning goals.

Mbugua (2013) did a study to evaluate the kind of ODL support that is given by educational managers. It was revealed regarding the exposure of managers to distance learning modules, a noticeable number of them were lagging behind. Their lack of exposure is despite the many years of experience in the education sector. Murage (2013) pointed out inconsistencies raised by opinion leaders and academicians from the rising numbers of admissions that were not matched by supportive physical facilities for e-learning programs. Therefore, appropriate measures should be installed to ensure ICT

integration in education and e-learning processes goes hand in hand with the enrolment, training, retention of staff in order to attain learner objectives.

### 2.3.4 Communication strategy

Communication strategy in the study focused on strategic student-instructor communication and strategic marketing communication. For the usefulness of e-learning to be realized, responses on online efforts through online platforms need to be given by lecturers besides helping with learners' inquiries, issues, guidance on career, guidance on e-technological usage and guidance on online courses hence ease in their goals achievement (Vries et al., 2009). Marketing communication to the potential e-learners helps to create awareness of the courses available and how they would be of benefit to them hence the probability of increasing students' enrollment. According to Farid et al. (2018) university learning product being non-tangible in nature brought about the necessity of tailored advertising and campaigns to access identifiable markets with implementable strategies.

The most used strategies for advertisement for the attraction of potentially new learners by higher education institutions are direct-mail, tele-marketing as well as on campus visiting programs. Lately, universities have realized that websites are very essential in the learner recruitment process hence have designed very eye catching university websites for successful recruitment. A study by Lindbeck and Fodrey (2010) evidenced that 88% of potential university learners excluded universities from their list of options in the event that their surfing encounters were undesirable. In addition, an increase in enrollment was

evident in universities that heavily invested in website technologies for communication purposes with the potential learners within the millennial age group. Universities focusing on their main potential customers using tailored communications were advantaged to record higher recruitment success. The scholar further emphasizes that the generation of millennials does not pay any attention to non-customized communication (Lindbeck & Fodrey, 2010).

University websites were graded the highest by the potential learners citing it as the major spring of information about the institution and that most of those who had an interaction with the websites submitted their applications to be admitted (Gomez et al., 2016). Martin and Bolliger (2018) researched to investigate learners' perceptions regarding engagement strategies in the e-learning environment. The research methodology used involved administering an OESQ. The study findings revealed that students highly valued learner–instructor interaction strategies. According to Moore (1999), the three types of engagement included learner-to-instructor interaction, learner-to-learner interaction, and learner-to-content interaction. Nonetheless, Lear et al. (2010) observed that peers, instructors, and content interaction are critical for online students to become more active and engaged in their studies. Learners' interaction occurs in ways such as grading rubrics, emails, regular announcements, and reminders.

The engagements were divided into three broad spectrums the learner-learner, collaborative, and ice breaker categories. The study findings revealed that the learner-learner, icebreakers, and collaborative work categories were the most beneficial engagement strategies. In the learners-content category, students are exposed to guided

discussions and real-world projects. Therefore, the learners-content category is considered the most beneficial to research participants. As a result, learners-content engagement enhances motivation of the students to learn, increases the level of satisfaction of the student, improves performance of the student, and decreases the feeling of isolation in online courses.

Research conducted by various scholars such as Andersen et al. (2018), Kang and Im (2013), and Walker (2016) yielded similar results. All the scholars agreed that learner–instructor engagement is a vital predictor of learners' achievement and satisfaction in e-learning courses. Besides instructors have the opportunity to foster a sense of belonging and community within learners. Several ways instructors apply in fostering community and belonging in the students are through modelling online behaviour, demonstrating virtual presence, offering structured or guided virtual discussion. Furthermore, Martin et al. (2018), and Shackelford and Maxwell (2012) both contend that tutors promote a sense of community by offering encouragement and support, creation of alternative communication channels, setting study objectives, and timely feedback. Notably, excellent communication is key in promoting online student interaction.

Alternative lines of communication provide students with flexible ways of engagement in the learner–instructor interaction. Walker (2016) however notes that it is not automatic that all tools of communication are of value to the students, for a case in point, learners tend to dislike phone calls and chats. He further posits that students' perception of the sense of community and belonging is enhanced when learners can freely interact with instructors and gain access to their teachers through multiple channels. Ryle and Cumming

(2007) contend that although a teacher's presence is critical for the learning process different students have different learning needs. Therefore, each community of students should receive the most appropriate support that matches their learning needs. Institutions of higher learning must position themselves well to overcome challenges arising from a decrease in public funding, the ever-increasing cost of operations, and diversity in student communities.

Douglas (2005) remarks that increasingly there has been a rise in expectation and demand for new programs with universities forced to innovate to meet the new market demands. This implies that commercialization and entrepreneurialism have become increasingly important to learning institutions whose primary concern was confined to research teaching and offering services. Eckel and Grossman (2005) argues that institutions of higher learning seek to apply newer technologies as a means of appealing to the new student market and thus increase the number of enrolments.

Grudzewski et al. (2018) studied to assess the impact of virtual reality on attitude towards particular offers and message perception. The researcher's objective was to study the association of the acceptance of new technologies and the use of virtual reality in marketing communication. An empirical study was conducted to verify the stated hypotheses by using 150 participants in the experiment. The experiment analyzed participant engagement in using three marketing communication tools including video, printed advertisements, and VR (virtual reality) presentation with Oculus Rift hardware. The research findings revealed that VR technology significantly and positively influenced the technology involved, reception of the offer, and the entire presentation.

A study by Semuel et al. (2017) was aimed at understanding the customer's behavior from the netizen, defined as active digital media users who rely on internet technology for online shopping. The scholars found out and stated that most of the purchases triggered due to the strong intentions of consumers and desire for purchasing. Likewise, the digital business environment based on a variety of technologies with different features influences the consumers' attitude towards online purchases. The usage of online channels such as texting, chats has quick and rapid response along with other channels, which include widely usage and sharing information among groups of users such as social networks and online communities.

Chang and Tung (2008) acknowledge that the exchange of information between students and teachers about daily life activities and educational content is crucial for learning purposes. Hughes (2007) remarks that where tutors and learners can communicate virtually the experience has been valuable.

Serrano et al. (2013) argues that VR (virtual reality) technology is an IT solution that significantly impacts consumer perception and consumer behavior about products. VR (virtual reality) is defined as a computer-based technology that enables users to simulate a real-life environment through which the user can experience the feeling of being present (Serrano et al., 2013).

A study by Grudzewski et al. (2018) investigates the extent to which VR usage can influence of the way components of marketing messages are received by individuals and how VR can be applied as a marketing communication tool. The empirical study utilized

150 participants to verify the stated hypotheses. The study enquired how the selected participants took advantage of three marketing communication tools of Video, printed advertisements, and VR (virtual reality) presentation with Oculus Rift hardware. The research findings revealed that VR (virtual reality) technology significantly positively and impacted the technology involved, reception of the offer, and the entire presentation. Technology plays an important role in impacting how information is relayed to the consumer. Virtual reality provides marketers with new ways or opportunities to reach their customers (Raaij & Schepers, 2008). The VR technology allows consumers to access and experience products that are not available in real life for instance products that are still at the design stage of manufacturing.

Additionally, the technology also allows customers to experience products in a new dimension (Mazuryk & Gervautz, 1996). The technology landscape is rapidly changing and offering marketers great opportunities in using innovative ways of reaching their customers. According to Huang et al. (2016), VR technology enables firms to efficiently appraise their customers with the required product knowledge. Raaij and Schepers (2008) remark that VR technology enhances customers' life, therefore, advertisers need to embrace VR technology as a means of providing more value to their customers. (Jung, et al. 2016).

A study was carried out by Vershitskaya et al. (2020), which aimed at investigating students, tutors and managements' readiness for active e-learning in Universities and was titled elearning education and information technology's projections and barriers. The study sought to assess the level of preparedness by e-learning students and university

management. Problem identification of the ICT as well as its prospects during the educational management's introduction of e-learning was the main objective. The students were identified based on their direct involvement in e-learning activities. In total 19 information, 135 teachers, and communication technology (ICT)/e-learning specialists. The study findings indicated most e-learning objectives are inadequately achieved and that they are a part or complete failure. The reasons for failure include inadequate technical support, strategies of marketing that are insufficient and strategies of services that are poor. However, if well-managed e-learning has the potential for supporting initiatives for both blended and e-learning. Therefore, it is the role of universities to scan the environment in order to identify unique communication strategies that increase students' enrolment and learner goal achievement.

### 2.3.5 Change approach

Most efforts done to initiate changes have failed if we are to go by the several studies conducted in the field. Decker et al. (2012) assert that the rate of failure could be as high as 93%. Employees' resistance has been identified as the leading cause of failure when it comes to instituting organizational change. Aleksic et al. (2015) recounted the different problems for the integration, use, and development, ICT into educational management, teaching, and learning. One of the major problems identified by Aleksic et al. (2015) was the users' resistance to change where tutors are reluctant to use, or integrate information and communication technology into their everyday scholarly routines. The other set of e-learning problems identified include learners' resistance, low participation rate, poor students' performance, and high non-completion rate.

A study by Dobrovič and Timková (2017) sought to investigate factors that determine the execution of organizational changes yielded several findings. The study revealed that planning, reviewing and the implementation processes needed to institute organizational changes play an important role in determining the success or failure of the process. According to the author, challenges to change management emanate from improper planning, employees resistance, poor timing, lack of training for the employees, absence of checks and verification in the change process, and inappropriate corporate culture.

A study by Alrasheedi et al. (2016) focused on the management's view concerning vital success factors influencing mobile learning in institutions of higher learning. The research was undertaken based on educators' and students' perspectives. The research findings indicated that the change management practices, commitment to m-learning (mobile learning), and learning practices, were the critical factors determining the success of m-learning, from the perspective of university management.

The study by Abdalmenem et al. (2019) sought to ascertain methods of elearning and the part that they play in enhancing the efficacy of the performance of education. The study covered several universities such as the University of Ottawa, Suez Canal, Munster, Islamic, Al-Aqsa, and Al-Azhar University. Finding showed that there was a positive link between efficiency in educational performance and the adaption of e-learning strategies. It became apparent that Palestinian universities lacked appropriate budgetary support for e-learning initiatives. Consequently, the study's recommendation was that managers in the executive-level of higher learning should set aside a budget for e-learning and motivate both staff and learners to use e-learning platforms.

Dublin (2004) notes that to guarantee success a well-planned strategy of adoption of e-learning in universities is required. However, even great systems and e-learning strategies are not sufficient to guarantee success. The author adds that without well-thought-out and a clear execution strategy the adoption efforts will most certainly fail in achieving the universities objectives, students' needs, and the expectations set by management.

Buzzetto-More (2010) recounts the various developments that have emerged to support e-learning. Several tools are used to administer web services, publish the course content, facilitating communication, and in meeting the institution's daily requirements to support cost efficiency and learning flexibility. However, integration and installation of the system without addressing resistance to change through programs and strategic planning could result in failure in the use and implementation. Since most change initiatives fail because of employees' resistance it is crucial to enquire as to why the project is facing some resistance from the people involved (Sharma, 2010).

Scholars have outlined several possible reasons for resistance to the implementation of e-learning in institutions of higher learning. Kanwar et al. (2018) for instance argued that instructors may feel that technology will disrupt their career lives by giving them less control over their work than before. Yet some wrongly believe that technology would alter their teaching practices, lower the quality of courses. Others resist because of the uncertainty surrounding the ownership of material produced and intellectual property rights. Concerns have also been rife about the recognition or lack of it for the e-learning contents. A significant number lack requisite IT skills with others assuming that e-learning does not fit into their job description. Beckton (2009) argues, that tutors may object in fear

that it will increase their workload. Indeed e-learning increases the time needed to prepare learning content and the time spent with learners virtually. Salmon (2004) acknowledged that e-learning was a migration away from traditional pedagogy and instructors prefer familiar pedagogical approaches. Other factors highlighted by Beastall and Walker (2007) include conflict of interests, fear, misinterpretation, inadequate resources, lack of motivation, differences in evaluation and lack of commitment from both tutors and learners.

Sharma (2010) posit that change will not be accepted by all at the same level, at the same time. Consequently, different strategies should be adopted to suit the various tendencies to change. While some people are instant adopters, others may be long-term, short-term, or may never change at all (use e-learning in any form). It is, therefore, important to establish each type of person and create the best approach to overcome any possible resistance. According to Kanwar et al. (2018) to overcome resistance instructors need to receive training on e-learning skills, understand the need for change in their new roles; be fully involved in the development and design, thus ensuring their commitment and full involvement. In most organizations, senior level management expects loyalty and obedience from staff working under them without addressing their needs and wants and thus making it the greatest reason for resistance from employees Bhuasiri et al. (2012)

A study conducted at H.P. University in India to investigate the experience of implementing e-learning at the university revealed interesting results. The findings reinforced the need for institutions to understand how the competition will differ in the future and to reengineer itself accordingly. Sharma (2010) believe that a strategic plan for

the implementation of e-learning must be put in place taking into consideration the change management principles. If done appropriately the institution e-learning programme will yield successful results for learners and tutors as well as help the institution to gain a competitive advantage

According to Cândido and Santos (2019), the rate of failure for organizational change adoption ranges between 28% to a high of 93%. Therefore, institutions of higher learning in Kenya should adopt activities and programs likely to guarantee the smooth execution of e-strategies to reach students' objectives. An imperative for the long-term success in operations of any organization is the ability to adapt to market conditions and predict coming events.

### 2.3.6 Learner goals achievement

A study by Vitoria et al. (2018) examined the learner's perception on integration and adoption of E-learning system while using the TAM framework as a theoretical base. The findings indicated that all learners perceived that the E-learning module they took was useful and easy to use. The students not only emphasized they understood the information but also accessed and navigated documents effortlessly. Both ease of use perceived usefulness influences the attitude of learners towards using e-learning platforms. Furthermore, TAM was also applied in assessing teachers' perceptions of e-learning. The result of which indicated that coupled with a tutor's previous experience, the teacher's perception towards e-learning impacted behavior and how used it (Dookhan, 2018).

In a study involving Mauritian students in public universities, Dookhan (2018) investigated learner's e-learning attitude. The study showed that students attitude towards e-learning was positive. Nonetheless, the attitude improved with the perception that E-learning systems are easy to use and access. Furthermore, the study revealed that when used as a complementary method to traditional classes, e-learning increased classroom engagement with the lectures whilst improving students' experience. ICT being the backbone of online study, successful implementation of e-learning technology offers great contribution towards the achievement of flexible learning. Hadullo et al. (2018) research aimed at identifying the factors influencing the quality of asynchronous e-learning platforms in developing nations.

The study methodology involved a qualitative pre-study done at JKUAT. E-learning systems have several benefits which if applied can resolve the various challenges in education systems particularly in developing nations. However, the majority of e-learning initiatives in the developing world have not been successful. From the study, many factors affecting the e-learning activities' quality including design of the course, support for the content, social backing, characteristics of the learners, characteristics of the technicians, evaluation of the course and factors that are institutional related. The study recommendations include that managers in charge of implementing LMS should undertake preemptive strategies to avoid system downtimes. Proper preparation will help the organization in achieving its learning goals.

In sub-Saharan Africa, initiatives of e-learning has continued to face ICT-related infrastructural challenges, inadequate policies, and inadequate stakeholder's Virtual

Learning environments (VLEs) skills (Jorge et al., 2019). Furthermore, a widespread of e-learning mediations have failed at the pilot stage. This is due to failure to embrace an all-inclusive system approach leading to insufficient administrative and user training, technological maintenance, high unattainable expectations and unrealistic budget planning. Therefore, as emphasized by Jorge et al. (2019), e-learning in countries with insufficient resources appears like e-technology development is overwhelming rather than revolutionizing e-learning in the sub-Saharan Universities.

In East Africa which is one of the developing nations according to Niyigena et al. (2020), e-learners experience challenges of inadequate ICT training that would lead to higher productivity of e-learning resources which is the situation in developed countries during the last decade. Thus, the main factors that help to enhance fluency of ICT in East African region and generally other developing nations is very vital. In Kenya, e-learning delivery depends on well-established infrastructural initiatives which is way below the level of satisfaction (Kibuku et al., (2020). Ndung'u et al. (2019) asserts that one of the characteristics of ICT infrastructure and internet bandwidth access in Kenya is the clear disparity between the urban and rural areas which stands at 69%. However, there has been a diminishing of digital disparity save for the initiatives from the private and public institutions such as fibre optic infrastructure thus increased e-learning usage.

A study by Abdalmenem et al. (2019) sought to identify the e-learning methods and their role to enhance the efficiency of educational performance. The study covered several Palestinian universities. The study findings indicated that there was a significant correlation between efficiency in educational performance and the adaption of e-learning

strategies. It became apparent that Palestinian universities lacked appropriate budgetary support for e-learning initiatives. The study found out that senior level management staff at the- universities did not conform to the set standards of the institution. Consequently, the study recommended that senior-level management in Palestinian institutions of higher learning should set aside an e-learning budget and encourage both staff and learners to use e-learning platforms. Thus, e-learning managers need to ensure a smooth change transition and avail the necessary budget for e-strategy implementation for learner goals achievement.

Personalized learning according to Epignosis (2014) refers to adapting pedagogical strategies learning environments, and the curriculum, to learners' needs. Implying that a learning environment can be suited for each learner according to the form of content (audio, text, Video), theme, color, e-learning content. Some learners prefer multimedia content whereas, others can commit more to memory if the content is in text format but still other grasp content presented through interaction (Androniceanu, 2017). Brooks et al. (2015) adds that personalized e-learning also contains adaptive learning where adaptation is achieved for example by the way students perform in the preliminary test or answers during each course. Besides, depending on the students' performance and progress adaptation is most likely perceived in a different way. Consequently, it enables the instructor to skip some lessons if the teaching objectives have been met or repeat content that was not adequately grasped by learners.

The re-scheduling of learning units could not only be done at the end but also mid-way during classes. Various scholars concede that one of the main indicators of adaptive e-

learning may be derived from specific time that has been spent by learners to answer specific questions. Ultimately, adaptive learning modifies the lesson sequence and the degree of difficult questions based on how the student performs. Therefore, according to Chau et al. (2017) if personalized e-learning is a process based on observation, learning refers to adapting the content to preferences and abilities in a particular subject to enable meets student needs and achieves the learning goals.

One of the other ways of maintaining students' interest during a course according to a study by Kigozi et al. (2012) is through peer-to-peer assessment. Peer-to-peer assessment is where colleagues work through peer review processes. Students are motivated if at the end of the lesson, in quiz sections, they find out the number of students who answered correctly, the same, or incorrectly to the same question. Additionally, students improve their oral and written communication through evaluation activities followed by feedback. Therefore, all strategies and trends adopted in e-learning aim at engaging the students to maintain their interest.

The strategies help students to develop the skills and qualifications, achieve the established goals, required by the teaching goals, and thus attain their learning objectives. Successful e-learning technology, e-learning contents, e-learning administration and support, e-learning communication and change approach implementation gives a higher probability of achieving learner goals that includes flexible learning, timely course completion perceived satisfactory and cost reduction. Therefore, e-learning managers in the Kenyan universities ought to put in place programs and activities that will ensure smooth implementation of e-strategies to achieve learner goals.

### 2.3.7 Knowledge gap

In the quest to understand more about e-learning in the universities, various scholars have studied various topics about it as evidenced in the reviewed articles. Some of the areas studied included issues and challenges facing information technology implementation in higher education. Secondly, the influence of ICT e-learning applications among the undergraduate learners. Thirdly, e-learning strategy and the association on increasing the efficacy of educational performance. Fourth, the impact of ICT applications' use and increasing the ability of scientific research among members of the faculty. Fifth, the impact of the latest applications of e-learning technologies used in services delivery on improving research performance. Sixth, the public universities' status of e-learning, seventh, investigating the factors that influence the implementation of e-learning.

In addition, a study on the establishment of the obstacles hindering the success of Open and Distance Learning programs was done among others. From the literature review, studies have been conducted on one or two variables used in this study but none has combined the six variables, as it is the case in the study. Our study therefore seeks to establish the association between e-learning strategy and learner goals achievement in Kenyan universities with change approach giving a moderating effect on this relationship.

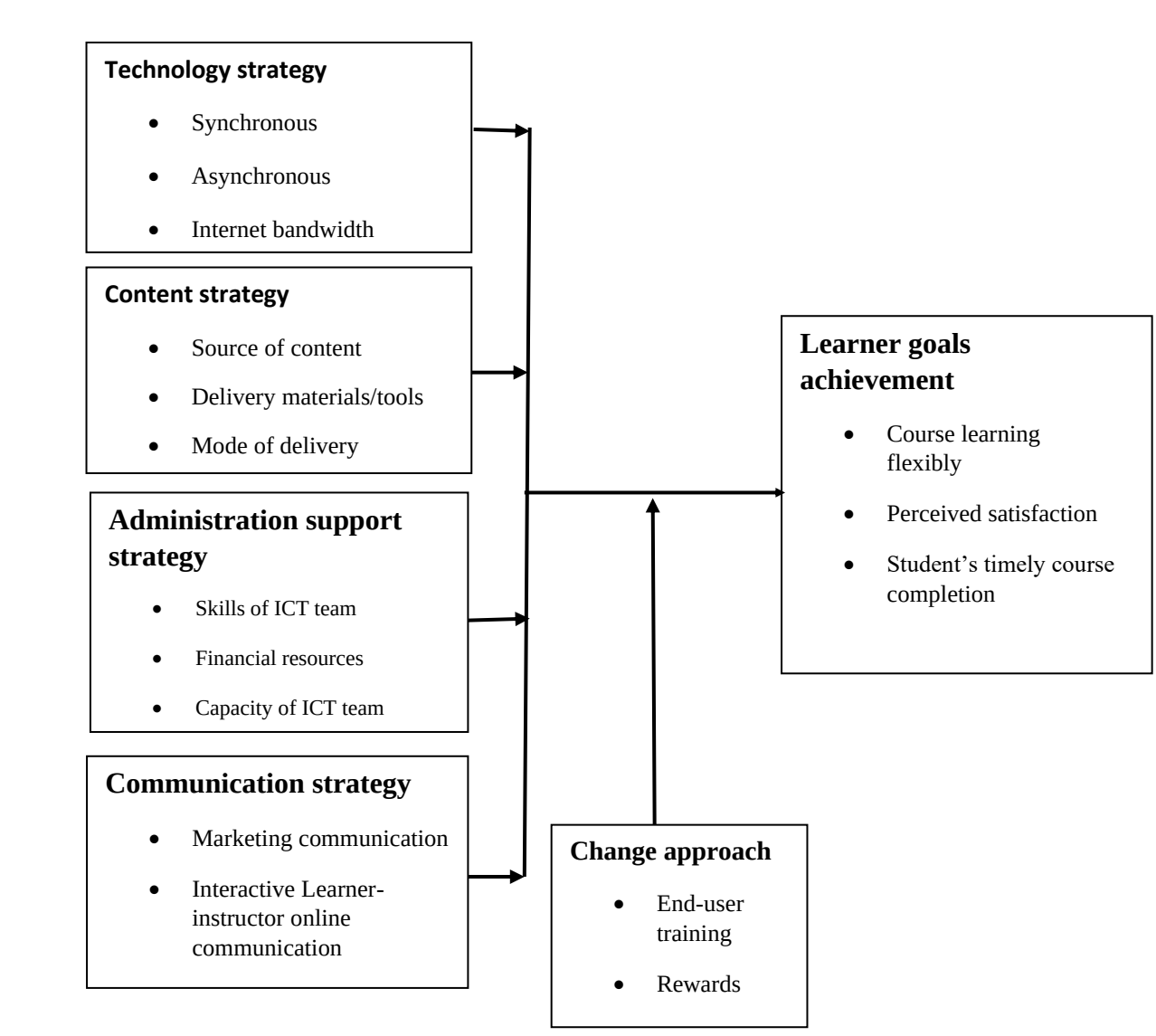
## 2.4 Conceptual Framework

A conceptual framework is described as a research tool useful in developing understanding and awareness of the situation under investigation and to further communicate it to the study audience (Kombo & Tromp, 2009). The author adds that a

conceptual framework consists of principals and broad ideas from the relevant subject of inquiry applied in structuring successive presentations.

**Figure 2.2**

*Conceptual Framework*



# CHAPTER THREE

# METHODOLOGY

## 3.1 Introduction

Chapter three focused on research design as well as research methodology used in the study. It starts with the research philosophy, followed by design of the research, population to be studied, sample, technique of obtaining the sample, instruments used to collect data, procedures used to collect data, pre-study, analysis of data and presentation, the statistical models, the methods of estimation and hypothesis testing.

## 3.2 Research Philosophy

According to Mcnabb (2008), the three research philosophies include positivism, interpretivism and realism. Additionally, the three models assist researchers to gain insights on the research topic. As Creswell and Creswell (2018) recommends, positivist research philosophy was used in the study. The assumption of positivist epistemology is that legitimate knowledge claims are only derived from the scientific methods. Another assumption is that the researcher is nonpartisan hence ruling out the possibility of affecting the outcomes of the study. Creswell and Creswell (2018) argues that the philosophy seeks to explain associations by identifying reasons that affect outcomes of the study thus providing prediction and generalization foundations. Therefore, this contributes to adequate reasons to conclude that it is the best for this study because only facts derived from scientific method made legitimate knowledge claims and generalizations

## 3.3 Research design

The section describes the methodology and methods of research that have been selected by the researcher (Dawson, 2002). According to Kothari (2010), defined research design as the act of setting out the environment for data collection and analysis to make it relevant to the purpose of research. A researcher ought to choose a suitable research design which includes adequate questions for research and hypothesis, applicable variables, adequate participants' sample, settings of the research, methods of collecting data and methods used for analyzing data (Lavrakas, 2008).

Descriptive research design described by Lavrakas (2008) as a systematic method of research for data collection from individuals' sample by use of instruments composed of questions that are closed ended and open ended, observations as well as interviews was used. It is used widely to gather bulky volume of data from a sample representing individuals that have been sampled from target population. Precise revelation of a particular individual's characteristics, situation or a certain group is the main aim of descriptive survey design thus, the best for this study (Kothari 2010).

Furthermore, this design is extensively used in acquiring data that is used in the evaluation of current approaches and provides the basis for making decisions. Nyerere (2016) used descriptive survey design that sought to get more insights on open, distance and e-learning in Kenyan educational institutions. Descriptive survey design therefore becomes the most suitable method based on the above clarifications, explanations. Inferential statistics was also used as it draws conclusions that cannot be derived from descriptive statistics.

## 3.4 Target Population

A population, also known as the universe in the field of inquiry refers to the total items under study (Kothari, 2010; Zikmund et al., 2010). Furthermore, population is also defined as a collection of individual elements that could either be finite or infinite as defined by Lavrakas (2008) while Polit and Beck (2018) describes population as the total group of "things" that a researcher is interested in. The entirety of those meeting the requirements qualifications that have been established has also been referred to as population (Polit & Beck, 2018).

There are a total of 74 universities licensed to operate in Kenyan universities (Commission for University Education [CUE], 2018) out of which 16 are offering e-learning programs, according to telephone inquiry made to the 74 universities. Relevant information was also gathered from the universities' official websites. There are 16 universities offering e-learning and licensed to operate in Kenya according to the CUE 2018 data in Kenya, with a total of 29608 participants, comprising of 26761 e-learners and 2847 e-lecturers. The unit of analysis was the e-lecturers and e-learners because they both interact more with the e-learning system that uses currently implemented e-strategies hence best suited to give feedback on its success.

**Table 3.1**

*Target Population*

| Category | Number |
|---|---|
| e-Students | 26,761 |
| e-lecturers | 2,847 |
| **Total** | **29,608** |

Source: CUE (2018)

## 3.5 Sampling Technique and Sample Size

According to Lavrakas (2008) when a researcher draws a subdivision of elements from the entire population, in the context of survey research it is known as a sample. A sample has also been referred to as a units collected from the universe to represent it (Kombo & Tromp, 2009; Kothari, 2010). According to Orodho and Kombo (2002), an infinite section of a statistical population whose characteristics are subject to study for the purpose of gaining information on the entire population is referred to as a sample. A study that is inadequately defined does not have the authority to declare a false null hypothesis rejected making it a waste of resources such as time and money hence a sample becomes very vital (Gerstman, 2013). In addition, collecting too much data during a study is also a waste of time and resources. It is more practical and of less wastage of resources if data is collected from a sample in comparison to data collection from the whole population as recommended by Polit and Beck (2003). Nevertheless, carrying out a study from a sample tags along its risks in that most likely it does not adequately depict the entire population's characters, behaviors and beliefs. An additional observation was made that despite the sample collection methods being enormous and dependent on various factors such as cost, determination and expertise, measurement of their insufficiency is by the same

representativeness of the selected sample principle. The observation further points out that qualitative study's sample quality is dependent on the representativeness of the sample in the population in respect with the study variables.

In the study, the sample consisted of 351 e-lecturers and 394 e-students. Slovin's formula was used to determine the sample size from the population in the study. Slovin's formula was used to determine the sample as it allows researchers to obtain a sample from the population with anticipated accurateness and size as follows:

$N / (1 + Ne^2) = n$

Number of samples=n, Total population=N, Error of tolerance=e

Confidence level of 95% and at 0.05 level of significance was used. In the study, population (N) was 29608

n= N/1+Ne2

**E-learners' sample**

N=26761

= 26,761

1+ (26761x 0.052)

=394 respondents

**E-lecturers' sample**

N=2847

= 2847

1+ (2847x0.052)

=351 respondents

**Table 3.2**

*The Distribution of e-Learning Respondents in Kenyan Universities*

| **Respondents** | **Sample size** |
|---|---|
| e-students | 394 |
| e-lecturers | 351 |
| **Total** | **745** |

Stratified random sampling, a method suitable once sub-populations contained in the total population differ, was used for identifying the sample size in the 16 universities individually. The sampling method is therefore suitable for the study as each university out of the 16 universities vary from each other. To arrive at the sample of e-learners in each university, it was calculated as follows (e.g. University A's total e-students (4024)/26761x 100%=15%), the percentage that was arrived at is then multiplied by the total e-student's sample (in this case it is 15% x394=59.1). Likewise, substitute the figures to get the e-lecturers sample in each university.

**Table 3.3**

*List of 16 Kenyan universities offering e-learning and corresponding e-students and e-lecturers sample from proportionate sampling*

| **University** | **Total enrolled e-students** | **% of total e-students** | **Sample size** | **Total e-lecturers** | **% of total e-lecturers** | **Sample size** |
|---|---|---|---|---|---|---|
| A | 4024 | 15 | 59 | 450 | 15.8 | 56 |
| B | 3705 | 13.8 | 54 | 175 | 6.14 | 22 |
| C | 2700 | 10.1 | 40 | 110 | 3.86 | 14 |
| D | 3158 | 11.8 | 46 | 420 | 14.75 | 52 |
| E | 3350 | 12.5 | 49 | 528 | 18.5 | 65 |
| F | 1500 | 5.6 | 22 | 78 | 2.73 | 10 |
| G | 740 | 2.77 | 11 | 105 | 3.69 | 13 |
| H | 1225 | 4.58 | 18 | 98 | 3.44 | 12 |
| I | 1190 | 4.4 | 17 | 78 | 2.73 | 10 |
| J | 1060 | 3.96 | 16 | 66 | 2.31 | 8 |
| K | 1145 | 4.27 | 17 | 83 | 2.91 | 10 |
| L | 684 | 2.55 | 10 | 105 | 2.9 | 10 |
| M | 720 | 2.69 | 11 | 361 | 12.68 | 44 |
| N | 540 | 2.02 | 8 | 65 | 2.28 | 8 |
| O | 370 | 1.38 | 6 | 45 | 1.58 | 5 |
| **P** | 650 | 2.4 | 10 | 80 | 2.8 | 10 |
| **Total** | **26761** | **100%** | **394** | **2847** | **100%** | **351** |

Source: University's Registrar Academic Affairs (2021)

## 3.6 Data Collection Instruments

Questionnaires composed of structured questions were used to collect primary data. Respondents were requested to indicate their extent of agreement to a concept being measured in a Likert type of questions in the questionnaire. The Likert scale questions were at 5 levels namely: 1=strongly disagree, 2=disagree 3=neutral, 4=agree, 5= strongly agree. Likert scales were chosen as the most applicable scales as they are very reliable, gives greater data volume than other scales and better approximates than the normal response curve (Cooper & Schindler, 2011). Sources of secondary data included relevant and up to date information from research papers, studies done previously and Journals that have been published online

## 3.7 Data Collection Procedure

Due to COVID-19 pandemic, the researcher was not able to physically issue questionnaires to the respondents in the course of data collection. To deal with this limitation, respondents' mobile numbers and email addresses were obtained from the registrar academic then questionnaires and the introductory letters from the university and the National Commission for Science, Technology and Innovation (NACOSTI) were administered to all the respondents through emails and received back through the same medium. To increase the rate of response, the researcher followed up on respondents using the same communication medium. The researcher was very cautious in ensuring that all questionnaires administered to the respondent were returned back by keeping a register of them for accountability.

## 3.8 Pre-Test Study

Pre-testing of data collection tools was done before they were administered to ascertain their reliability and validity. The research tools were tried out on the selected respondents similar to the ones that were to be researched on. The results were analyzed, patterns and major differences noted. Areas such as clarity of the questionnaire, suitability of the tool content to the respondent, time needed, possible obstacles that could arise were looked into. Thereafter, the tools were revised accordingly. Pre-testing ensured that the tools yielded consistent results, correct wording and clarity of sentences, unambiguous, and that the responses were unbiased (Marshall & Rossman, 2011).

The data obtained was tested for adequacy and workability of the research instruments and determined what resources were required (Kumar, 2010). Hilton (2015) asserts that pre-tests are meant for showing that the questions were answered as it was intended. To get rid of ambiguity in the questions, a pre-test was done using a small number of respondents who were chosen using simple random sampling, a sampling method that ensures that there is an equal chance for each individual unit to be selected (Orodho, 2009). Furthermore, the method is the least likely to cause biasness and it also offers the most representativeness of the population in totality. Through its statistical properties, pre-test, based on the results obtained allows researchers to deduce inferences about the population.

Testing of the reliability of the questionnaires was done by conducting a pre-test before undertaking the final data collection. Tests were administered to 10 e-lecturers and 22 e-students and to satisfy reliability tests Cronbach alpha correlation coefficient and a

Statistical Package for Social Sciences (SPSS) was applied. The researcher issued 745 respondents with questionnaires and 619 of them were received back 745 questionnaires were issued to the respondents out of which only 619 were returned thus obtaining a return rate of 82.1% that was partially credited to half-finished, not returned and unfilled questionnaires. Wimmer and Dominick (2013) supports a rate of return of 21-70% as sufficient, gives assurance for accuracy, reduces biasness and as acceptable for the questionnaires that are self-administered hence 82.1% is acceptable in this study. According to Saunders (2011) 30-40% rate of response is sufficient, and Sekaran (2010) recommends 30% as sufficient. The rate of response for the study was adequate based on these arguments. Procedures of collecting data that included allowance of sufficient time to the respondents for questionnaire completion and making follow-up calls and sending emails for hastening questionnaire filling by respondents ensured a high response rate. Services of five research assistants were engaged for effectiveness and efficiency in data collection.

### 3.8.1 Reliability of Research Instrument

Creswell and Creswell (2018) argues that research instruments are termed to be reliable when same researcher or another researcher is in a position to get the identical anticipated facts as the original instrument anticipated to do in the same target population implying that there is consistency in the results' production. In the study, reliability was achieved by clearly defining the sample population and 32 respondents from 1 university from Nairobi County strictly filling the questionnaires. Cronbach's alpha was used for reliability analysis to test reliability of questionnaires and data item's internal consistency.

As recommended by Kipkebut (2010) Cronbach's alpha coefficient that ranges between 0 and 1 was used to measure data reliability. Kothari (2010) commends that a scale of 0.70 or above is adequate.

The results indicated that e-learning technology had an Alpha coefficient of 0.809; e-learning content of 0.686, e-learning Administration support of 0.704 and e-learning communication of 0.750, Learner goals achievement of 0.773 and change approach of 0.846. In the study, all constructs depicted Cronbach's Alpha values that are greater than the value of 0.70 which has been recommended as acceptable hence the study was confirmed as acceptable.

### 3.8.2 Validity of Research Instrument

Cable and DeRue (2002) describes validity as the level to which instruments accurately measures what it was intended to or the truthfulness of the instruments used in the research. A pre-test was done to establish the questionnaires' validity. Content and criterion validity were considered in the study as recommended by Oso and Onen (2005). Units covering. Once there is a common agreement from literature that learner goals achievement has measured all features of variable meant for measurement then a variable is deliberated to have content validity. Golafshani (2003) explains that the extent to which a specific variable forecasts or associates with other variables describes criterion validity. Once the multiple correlation coefficients of all the independent variables and dependent variable have been measured, criterion related validity of conceptual framework is deemed

to have been determined. Therefore, a pre-test was done to establish the questionnaires' validity before they were issued for the main study.

### 3.9 Data Analysis and Presentation

According to Mutai (2000), data analysis involves establishing which variable to examine and what relationships to explore. Before doing analysis of data, the researcher processed the raw data that assisted in doing away with the problems associated with unprocessed data. Once the researcher had adequately corrected errors that could have affected analysis of data, a coding scheme was formulated, summarized and analysis done. Electronic storage was used to store coded data for short and long-term periods after which a SPSS software version 23 was used to analyze data. Descriptive and inferential statistics comprising of tables of frequency distribution and percentages were used by the researcher. Additionally, advanced statistical techniques were considered particularly binary regression analysis to establish relationships among variables and to provide a detailed data description. The findings were presented in tables, percentages and test statistics where applicable and accompanied by relevant explanations.

#### 3.9.1 Statistical Model

According to Gujarati (2004), the logistic regression model is selected due to the nature of the dependent variable where the model is applicable if the dependent variable is a categorical variable with only two categories (e.g. e-learning strategy implementation has influence on learner goals achievement or e-learning strategy implementation does not influence learner goals achievement), hence binary logistic regression was appropriate. The decision criteria was that for e-learning strategy implementation to influence learner

goals achievement, the P-values should be < 0.05 while if e-learning strategy implementation does not influence learner goals achievement, the p-values should be >0.05. Binary Logistic regression model is preferred because of its comparative mathematical simplicity and more meaningful interpretation of odds ratio

Binary logistic regression model was thus specified as follows:

$L_i = \ell n(\frac{P}{1-P}) = \boldsymbol{\beta}_0 + \boldsymbol{\beta}_1 X_1 + \boldsymbol{\beta}_2 X_2 + \boldsymbol{\beta}_3 X_3 + \boldsymbol{\beta}_4 X_4 + \boldsymbol{\mu}$ Where:

Pi / (1 − Pi) is simply the odds ratio -the ratio of the probability that e-learning strategies (i = 1, 2, 3, 4) will influence learner goals achievement to the probability that it will not influence learner goals achievement.

Yi or Li log of odds for "Learner goals achievement"

$\boldsymbol{\beta}_0$ Constant

$X_1$ Technology

$X_2$ Content

$X_3$ Administration support

$X_4$ Communication

$\mu$ Stochastic term (error)

$P$ probability that a learner achieves his/her goals

$\beta_1$, $\beta_2$, $\beta_3$, and $\beta_4$ represent units change in the log of odds ratio as a result of a unit change in the respective independent variable and it is the proportion of positive effect.

**Decision Making Criteria**:

*e-learning strategy implementation influences learner goals achievement ($p < 0.05$) e-learning strategy implementation does not influence learner goals achievement ($p > 0.05$)*

## 3.10 Ethical Consideration

Ethics refer to the ability to make judgement between right and wrong behaviors. Furthermore, Minja (2009) pointed out that ethics can also be described as norms that govern human behavior. Information relevant to the study is of strategic importance hence confidentiality was greatly important. Thus, respondents' names were concealed. Additionally, Specific individual's responses were maintained as strictly confidential by coding information from individuals affiliated to various universities. Use of humiliating and inappropriate questions was shunned by the researcher (Mugenda & Mugenda, 2003). Targeted universities authorized the process of data collection from their premises while respondents voluntarily made an informed decision to participate in the study. The precautions enriched the respondents' willingness and objectivity to participate.

# CHAPTER FOUR

# RESULTS AND DISCUSSION

## 4.1 Introduction

Presented in this chapter are the results and findings of the study. Additionally, study sample's general characteristics, descriptive analysis results, results and findings for the bivariate and multivariate (binary logistics regression variable) of the dependent and independent variables were comprehensively discussed. Model's results and interpretations on its strength were written. More so, study findings as outlined in the methodology of research were comprehensively written. Likert scale questions that were formulated based on objectives of the study were interpreted on three levels; Disagree=1, Neutral=2, Agree=3 after disagree and strongly disagree were combined to be interpreted as "Disagree" while Agree and strongly agree was combined to read "Agree" and Neutral remained the same. The results and findings were presented on tables of frequency and written interpretations.

## 4.2 Rate of Response

The researcher issued 745 respondents with questionnaires and 619 of them were received back 745 questionnaires were issued to the respondents out of which only 619 were returned thus obtaining a return rate of 82.1% that was partially credited to half-finished, not returned and unfilled questionnaires. Wimmer and Dominick (2013) supports a rate of return of 21-70% as sufficient, gives assurance for accuracy, reduces biasness and as acceptable for the questionnaires that are self-administered hence 82.1% is acceptable in this study. According to Saunders et al. (2011) 30-40% rate of response is sufficient, and

Sekaran (2010) recommends 30% as sufficient. The rate of response for the study was adequate based on these arguments. Procedures of collecting data that included allowance of sufficient time to the respondents for questionnaire completion and making follow-up calls and sending emails for hastening questionnaire filling by respondents ensured a high response rate. Services of five research assistants were engaged for effectiveness and efficiency in data collection.

## 4.3 Reliability Analysis

Creswell and Creswell (2018) argues that research instruments are termed to be reliable when same researcher or another researcher is in a position to get the identical anticipated facts as the original instrument anticipated to do in the same target population implying that there is consistency in the results' production. In the study, reliability was achieved by clearly defining the sample population and 32 respondents from 1 university in Nairobi County strictly filling the questionnaires for the pre-test. Cronbach's alpha was used for reliability analysis to test reliability of questionnaires and internal consistency of data items. As recommended by Kipkebut (2010) Cronbach's alpha coefficient that ranges between 0 and 1 was used to measure data reliability.

**Table 4.1**

*Reliability of Research Instruments*

| Variables | Cronbach's Alpha | Total Items |
|---|---|---|
| e-learning Technology | 0.809 | 5 |
| e-learning Content | 0.686 | 5 |
| e-learning Administration support | 0.704 | 5 |
| e-learning Communication | 0.750 | 5 |
| Learner goals achievement | 0.773 | 4 |
| Change Approach | 0.846 | 4 |

Source: Survey Data (2021)

From the results, e-learning technology got a coefficient of Cronbach's Alpha of 0.809; learning content of 0.686, e-learning administration support of 0.704 and e-learning communication of 0.750, Learner goals achievement of 0.773 and change approach 0.846. Kothari (2010) commends that a scale of 0.70 or above is adequate thus confirming the study as being reliable.

## 4.4 Demographic Information

Presentation of study sample's gender and e-status characteristics has been done in this section to give insights on the same. Demographic characteristics are important as they consist of Respondents' study behavior that justifies respondents' suitability in the kind of study carried out. These characteristics such as gender and e-status in the Kenyan universities are important for ascertaining experience and level of knowledge necessary for assessment of the influence of e-learning strategies on learner goals achievement with change approach being the moderating factor.

### 4.4.1 Gender of the Respondents

Gender of an individual can influence one's behaviour or attitude towards a phenomenon consequently influencing his or her values and perceptions on e-learning. Therefore, it is necessary to investigate the respondents' gender. Accordingly, respondents' gender that included e-students and e-lecturers in the Kenyan Universities was studied. Their responses were as follows:

**Table 4.2**

*Gender of the Respondents*

| **Responses** | **Frequencies** | **Percentages** |
|---|---|---|
| Female | 280 | 42.2 |
| Male | 339 | 54.8 |
| Total | 619 | 100 |

Source: Research Data (2021)

Study examined whether respondents were male or female and the results indicated that out of the 619 respondents, 339(54.8%) of them were male while 280(42.2%) were female. Gender of an individual can influence one's behaviour or attitude towards a phenomenon consequently influencing his or her values and perceptions on e-learning.

### 4.4.2 e-Status of the Respondents

The study examined whether respondents were e-lecturers or e-students. Responses The results were as shown on table 4.3:

**Table 4.3**

*e-Status of the Respondents*

| Responses | Frequencies | Percentages |
|---|---|---|
| e-students | 318 | 51.4 |
| e-lecturers | 301 | 48.6 |
| **Total** | **619** | **100** |

Source: Research Data, (2021)

Study examined whether respondents were e-students or e-lecturers and the results indicated that out of the 619 respondents, 318 (51.4%) of them were e-students while 301 (48.6%) were e-lecturers.

## 4.5 Frequency Analysis of Study Variables

In this section, results of the frequency analysis of the study variables as well as discussions of the findings have been discussed. Presentation of descriptive statistics and frequencies were discussed and thereafter that of inferential statistics was done. Likert scale questions' responses were coded with numerical values for easier analysis of data. Likert scale questions that were formulated based on objectives of the study were interpreted on three levels; Disagree=1, Neutral=2, Agree=3 after strongly disagree were combined to be interpreted as "Disagree" while Agree and strongly agree was combined to read "Agree" and Neutral remained the same. The results and findings on all the main variables and their constructs were presented on tables of frequency and written interpretations.

## 4.6 e-learning Technology Strategy

This strategy entails the deliberate identification of individual university's technological strengths and opportunities in the internal and external environment to enable e-learners to achieve their goals. A study by Akbari et al. (2013) classified approaches of offering e-learning content in an e-learning classroom as one, Synchronous referring to an approach that is live streamed, real time, usually planned, expedited and learning oriented interaction. The second approach is asynchronous which is limited by time, location and not real time. The two methods were of focus under technology strategy.

The effect of e-learning technology strategy on learner goals achievement in the Kenyan universities was determined. The researcher sought to understand whether Internet bandwidth, e-learning technologies which includes synchronous, asynchronous and LMS are available and in practice and to what extent they have helped in the learner goals achievement. This was important because ICT infrastructure being the backbone of e-learning and if universities fail to deliberately do a SWOT analysis to identify the most effective and efficient e-learning technologies and use them, they may end up failing in the achievement of learner goals and vise-versa.

**Table 4.4**

*Summary of Frequency Analysis of e-learning Technology Strategy's Constructs*

| e-learning technology Strategy | Disagree | Neutral | Agree | Total |
|---|---|---|---|---|
| university has strategically invested in quality internet bandwidth Recoded | 475(76.7%) | 37 (6.0%) | 107(17.3%) | 619(100%) |
| The university has a clear strategy on how to invest and improve on synchronous e-learning technology Recoded | 51 (8.2%) | 234(37.8%) | 334 (54%) | 619 (100%) |
| The university has invested on creating quality asynchronous e-learning technology Recoded | 396 (64%) | 80 (12.9%) | 143(23.1%) | 619 (100%) |
| e-programme is managed and supported by the best and most up-to-date technology Recorded | 114(18.4%) | 234 (37.8) | 271(43.8%) | 619 (100%) |
| university strategized to have in place an up to date LMS Recoded | 319(51.5%) | 53 (8.6%) | 247(39.9%) | 619 (100%) |

Source: Research data (2021)

The study sought to examine the effect of e-learning Technology strategy on learner goals achievement in the Kenyan universities and summary of frequency analysis showed that majority, 475 representing (76.7%) of the respondents disagreed that the university has strategically invested in quality internet bandwidth while a smaller number of 107 respondents being (17.3%) were in agreement with the statement. Similarly, out of a total

of 619 respondents, 51 being 8.2% disagreed that the university has a clear strategy on how to invest and improve on synchronous e-learning technology while an overwhelming 334 respondents representing 54% agreed with the statement. A remarkable 396 respondents being 64% of the total number disagreed that the university has invested on creating quality asynchronous e-learning technology whereas 143 representing 23.1% were in agreement. The frequency analysis also showed that 114 respondents which is 18.4% of the total did not agree with the statement that the best and most up to date technology managed and supported the e-programme despite the fact that the majority 271 being 43.8% of the total number were in agreement. Furthermore, majority of the respondents; 319 signifying 51.5% differed with the statement that university strategized to have in place an up-to-date LMS while 247 which is 39.9% of the total agreed with the statement. More comprehensive interpretation of the e-learning technology constructs has been done as follows:

### 4.6.1 The University has Strategically Invested in Quality Internet Bandwidth

The study investigated whether universities have invested in quality internet bandwidth. The findings were as indicated on table 4.4. The findings show that 76.7% disagreed that the university has invested in quality internet bandwidth. Only 17.3% agreed that the university has invested in quality internet bandwidth. This shows that despite internet bandwidth being very essential in e-learning for the achievement of learner goals, a very high percentage of the universities have not invested in it. This translates to a high probability of failure in the achievement of learner goals. This finding concurs with that of Mwaniki et al. (2020) in his study examined the challenges hindering ODeL's success

in Kenyatta University. Findings were that both learners and instructors faced major challenges in the area of insufficient funds for buying gadgets, inadequate internet connectivity and unsatisfactory exposure to computers in addition to ICT technology. Similarly, both student and lectures lacked finances to buy ICT gadgets and gain access to reliable internet connectivity (Nielit & Thanuskodi, 2020)

Pandita (2017) study on internet as a transformational agent mainly focused on the speed of growth of the internet and its penetration in many parts of the world. In his findings, about 49.63% constituting nearly 3.73 billion people across the globe have the internet's accessibility and ability to use it on a daily basis in their daily activities. Furthermore, America being the global largest continent registered the highest internet infiltration at 88.12%. This was followed by Europe and Oceania that attained77.42% 68.06% respectively.

Generally, it was observed that continents with the highest population lagged behind when it came to internet penetration hence the conclusion that Africa and Asia are the weakest links in internet penetration and usage globally owing to their high population. This study finding that 76.7% disagreed that Kenyan universities have invested in quality bandwidth agrees with the finding that internet penetration in Africa stands at 27.73%, the lowest globally (Pandita (2017). This poses the potential to expose Kenyan universities to a great risk of inability to achieve learner goals as very high.

### 4.6.2 The University has a Clear Strategy on how to invest and improve on Synchronous e-learning Technology

The study sought to determine whether universities have a clear strategy on how to invest and improve on synchronous e-learning technology. Synchronous e-learning technology provides real-time interaction between e-student and e-lecturer thus it was vital to establish the extent to which Kenyan universities are incorporated it in the e-learning process. From table **7**, very few respondents (8.2%) disagreed that the university has a clear strategy on how to invest and improve on synchronous e-learning technology. A higher response of 54% agreed with the statement that the university has a clear strategy on how to invest and improve on synchronous e-learning technology was recorded.

The findings contradicts sentiments made by Nyerere (2016) who argued that In Kenyan universities, asynchronous mode of delivery that is characterized by inadequate interaction, collaboration and communication is still commonly used. Nyerere (2016) noted that only asynchronous approaches of delivery and collaboration were employed on LMS by universities in Kenya where e-instructors uploaded unit contents on online portals in form of summaries, examinations and course works. Subsequently, online learners then downloaded them from the university's portal. Since the system has not been planned for interactive team work, learners revise the uploaded notes and do the examinations in isolation. Thus, asynchronous methods are described by their insufficient interactions, communications and inadequate teamwork. Therefore, it is evident that Kenyan universities should purpose to deliberately scan their environment, identify and define competitive source of e-learning content whether bought or self-developed, develop

delivery materials to be used and the mode of delivery that promotes student-instructor interactivity. This should be greatly influenced by resources and modern e-learning technology available for successful implementation to achieve learner goals.

### 4.6.3 The University has invested on Creating Quality Asynchronous e-learning Technology (e.g., Audio, Video, CD-ROMs, Uploaded Course Modules)

e-learning technology being the backbone of e-learning is likely to affect e-learning strategy identification and implementation thus affecting learner goals achievement positively or negatively depending on its adoption process in the Kenyan Universities. Respondents were asked the extent to which they agreed that their university has invested on creating quality asynchronous e-learning technology. This was important in the quest to investigate the extent to which Kenyan universities are using quality asynchronous e-learning technology. The results on table **7** indicate that higher responses (64%) disagreed that their university has invested in creating quality asynchronous e-learning technology. 23.1 % of the respondents agreed that their university has invested in creating quality asynchronous e-learning technology. This means that very few (23.1%) of the universities have embraced the use of quality asynchronous e-learning processes. The findings concur with that of Ssekakubo et al. (2011), who pointed out that many students in the developing world are not exposed to ICT.

### 4.6.4 e-Directors ensure that e-Programme is Managed and Supported by the Best and Most up-to-date Technology available

Data was collected on the extent to which respondents agreed that e-directors ensure that e-programme is supported and managed by the best available and most up to date technology. The results contained in table **7**, shows that 18.4% disagreed with the statement that e-directors ensure that the e-programme is managed and supported by the best available and most up-to-date technology. On the other hand, 43.7% agreed that e-directors ensure that the e-programme is supported and managed by the best available and most up to date technology.

### 4.5.5 The University Strategized to have in place an up-to-date LMS (e.g., Moodle) for Successful e-learning

LMS comprises of different features that allow e-lecturers to share course contents and engage in interaction with their learners both synchronously and asynchronously. The most widely adopted LMS are KEWL, Sakai, Blackboard, and Moodle. Respondents gave answers to a question on the extent to which their university strategized to have in place an up-to-date LMS (e.g. Moodle) for successful e-learning. The findings as tabulated in table **7** indicated that 51.5% disagreed that the university has strategized to have in place an up-to-date LMS (e.g., Moodle) for successful e-learning. Other respondents, 39.9% agreed that the university has strategized to have in place an up-to-date LMS (e.g., Moodle) for successful e-learning. The finding corresponds to that of Ssekakubo et al. (2011), who emphasized that most LMS adoption carried out in Sub-Saharan countries

end up as a partial or total failure. The failure could be attributed to inadequate or unsustainable strategies that have not been properly implemented. This could be a recipe for failure to achieve learner goals in Kenyan universities.

### 4.7 e-learning Content Strategy

e-learning institutions should deliberately scan their environment, identify and define a competitive source of e-learning content whether bought or self-developed, develop delivery materials to be used and the mode of delivery that promotes student-instructor interactivity. This should be greatly influenced by resources and modern e-learning technology available for successful implementation to achieve learner's goals.

Martin and Bolliger (2018) study to investigate learners' perceptions concerning online learning environment's engagement strategies. The study findings revealed that students valued lecturer-learner interaction strategies. The three kinds of engagement strategies inherent in effective online courses according to Moore (1999) included interaction between student-to-instructors, student-to-content interaction, and student-to-learner interaction. Students rated, email, regular announcements grading rubrics and reminders, as most beneficial in this category. In yet another category known as the learner-learner category, collaborative work and icebreakers topped the rank in terms of strategies that are beneficial. Lastly, in the learner–content category the most beneficial aspects to respondents were structured or guided discussions and real-world projects. Additionally, Mtebe and Raisamo (2014) argue that to meet intended educational benefits instructors should develop quality course content appropriate to learners' abilities knowledge, and skills. The study aimed at establishing the effect of content strategy variables on learner

goals achievement. Mtebe and Raisamo (2014) further posited that quality and appropriate course work maximizes the use of LMS, and increases learners' satisfaction and thus allowing students to achieve learning goals.

**Table 4.5**

*Summary of Frequency Analysis of e-learning Content Strategy's Constructs*

| e-learning Content Strategy | Disagree | Neutral | Agree | Total |
|---|---|---|---|---|
| Learning modules developed and uploaded on LMS are of good quality recoded | 265(42.8%) | 190(30.7%) | 164(26.5%) | 619 (100%) |
| e-directors periodically assess and up-date the quality of course content recoded | 223(36.0%) | 136(22.0%) | 260(42.0%) | 619 (100%) |
| the university has invested in competitive content development recoded | 270(43.6%) | 135(21.8%) | 214(34.6%) | 619 (100%) |
| There is a good selection of up-to-date course online delivery systems recoded | 204(33.0%) | 183(29.6%) | 232(37.5%) | 619 (100%) |
| Programme changes are made based on faculty, student in-put, and market needs recoded | 259(41.8%) | 127(20.5%) | 233(37.6%) | 619(100%) |

Source: Research data (2021)

The study sought to establish the effect of e-learning content strategy on learner goals achievement in the Kenyan universities and summary of frequency analysis indicated that 295 respondents out of 619 being 42.8% disagreed that learning modules developed and

uploaded on LMS are of good quality whereas a lower number of 164 representing 26.5% agreed with the statement. When questioned on the extent to which they agreed with the statement that e- learning directors periodically assessed and up-dated quality of course content, 223 respondents representing 36% did not agree with the statement despite the fact that a slightly higher number of 260 which is 42% agreed with it. Likewise, 270 respondents being 43.5% differed that university has invested in competitive content development while 214 of them signifying 34.6% were in agreement with the statement. In a similar way, 204 being 33% of respondents disagreed that there is a good selection of up-to-date course online delivery systems while 232 a percentage of 37.5% were in agreement. On another statement that programme changes were made based on faculty, student in-put and market needs, majority, 259 representing 41.8% differed with it while 233 which is 37.6 % were in agreement with it. A comprehensive interpretation of individual constructs of e-learning content strategy has been made as follows:

### 4.7.1 Learning Modules that are Developed and Uploaded on LMS are of Good Quality and Content Developed Encourages Learner-Student Interactivity

The study examined the extent to which respondents agreed that learning modules that are developed and uploaded on LMS are of good quality content and content developed encourage learner-student interactivity. This was important as it sought to find out the quality of content that is developed and uploaded and whether it encourages learner-student interactivity. The results were as indicated in table 4.5 as follows: 42.8% disagreed that learning modules that are developed and uploaded on LMS are of good quality content and content developed encourage learner-student interactivity. 26.5% of the respondents

agreed that learning modules that are developed and uploaded on LMS are of good quality content and content developed encourages learner-student interactivity.

The findings corresponded with findings from a study done by Makokha and Mutisya (2016). In the two separate studies, both authors observed that which pointed out that most modules uploaded on the learning management systems, were lacking in interactivity and low in quality. It also lacked interactivity and that public universities' e-learning was in and early stage. Both studies further emphasized that only a small percentage of e-students and e-lecturers still use e-learning to date. Martin and Bolliger (2018) administered an online) to study the students' perceptions about interactive strategies in an environment that offers learning online. The results revealed that the student's most preferred engagement strategy among Moore's (1999) three interaction categories was the learner–instructor engagement. Emails, grading rubrics reminders, and regular announcements, were rated by learners as the most advantageous in this category.

### 4.7.2 e-Directors Periodically Assessed and Updated Course Content quality Because Of Technology Dynamism and Changing E-Learner's Demands

The study investigated the periodic update and quality assessment of course content by e-directors. The regular update was recognized as being important because of the technology dynamism and changing e-learner's demands. In the survey conducted participants were expected to indicate the extent to which they agree with the research question. The findings are illustrated in table 4.5. More specifically, the results showed that 36% disagreed that the course content was periodically assessed and updated by e-directors to ascertain if it conformed to the required quality standards. As earlier stated, the periodic

assessment of content is necessitated by technological dynamism and changing e-learner demands. On the other hand, 42% agreed that e-directors periodically assess and update the quality of course content because of technological dynamism and changing e-learner demands. A study titled “E-learning in the 21st Century” undertaken by Garrison (2017) also yielded similar results. Garrison (2017) utilizing a Community of Inquiry Framework acknowledged that continuous improvement of the e-materials and e-content was an essential strategy for the management to maintain a high quality of online learning. The data gathered in the study showed that the e-materials in the form of online modules and the desire to develop more e-content through technology servers was the foremost reason for changing initiatives of e-learning.

### 4.7.3 The university has invested in competitive content development that encourages learner-student online interactivity

The results showed that 43.6% disagreed that the university has invested in competitive content development that encourages learner-student online interactivity. 34.6% agreed that the university has invested in competitive content development that encourages learner-student online. The findings corresponded with findings from a study done by Makokha and Mutisya (2016). In the two separate studies, both authors observed that which pointed out that most modules uploaded on the learning management systems, were lacking in interactivity and low in quality. Martin and Bolliger (2018) examined learners' perceptions about strategies of engagement in online learning. The study revealed that out of the three Moore’s (1999) interaction categories the most preferred strategy by students was learner–instructor engagement strategy. Learners rated emails, regular

announcements, grading rubrics and reminders, as the best advantageous in the learner–instructor category. Nonetheless, collaborative work and icebreakers were the most beneficial in the learner-learner category of engagement strategies. Lastly, in the learner–content category the most beneficial to respondents was discussions that were guided and projects that are practical.

### 4.7.4 There is a Good Selection of up-to-date Course Online Delivery Systems for Delivering Lessons either synchronously or asynchronously

Up-to-date course online delivery systems for delivering lessons either synchronously or asynchronously if well selected ensure learner-instructor interactivity, communication, and collaboration. Research participants indicated the extent to which they agreed that their university has a good selection of up-to-date courses online delivering lessons either synchronously or asynchronously. Results were indicated in table 8. The study findings showed that 33% disagreed that there is a good selection of up-to-date course online delivery systems for delivering lessons either synchronously or asynchronously. 37.5% of the respondents agreed that there is a good selection of up-to-date course online delivery systems for delivering lessons either synchronously or asynchronously. This shows that many of the Universities (37.5%) are using outdated course online delivery systems to deliver lessons. This leads to inadequate instructor-learner interaction and communication during online course delivery. This corresponds with the findings by Nyerere (2016) who argued that In Kenyan universities, asynchronous mode of delivery that is characterized by inadequate interaction, collaboration and communication is still commonly used. Nyerere (2016) noted that only asynchronous approaches of delivery and collaboration

were employed on LMS by universities in Kenya where e-instructors uploaded unit contents on online portals in form of summaries, examinations and course works. Subsequently, online learners then downloaded them from the university's portal. Since the system has not been planned for interactive team work, learners revise the uploaded notes and do the examinations in isolation. Thus, asynchronous methods are described by their insufficient interactions, communications and inadequate teamwork. Therefore, it is evident that Kenyan universities should purpose to deliberately scan their environment, identify and define competitive source of e-learning content whether bought or self-developed, develop delivery materials to be used and the mode of delivery that promotes student-instructor interactivity. This should be greatly influenced by resources and modern e-learning technology available for successful implementation to achieve learner goals.

### 4.7.5 Programme Changes are made based on Faculty, Student input, and Market Needs

Participants expressed their perception indicating their level of agreement to the research questions that "changes to programs are made based on faculty, student input, and market needs". The results were as indicated in table 4.5. More specifically the findings indicate that 41.8% disagreed with the sentiments that changes to programs are based on market needs, faculty, and student inputs. In contrast, 37.6% agreed that programs changes were initiated based on market needs, faculty, student input. This implies that there are very few universities that consider stakeholder's needs while changing their programs hence market needs go unmet which would eventually reduce their market share. This concurs

with Benavides et al. (2020), emphasis that there is a need for the universities to respond to changing needs and expectations in the new student markets, to position well in a technologically dynamic environment. Furthermore, according to Eckel and Grossman (2005) institutions of higher learning must address the greater market forces such as a decline in public funding along with other challenges like increasingly diverse student bodies, changing needs and expectations, rising expenses, and heightened demand for new unique programs and services.

## 4.8 E-learning Administration Support Strategy

Administration support strategy is key in the adoption of ICTs to become sustainable and effective in e-learning and thus should be derived from the university's unique capabilities and competencies informed by information gathered from SWOT analysis. Mwaniki et al. (2020) recommends that universities need to come up with e-strategies that strengthen learner support mechanisms to address the institutional challenge.

Thus, Kenyan universities ought to have appropriate strategies in place, for instance, ensure frequent refresher courses for the ICT team to keep upgrading their technical skills, invest in capacity building for the ICT team in terms of numbers and technical support skills. Additionally, allocation of a budget for administrative support for both students and instructors is very vital in learner goals achievement.

**Table 4.6**

*Summary of Frequency Analysis of e-learning Administration Support Strategy's Constructs*

| e-learning administration support Strategy | Disagree | Neutral | Agree | Total |
|---|---|---|---|---|
| Frequent training and refresher courses for ICT team has helped them to offer top notch support services Recoded | 292(47.2%) | 133(21.5%) | 194(31.3%) | 619(100%) |
| There is adequate support for on-line student registration, billing and payment-system Recoded | 213(34.4%) | 140(22.6%) | 266(43.0%) | 619 (100%) |
| There is enough funds allocated to the administration support office for e-student and e-instructors support Recoded | 284(45.9%) | 149(24.1%) | 186(30.0%) | 619 (100%) |
| The university has hired enough administration support team Recoded | 211(34.1%) | 199(32.1%) | 209(33.8%) | 619 (100%) |
| The university has empowered administration support staff with adequate skills Recoded | 269 (43.4%) | 138 (22.3%) | 212 (34.2%) | 619 (100%) |

Source: Research Data (2021)

To determine frequency analysis of e-learning administration support strategy, the research participants were required to reveal the extent to which they agreed with statements on each individual construct. Results were that 292 out of a total of 619, representing 47.2% of the participants disagreed with the opinion that frequent training and refresher courses for the ICT team have helped them to offer top-notch support

services while 194 being 31.3% agreed with the statement. Similarly, 213 which is 34.4% did not agree with the statement that there is adequate support for online student registration, billing, and payment system whereas the majority, 266 signifying 43% agreed with the statement. Likewise, 284 respondents depicting 45.9% were not in agreement with the statement that there are enough funds allocated to the administrative support office for e-student and e-instructors support while those in agreement were 186 representing 30%. Further, the majority number of 211 respondents representing 34.5% disagreed that the university has hired enough administration support team while 209 signifying 33.8% agreed with the view. Similarly, 269 representing 43.4% disagreed with the sentiment that the university has empowered administration support staff with adequate skills while 212 respondents depicting 24.2% were not in agreement. Individual constructs interpretation is as below:

### 4.8.1 Frequent Training and Refresher Courses for ICT Team has helped them to offer top notch support services

Frequent training and refresher courses for the ICT team equip them with skills and knowledge necessary for top-notch support services to both e-students and e-lecturers. Research participants were required to express the extent to which they agreed with the opinion that frequent training and refresher courses for the ICT team have helped them to offer top-notch support services. The results portrayed in table 9 reveal that most of the participants (47.2%) did not agree with the statement that frequent training and refresher courses for the ICT team have helped them to offer top-notch support services. However, 31.3% agreed with the statement that frequent training and refresher courses for the ICT

team have helped them to offer top-notch support services. The results reinforced findings from similar research conducted by Dwyer (1991) which suggested that administrators must be competent in the use of the technology for the implementation of ICTs to be effective and sustainable. Dwyer (1991) added that administrators should broadly possess technical, pedagogical, administrative, and financial know-how in addition to social dimensions of ICTs in education.

### 4.8.2 There is Adequate Support for Online Student Registration, Billings, and Payment-System because Administration Support Staff have been well trained

The selected research participants were required to express the level of agreement on a research question stating that "there is adequate support for on-line student registration, billing, and payment-system because the administrator in charge of support has been well-trained". This was to shed light on whether universities have in place adequate support for online students. Responses are as in table 9 show that 34.4% disagreed that there is adequate support for on-line student registration, payment, and billing, system because the administrator in charge of support has been well trained. The majority of the respondents representing 43% agreed that there is adequate support for online student registration, payment, and billing, systems because the administrator in charge of support has been well trained. The findings show that many universities (43%), have trained their e-learning administration support staff on how to handle online student registration, billing, and payment systems. This is in line with Mwaniki et al. (2020), who agrees that delay in the delivery of modules meant for study and learner support services that are not adequate including inadequately designed course resources, insufficient online support services for

the learners including dwindling efforts to support learners' online units form the greatest e-learning programe's challenges. He recommends that universities ought to device e-strategies aimed at strengthening learner enablement mechanisms to address the institutional challenge.

### 4.8.3 There is Enough Funds allocated to the Administration Support Office for e-Student and e-Instructors Better Support

The funding allocated to the university's e-learning administrative office is necessary for better e-instructors and e-learners' better support. To find out the status of this kind of funding in the universities, selected research participants were asked to indicate the level by which they agreed with the sentiment that "there are enough funds allocated to the administrative support office for e-student and e-instructors better support". Results were recorded in table 9 and indicated that 45.9% disagreed that there is enough funds allocated to the administrative support office for e-student and e-instructors better support while 30% agreed that there are enough funds allocated to the administrative support office for e-student and e-instructors better support. The findings concur with that of a study done by Abdalmenem et al. (2019) on Palestinian universities which revealed that top managers failed to provide adequate budgets for e-learning. It was recommended from the study that the high-ranking managers at Palestinian universities need to motivate their staff members to continuously use e-learning strategies and provide sufficient budgetary support for e-learning activities.

### 4.8.4 University has Hired Enough Administration Support Team, a Strategy of ensuring e-learning Support Services round the Clock

A university without adequate e-learning Administration staff capacity in terms of numbers may not be able to provide e-learning support services round the clock. Therefore, the study aimed at finding out from the respondents whether university has hired enough administration support team, a strategy of ensuring e-learning support services round the clock. Their responses on this construct are as recorded in table 9. Results revealed that 34.1% of the respondents disagreed that the University has hired enough administration support team, a strategy of ensuring e-learning support services round the clock. Almost an equal number of respondents representing 33.8% agreed that the University has hired enough administration support team, a strategy of ensuring e-learning support services round the clock. The findings are in agreement with that of Murage (2013) who highlighted a rising concern from stakeholders over increased enrolment levels not supported by physical facilities in Kenyan ODL programs. Consequently, to ensure that ICTs integration in teaching and learning process go hand in hand with the recruitment, training, retaining, and retention of required employees, appropriate strategies ought to be in place in order to achieve learner goals.

### 4.8.5 The University has Empowered Administration Support Staff with Adequate Skills to ensure Effective and well Supported Campus Network

Universities ought to ensure that e-learning administrators are knowledgeable in the technological usage. In addition, e-learning administrators should broadly possess

technical, pedagogical, administrative, and financial know-how in addition to social dimensions of ICTs in education. Issues for instance, installation, operation, maintenance, network administration and security are included in the technical support, which makes it an important element in the ICT integration and implementation in education system.

Results revealed that 43.4% disagreed that the University has empowered administration support staff with adequate skills to ensure effective and well supported campus network. On the other hand 34.2% agreed that the University has empowered administration support staff with adequate skills to ensure effective and well supported campus network. The results reinforced findings from similar research conducted by Dwyer (1991) which suggested that administrators must be competent in the use of the technology for the implementation of ICTs to be effective and sustainable. Dwyer (1991) added that administrators should broadly possess technical, pedagogical, administrative, and financial know-how in addition to social dimensions of ICTs in education.

## 4.9 e-learning Communication Strategy

e-learning Communication strategy in the study focused on strategic student-instructor communication and strategic marketing communication. Usefulness of e-learning to the e-learners is enhanced when tutors assist students with queries, guidance in career, e-learning technology use guidance and course guidance by making use of online-environment hence ability to achieve learner goals. The findings showed that among Moore's (1999) three interaction categories, learners valued learner–instructor engagement strategies the most. Students rated, email, regular announcements grading

rubrics and reminders, as most beneficial in this category. In yet another category known as the learner-learner category, collaborative work and icebreakers were the most beneficial engagement strategies. Lastly, in the learner–content category the most beneficial aspects to respondents were structured or guided discussions and real-world projects. Nonetheless, peers, instructors, and interaction of content are critical for online students to become more active and engaged in their studies. Learners' interaction occurs in ways such as grading rubrics, emails, regular announcements, and reminders (Lear et al., 2010).

The engagements were divided into three broad spectrums the learner-learner, collaborative, and ice breaker categories. The study findings revealed that the learner-learner, icebreakers, and collaborative work categories were the most beneficial engagement strategies. In the learners-learners content category students are exposed to guided discussions and real-world projects. Therefore, the learners-content category is considered the most beneficial to research participants. As a result, learners-content engagement enhances motivation of the students to learn, increases the level of satisfaction of the student, improves performance of the student, and decreases the feeling of isolation in online courses.

Research conducted by various scholars such as Andersen et al. (2018), Kang and Im (2013), and Walker (2016) yielded similar results. All the scholars agreed that learner–instructor engagement is a vital predictor of learners' achievement and satisfaction in e-learning courses. Besides instructors have the opportunity to foster a sense of belonging and community within learners. Several ways instructors apply in fostering community

and belonging in the students are through modelling online behaviour, demonstrating virtual presence, offering structured or guided virtual discussion. Furthermore, Martin et al. (2018), and Shackelford and Maxwell (2012) both contend that tutors promote a sense of community by offering encouragement and support, creation of alternative communication channels, setting study objectives, and timely feedback. Notably, excellent communication is key in promoting online student interaction. Excellent communication is required in enhancing learners' engagement and satisfaction in online studies. Multiple communication channels promote better levels of instructors-students engagement.

Walker (2016) however notes that it is not automatic that all tools of communication are of value to the students, for a case in point, learners tend to dislike phone calls and chats. He further posits that students' perception of the sense of community and belonging is enhanced when learners can freely interact with instructors and gain access to their teachers through multiple channels. Therefore, when instructors are accessible through multiple channels learners developed confidence in the system. Ryle and Cumming (2007) argue that although the facilitator's presence is critical, each different learners' community may have varying needs as far as interaction with the instructor is concerned.

Marketing communication to the potential e-learners helps to create awareness of the courses available and how they would be of benefit to them hence the probability of increasing students’ enrollment. Due to the rapid expansion of the software that are already in place, companies have experiences opportunities to be in lucrative markets

hence their ability for new solutions' usage as great marketing tools for communication and advertisement to the users. According to Van Kerrebroeck et al. (2017), marketers have an opportunity to reach out to consumers in new ways through virtual reality. Huang et al. (2016), and Van Kerrebroeck et al. (2017) agrees that marketing communication and customers' level of the products on offer would be very beneficial to universities that embrace VR technology. In addition, Jung (2016) emphasizes that businesses and advertising agents need to reach to customers who have gained value from VR technology that improves their lives to determine new opportunities of more value addition to the customers. According to Farid et al. (2018) university learning product being non-tangible in nature brought about the necessity of tailored advertising and campaigns to access identifiable markets with implementable strategies. The most used strategies for advertisement for the attraction of potentially new learners by higher education institutions are direct mail, tele-marketing as well as on campus visiting programs. Lately, universities have realized that websites are very essential in the learner recruitment process hence have designed very eye catching university websites for successful recruitment.

**Table 4.7**

*Frequency Analysis of e-learning Communication Strategy*

| e-learning Communication Strategy | Disagree | Neutral | Agree | Total |
|---|---|---|---|---|
| The university has put in place a marketing strategy by investing in e-learning TV, social media and brochures Recoded | 293 (47.3%) | 127 (20.5%) | 199 (32.1%) | 619 (100%) |
| There is a software for interactive online communication between e-instructor and e-learner Recoded | 224 (36.2%) | 148 (23.9%) | 247 (39.9%) | 619 (100%) |
| university organizes educational events by preparing a series of lectures and seminars Recoded | 270 (43.6%) | 148 (23.9) | 201 (32.5%) | 619 (100%) |
| There is a university's website where all the events and e-courses are advertised Recoded | 217 (35.1%) | 150 (24.2%) | 252 (40.7%) | 619 (100%) |
| The university has created a strategic relationship with the public through materials for prospective students Recoded | 274 (44.3%) | 139 (22.5%) | 206 (33.3%) | 619 (100%) |

Source: Research Data (2021)

e-learning Communication strategy in the study focused on strategic student-instructor communication and strategic marketing communication. The results showed that 47.3% disagreed that the university has put in place a marketing strategy by investing in e-learning TV, social media and colourful brochures promotions, road shows, university

open days. On the other hand, 32.1% agreed that the university has put in place a marketing strategy by investing in e-learning TV, social media and colourful brochures promotions, road shows, university open days. Likewise, Results indicated that 36.2% of study participants disagreed with the statement that there is a software for interactive online communication between e-instructor and e-learner on career advice, e-learning technology usage and feedback. Majority, 39.9% were in agreement that there is a software for interactive online communication between e-instructor and e-learner on career advice, e-learning technology usage and feedback. On investigating another construct, results showed that 43.6% disagreed that the university organizes educational events by preparing a series of lectures and seminars for prospective students while 32.4% were in agreement that the university organizes educational events by preparing a series of lectures and seminars for prospective students.

On finding out whether universities were using websites for advertising their services, results were evident that 35.1% disagreed that there is a university's website where all the events and e-courses are advertised. Majority (40.7%) of the respondents agreed that there is a university's website where all the events and e-courses are advertised. Similarly, investigation results on whether the universities have created a strategic relationship with the public majority (44.3%) did not agree with the statement that the University has created a strategic relationship with the public through materials for prospective students, conference attended by public and experts appearing on the media. 33.3% were in agreement that the University has created a strategic relationship with the public through materials for prospective students, conference attended by public and experts appearing

on the media. More detailed interpretations on each e-learning communication constructs are as follows:

### 4.9.1 The University has put in place a Marketing Strategy by investing in e-learning TV, Social Media and Colourful Brochures Promotions, Road Shows, University Open Day.

Marketing communication to the potential e-learners helps to create awareness of the courses available and how they would be of benefit to them hence the probability of increasing students' enrollment. Respondents indicated the level of agreement with the statement; university has a marketing strategy by investing in e-learning TV, social media and colourful brochures promotions, road shows, university open day. This was important as the study through this construct aimed at finding out whether universities have in place marketing strategies to boost their enrollment. The results as indicated in table 10 shows that 47.3% disagreed that the university has put in place a marketing strategy by investing in e-learning TV, social media and colourful brochures promotions, road shows, university open days. On the other hand, 32.1% agreed that the university has put in place a marketing strategy by investing in e-learning TV, social media and colourful brochures promotions, road shows, university open days. Considering the findings that 47.3% did not agree with the statement contradicts the findings of Herren et al. (2011) who argued that the most used strategies for advertisement for the attraction of potentially new learners by higher education institutions are direct-mail, tele-marketing as well as on campus visiting programs.

Having a higher number of respondents disagreeing does not concur with the findings of Grudzewski et al. (2018) study to assess the impact of virtual reality on attitude towards particular offers and message perception. The researcher's objective was to study the relationship between the acceptance of new technologies and the use of virtual reality in marketing communication. An empirical study was conducted to verify the stated hypotheses by using 150 participants in the experiment. The experiment analyzed participant engagement in using three marketing communication tools including video, printed advertisements, and VR (virtual reality) presentation with Oculus Rift hardware. The research findings revealed that VR technology significantly and positively influenced the technology involved, reception of the offer, and the entire presentation.

Kaplan and Mazurek (2018) posits that delivery of information to the end user has made technology to become a vital package. Due to the rapid expansion of the software that are already in place, companies have experiences opportunities to be in lucrative markets hence their ability for new solutions' usage as great marketing tools for communication and advertisement to the users. According to Van kerrebroeck et al. (2017), marketers have an opportunity to reach out to consumers in new ways through virtual reality. Huang et al. (2016), and Van Kerrebroeck et al. (2017) agrees that marketing communication and customers' level of the products on offer would be very beneficial to universities that embrace VR technology. In addition, Jung (2016) emphasizes that businesses and advertising agents need to reach to customers who have gained value from VR technology that improves their lives to determine new opportunities of more value addition to the customers.

### 4.9.2 There is a Software for Interactive Online Communication between e-Instructor and e-Learner on Career Advice, e-learning Technology usage and Feedback

Marketing communication to the potential e-learners helps to create awareness of the courses available and how they would be of benefit to them. Therefore, it is necessary for universities to have a software for interactive online communication between e-instructor and e-learner that enables e-instructors to offer e-learners career advice, assist in e-learning technology usage knowledge and for online mutual feedback. Results indicate that 36.2% of the respondents disagreed that there is a software for interactive online communication between e-instructor and e-learner on career advice, e-learning technology usage and feedback. Majority, 39.9% were in agreement that there is a software for interactive online communication between e-instructor and e-learner on career advice, e-learning technology usage and feedback. The findings concur with that of Vries et al. (2005) who recommended that usefulness of e-learning to the e-learners is enhanced when tutors assist students with queries, guidance in career e-learning technology use guidance and course guidance by making use of online-environment hence ability to achieve learner goals.

Martin and Bolliger (2018) study to investigate learners' perceptions concerning online learning environment's engagement strategies. The study findings revealed that students valued lecturer-learner interaction strategies. The three kinds of engagement strategies inherent in effective online courses according to Moore (1999) included interaction between student-to-instructors, student-to-content interaction, and student-to-learner

interaction. Students rated, email, regular announcements grading rubrics and reminders, as most beneficial in this category. In yet another category known as the learner-learner category, collaborative work and icebreakers were the most beneficial engagement strategies. Lastly, in the learner–content category the most beneficial aspects to respondents were structured or guided discussions and real-world projects. Nonetheless, Lear et al. (2010) observed that peers, trainers, and content interaction are critical for online students to become more active and engaged in their studies. Learners' interaction occurs in ways such as grading rubrics, emails, regular announcements, and reminders.

The engagements were divided into three broad spectrums the learner-learner, collaborative, and ice breaker categories. The study findings revealed that the learner-learner, icebreakers, and collaborative work categories were the most beneficial engagement strategies. In the learners- learners content category students are exposed to guided discussions and real-world projects. Therefore, the learners-content category is considered the most beneficial to research participants. As a result, learners-content engagement enhances motivation of the students to learn, increases the level of satisfaction of the student, improves performance of the student, and decreases the feeling of isolation in online courses.

Research conducted by various scholars such as Andersen et al. (2018), Kang and Im (2013), and Walker (2016) yielded similar results. All the scholars agreed that learner–instructor engagement is a vital predictor of learners' achievement and satisfaction in e-learning courses. Besides instructors have the opportunity to foster a sense of belonging and community within learners. Several ways instructors apply in fostering community

and belonging in the students are through modelling online behaviour, demonstrating virtual presence, offering structured or guided virtual discussion. Furthermore, Martin et al. (2018), and Shackelford and Maxwell (2012) both contend that tutors promote a sense of community by offering encouragement and support, creation of alternative communication channels, setting study objectives, and timely feedback. Notably, excellent communication is key in promoting online student interaction. Multiple communication channels promote better levels of instructors-student engagement.

Walker (2016) however notes that it is not automatic that all tools of communication are of value to the students, for example, learners tend to dislike phone calls and chats. The author further argues that direct interaction when students and instructors engage makes the students to feel that they are in the right place. Therefore, when instructors are accessible through multiple channels, learners developed confidence in the system. Ryle and Cumming (2007) argue that although the facilitator's presence is critical, each different learners' community may have varying needs as far as interaction with the instructor is concerned.

### 4.9.3 The University Organizes events by preparing a series of Lectures and Seminars intended for prospective Students

Educational events organized by universities such as seminars and lectures on various topics aimed at attracting prospective students hence an important strategy for increasing enrollment. Study participants were expected to express the level of agreement on a sentiment that the “University organizes educational events by preparing a series of

lectures and seminars intended for prospective students". Results as indicated on the table 10 showed that 43.6% disagreed that the "University organizes educational events by preparing a series of lectures and seminars intended for prospective students" while 32.4% with the statement. The findings contradicts with that of Herren et al. (2011) who argued that one of the main strategies that colleges use to get new prospecting students in their institutions is the use of the on-campus visit programs. Thus the need to improve on marketing strategies for learner goals achievement.

### 4.9.4 There is a University's Website where all the Events and e-Courses are advertised

Institutions websites plays an important role especially when it comes to recruitment of new students. An attractive website that is also easy to navigate is therefore essential for the success in the recruitment process. Prospective and college-bound students eliminate a college from consideration based on a negative browsing experience they have the institutions website. Lindbeck and Fodrey (2010) claim that a significant number estimated at 88% of prospective students ruled out the enrolment into a university if they had a negative experience in the institution's website. Universities using web technology to reach out to prospective students experienced primary sources of information gathered about a university. The contact that these students made with a college was to submit an application for admission and this was particularly common with the millennial generation (Gomez et al., 2016). The selected research participant were requested to state the extent to which they agreed with the opinion that "there is a university's website where all the events and e-courses are advertised". This was important as it aimed at finding out if

universities are using websites for advertising their services. Results from table 10 was evident that 35.1% disagreed that there is a university's website where all the events and e-courses are advertised. Majority (40.7%) of the respondents agreed that there is a university's website where all the events and e-courses are advertised. The findings are in agreement with that of Herren et al. (2011) who argues that high education was a service that is intangible in nature. Therefore, universities are compelled to have targeted promotions and marketing for easily identified customers through actionable strategies. Furthermore, telemarketing, direct mail, on-campus visit programs and websites are some of the methods that have been frequently used by colleges as marketing strategies to attract new students (Valencia-Arias et al., 2019)

### 4.9.5 The University has created a Strategic Relationship with the Public through Materials for Prospective Students, Conferences attended by Public and Experts Appearing on the Media

By creating strategic relationships with the public through strategically availing materials for prospective students, organizing conferences attended by public and appearing on the media, universities get to create awareness of their services. Consequently, this increases the likelihood of higher students' enrollment. Respondents answered a question on their level of their agreement on a statement that the University has created a strategic relationship with the public through materials for prospective students, conference attended by public and experts appearing on the media. Results as recorded in table 10 indicated that majority (44.3%) did not agree with the statement that the University has created a strategic relationship with the public through materials for prospective students,

conference attended by public and experts appearing on the media. 33.3% were in agreement that the University has created a strategic relationship with the public through materials for prospective students, conference attended by public and experts appearing on the media. This implies that only few universities have a strategic relationship with the public that would make the institution more visible to the prospective students. Having fewer (33.3%) respondents agree on the statement opposes the findings of Grudzewski et al. (2018) study to assess the impact of virtual reality on attitude towards particular offers and message perception. The researcher's objective was to study the relationship between the acceptance of new technologies and the use of virtual reality in marketing communication. An empirical study was conducted to verify the stated hypotheses by using 150 participants in the experiment. The experiment analyzed participant engagement in using three marketing communication tools including video, printed advertisements, and VR presentation with Oculus Rift hardware. The research findings revealed that VR technology significantly and positively influenced the technology involved, reception of the offer, and the entire presentation. Consequently, there is need for Kenyan Universities to put more effort on creating a strategic relationship with the public.

## 4.10 Learner Goals Achievement

Learner goals achievement as conceptualized in the study was considered as achieved if there was one, e-learning course learning flexibility whereby they can learn from anywhere, anytime and at their own pace facilitated by the integration of all the e-learning strategies' elements, two, perceived satisfaction which accounts for personal experience

with all the e-learning strategies namely; e-learning content, technology, administration and support, and communication and finally the ability to complete courses undertaken within the time frame stipulated in the course programme. Therefore, the study objective was to establish the level to which learner goals have were achieved in the Kenyan universities.

**Table 4.8**

*Learner Goals Achievement*

| Learner Goals Achievement | Disagree | Neutral | Agree | Total |
|---|---|---|---|---|
| The E-learning mode of study provides learning flexibility Recoded | 335 (54.1%) | 74 (12.0%) | 210 (33.9%) | 619 (100%) |
| I have always completed my e-learning courses at the appropriate time Recoded | 163 (26.3%) | 181 (29.2%) | 275 (44.4%) | 619 (100%) |
| Due to learning flexibility, e-learning has helped me to save money from reduced costs Recoded | 299 (48.3%) | 112 (18.1%) | 208 (33.6%) | 619 (100%) |
| e-learning technology, quality e-learning content, mode of delivery, and administrative support collectively assisted to achieve goals Recoded | 393 (63.5%) | 226 (36.5%) | 0 (0%) | 619 (100%) |

Source: Research Data (2021)

To understand more about learner goals achievement as conceptualized in the study, the study aim was to assess the level by which learner goals have been achieved in the Kenyan universities by investigating each construct of this variable. The results from table 11 show

that 54.1% disagreed that the e-learning mode of study provides learning flexibility while 33.9% agreed that the e-learning mode of study provides learning flexibility. Similarly, results indicated that 26.3% of the selected study participants disagreed with the sentiment that "I have always completed my e-learning courses at the appropriate time". The majority, representing 44.4% of the respondents were in agreement with the statement. On finding out whether e-learning has helped e-students and e-lecturers to enjoy cost reduction in virtual learning, the findings showed that 48.3% disagreed that e-learning has helped me to save money from reduced e-learning tuition fees, transport, and food expenses. To find out whether universities are using and integrating the e-strategies successfully, study participants expressed the extent of agreement that "e-learning technology used, quality e-learning content offered, mode of delivery and administrative support have collectively assisted them in achieving their goals satisfactorily". Results showed that an outstanding 63.5% disagreed that e-learning technology used, quality e-learning content offered, mode of delivery and administrative support have collectively assisted them in achieving their goals satisfactorily. Shockingly, no respondent agreed with the statement. In more depth, discussions on these findings are as follows:

### 4.10.1 e-learning Mode of Study Provides Learning Flexibility

The advancement of technology has brought about opportunities for learning institution to deliver education regardless of the time and physical location of the learners hence the ability to achieve learner goals. E-learning has transformed the way administration teaching, and learning, activities are conducted in institutions of higher learning (Sife et al. 2007). Selected research respondents expressed the extent to which they agreed that

the “e-learning mode of study provided learning flexibility”. The results from table 11 show that 54.1% disagreed that the e-learning mode of study provides learning flexibility while 33.9% agreed that the e-learning mode of study provides learning flexibility. The finding contradicts that of Schneider and Blikstein (2015) who noted that e-learning systems feature multiple advantages. But of more significance is the large number of learners that can be enrolled due to the learning flexibility provided through e-learning. Furthermore, E-learning supports learning by bringing flexibility, and it is a great way to increase the know-how levels in an organization by allowing unlimited access to learning materials Kholiq and Khoiriah (2021). The findings also contradict that of Al-adwan and Smedley (2012) who argued that virtual learning offers students the flexibility in terms of delivering or receiving learning content not limited by space or time. Notably, Learner–content engagement is a very critical aspect of interaction essential for the successful learning process (Vrasidas, 2000). Nevertheless, Learner–content engagement plays an important role since it allows students to interact with planned activities instructional materials (Tuovinen, 2000).

Learner–content engagement according to Su et al. (2005), refers to the time learners engage in studying course content in formats such as video, text, online resources, interactive games, and audio. Rodrigues and Armellini (2018) conducted a study to investigate “participants’ engagement with content in an online course without planned social interaction”. The study revealed that the engagement between learners and instructional content was quite significant. Students divulged that they gained a lot from online courses, a position well collaborated by the higher grades attained by online

students in comparison to the traditional face-to-face classroom students. The study finding reinforces the fact that online classes are designed as content-based learning which enables learners to progress and master content at their own pace and thus allowing students to attain flexible learning objectives. Additionally, students are able to complete their courses on a timely basis. The core business for e-learning is to provide learners with flexible learning hence the findings are a call for universities to SWOT analysis to come up with strategies aligned to the achievement of flexible learning.

### 4.10.2 I have always completed my E-learning Courses at the appropriate time

It is important that when students enroll for courses in universities their expectation to complete within the stipulated timeframe is met. Likewise, e-lecturers expect to complete the courses they teach online within the set timeframe. Thus, the study sought to find out whether this has been the case as facilitated by the integration of all the e-strategies. The study participants were asked to express the level of their agreement on a statement "I have always completed my e-learning courses at the appropriate time". The results were captured in the table 11 showing that 26.3% disagreed with the opinion that "I have always completed my e-learning courses at the appropriate time". A majority, representing 44.4% of the respondents were in agreement with the statement. The findings show that the e-strategies being used by most of the universities (44. 4%) are successfully assisting both e-learners and e-lecturers to achieve their goals of timely course completion.

In sub-Saharan Africa, initiatives of e-learning has continued to face ICT-related infrastructural challenges, inadequate policies, and inadequate stakeholder's Virtual Learning environments (VLEs) skills (Jorge et al., 2019). Furthermore, a widespread of

e-learning mediations have failed at the pilot stage. This is due to failure to embrace an all-inclusive system approach leading to insufficient administrative and user training, technological maintenance, high unattainable expectations and unrealistic budget planning. Therefore, as emphasized by Jorge et al. (2019), e-learning in countries with insufficient resources appears like e-technology development is overwhelming rather than revolutionizing e-learning in the sub-Saharan Universities.

In East Africa which is one of the developing nations according to Niyigena et al. (2020), e-learners experience challenges of inadequate ICT training that would lead to higher productivity of e-learning resources which is the situation in developed countries during the last decade. Thus, the main factors that help to enhance fluency of ICT in East African region and generally other developing nations is very vital. In Kenya, e-learning delivery depends on well-established infrastructural initiatives which is way below the level of satisfaction (Kibuku et al., (2020). Ndung'u et al. (2019) asserts that one of the characteristics of ICT infrastructure and internet bandwidth access in Kenya is the clear disparity between the urban and rural areas which stands at 69%. However, there has been a diminishing of digital disparity save for the initiatives from the private and public institutions such as fibre optic infrastructure thus increased e-learning usage.

The study finding reinforces the fact that online classes are designed as content-based learning which enables learners to progress and master content at their own pace and thus allowing students to attain flexible learning objectives. Additionally, students are able to complete their courses on a timely basis.

### 4.10.3 e-learning has helped me to save money from Reduced E-learning Tuition fee and fare and Food Expenses

e-learning offers both e-students and e-lecturers the opportunity to enjoy learning services anytime, from anywhere, and at their own pace. This comes with cost reduction in terms of travel costs, food, hostel costs, and tuition fee as compared to the traditional face-to-face classrooms if the available e-strategies by the university are successful. The study aimed at finding out whether e-learning has helped e-students and e-lecturers to enjoy cost reduction in the process of e-learning. Results indicated that 48.3% disagreed that e-learning has helped respondents to save money from reduced e-learning tuition fees and fare and food expenses. On the contrary, 33.6% agreed that e-learning has helped me to save money from reduced e-learning tuition fees and fare and food expenses. The finding contradicted that of a study done by Yusuf and Al-Banawi (2013) on the Impact of Changing Technology who observed that the regular advancement in information technology coupled with software-based education and training are rapidly providing flexible and a cost-effective alternative to traditional face-to-face learning. Furthermore, the scholars noted that fast deployment, simple evaluation, and consistency, are some of the attractive attributes of e-learning. However, the most compelling aspect to consider before the introduction of e-learning may be the significant costs reduction benefit likely to accrue from the adoption of e-learning over traditional face-to-face learning. Baporikar (2017) also notes that e-learning delivers content that is always up-to-date further adding that the economics is captivating since e-learning lowers material distribution and travel costs.

### 4.10.4 e-learning Technology used, Quality e-learning Content offered, Mode of Delivery and Administrative Support have collectively assisted me in achieving my goals satisfactorily

There are numerous e-learning strategy initiatives that universities have employed to achieve learner goals; e-learning technology strategies, content strategy, administrative support strategies, and communication strategies for learner goals achievement. If well integrated into the e-learning system helps the e-students and e-lecturers to satisfactorily achieve their goals. To find out whether universities are using and integrating the e-strategies successfully, selected respondents expressed their extent of agreement that "e-learning technology used, quality e-learning content offered, mode of delivery and administrative support have collectively assisted them in achieving their goals satisfactorily".

Results were as indicated in table 11 showing that a remarkable 63.5% disagreed that e-learning technology used, quality e-learning content offered, mode of delivery and administrative support have collectively assisted them in achieving their goals satisfactorily. Extraordinarily 0% agreed that e-learning technology used, quality e-learning content offered, mode of delivery and administrative support have collectively assisted them in achieving their goals satisfactorily. These findings further reveal that in the Kenyan universities there are either no e-learning strategies available, they are not fully utilized, have completely failed, or have partially failed. The findings concur with that of Vershitskaya et al. (2020) who emphasized that most of e-learning strategies are either inadequately achieved, partly achieved or are unachieved in totality despite the fact

that achieved or are unachieved in totality despite the fact that there is a high probability of LMS supporting e-learning. Their study further notes that inadequate technology strategies, poor content strategy, insufficient administrative support strategies, and poor communication marketing strategies are the most likely causes of failure.

In sub-Saharan Africa, initiatives of e-learning has continued to face ICT-related infrastructural challenges, inadequate policies, and inadequate stakeholder's Virtual Learning environments (VLEs) skills (Jorge et al., 2019). Furthermore, a widespread of e-learning mediations have failed at the pilot stage. This is due to failure to embrace an all-inclusive system approach leading to insufficient administrative and user training, technological maintenance, high unattainable expectations and unrealistic budget planning. Therefore, as emphasized by Jorge et al. (2019), e-learning in countries with insufficient resources appears like e-technology development is overwhelming rather than revolutionizing e-learning in the sub-Saharan Universities.

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a diminishing of digital disparity save for the initiatives from the private and public institutions such as fibre optic infrastructure thus increased e-learning usage.

Martin and Bolliger (2018) study to investigate learners' perceptions concerning online learning environment's engagement strategies. The study findings revealed that students valued lecturer-learner interaction strategies. The three kinds of engagement strategies inherent in effective online courses according to Moore (1999) included interaction between student-to-instructors, student-to-content interaction, and student-to-learner interaction. According to Lear et al. (2010) instructor, content and peer engagement enables online students to become more engaged and active in their studies.

Regular announcements, students' ratings, grading rubrics, and email reminders are most useful under the e-learning content category. Moreover, icebreakers, collaborative work, and learner-learner category were considered as the most beneficial interactive strategies. Most beneficial to respondents in the learner–content category was real-world projects and structured or guided discussions (Tu et al., 2012). Consequently, this increases student performance in online courses, enhances learner's satisfaction, reduces the sense of isolation, and enhances student motivation to learn.

Research conducted by various scholars such as Andersen et al. (2018), Kang and Im (2013), and Walker (2016) yielded similar results. All the scholars agreed that learner–instructor engagement is a vital predictor of learners' achievement and satisfaction in e-learning courses. Besides instructors have the opportunity to foster a sense of belonging and community within learners. Several ways instructors apply in fostering community

and belonging in the students are through modelling online behaviour, demonstrating virtual presence, offering structured or guided virtual discussion.

Furthermore, Martin et al. (2018), and Shackelford and Maxwell (2012) both contend that tutors promote a sense of community by offering encouragement and support, creation of alternative communication channels, setting study objectives, and timely feedback. Notably, excellent communication is key in promoting online student interaction. Multiple communication channels promote better levels of instructors-student engagement.

Walker (2016) however notes that it is not automatic that all tools of communication are of value to the students, for example, learners tend to dislike phone calls and chats. The author further argues that direct interaction when students and instructors engage makes the students to feel that they are in the right place. Therefore when instructors are accessible through multiple channels learners developed confidence in the system. Ryle and Cumming (2007) argue that although the facilitator's presence is critical, each different learners' community may have varying needs as far as interaction with the instructor is concerned.

### 4.11 Change Approach

A study by Dobrovič and Timková (2017) to investigate factors that determine the execution of organizational changes yielded several findings. The study revealed that planning, reviewing and the implementation processes needed to institute organizational changes play an important role in determining the success or failure of the process. According to the author challenges to change management emanate from improper

planning, employees resistance, poor timing, lack of training for the employees, absence of checks and verification in the change process, and inappropriate corporate culture. Rosenberg and Foshay (2002) emphasizes that having the best content skillful employees, and the right technology, will not guarantee success in e-learning. Adding that the dean, staff, and faculty members, are vital to the success in transitioning and therefore, they should receive training to become proficient e-learning facilitators (Engelbrecht, 2003). Stakeholders should apply a strategic change approach to surmount any resistance to change that could prevent the full adoption of e-learning strategies. Without programs and strategic planning to address resistance to change the integration or installation of the virtual system across the university could result in a failure in their use and adoption.

Additionally, without a clear and well-thought out change approach of e-learning strategy, the implementation efforts most likely fail to achieve the Kenyan university's learner goals achievement. Without e-learning strategies and change approach programs for its successful implementation, universities may be faced with decreasing market share and unsuccessful learner goals achievement. Kimani (2019) underscored that it is not automatic that success will be evident by just having in place great online learning initiatives and structures in the absence of appropriate management of shift to change. Therefore Kenyan universities should invest in end user training who includes both learners and instructors for e-capacity building and targeted reward those who embrace e-learning mode of learning for continued motivation.

**Table 4.9**

*Change Approach*

| Change Approach | Disagree | Neutral | Agree | Total |
|---|---|---|---|---|
| The university rewards the best e-learners, e-instructors and e-learning change champion groups Recoded | 407(65.8%) | 71 (11.5%) | 141(22.8%) | 619(100%) |
| Every time there is any e-learning strategy implementation, end-users are trained about it Recode | 204 (33%) | 190(30.7%) | 225(36.3%) | 619 (100%) |
| The e-director constantly communicates e-strategies to be implemented early enough to all stakeholders Recode | 319(51.5%) | 109(17.6%) | 191(30.9%) | 619 (100%) |
| Training, follow ups and mentorship on new e-technological skills is continuous recode | 225(36.3%) | 195(31.5%) | 199(32.1%) | 619 (100%) |

Source: Research Data (2021)

Results indicated that an overwhelming 65.8% disagreed that the university rewards the best e-learners, e-instructors and e-learning change champion groups. Only 22.8% agreed that the university rewards the best e-learners, e-instructors and e-learning change champion groups. Likewise, 33% disagreed that every time there is any e-learning strategy implementation, end-users are trained about it while 36.4% agreed that every time there

is any e-learning strategy implementation, end-users are trained about it. Furthermore, it was also evident that majority of the respondents (51.5%) disagreed that the e-director constantly communicates e-strategies to be implemented early enough to all stakeholders. On other hand, 30.9% agreed that he e-director constantly communicates e-strategies to be implemented early enough to all stakeholders. Correspondingly, the results were that 36.3% disagreed that training, follow ups and mentorship on new e-technological skills is continuous throughout the e-strategies implementation period. Respondents who agreed that training, follow ups and mentorship on new e-technological skills is continuous throughout the e-strategies implementation period were 32.2%. The findings concur with the study by Kimani (2019) who underscored that it is not automatic that success will be evident by just having in place great online learning initiatives and structures in the absence of appropriate management of shift to change. Without e-learning strategies and change approach programs for its successful implementation, universities may be faced with decreasing market share and unsuccessful learner goals achievement. More comprehensive discussion on these findings is as follows:

### 4.11.1 The University rewards the best e-Learners, e-Instructors and e-learning Change Champion Groups

Targeted reward to those who embrace e-learning mode of learning such as e-learners, e-lecturers and change champions is important for continued motivation. Respondents indicated their agreement level on the statement that the university rewards the best e-learners, e-instructors and e-learning change champion groups. Results were as indicated in table 12 that an overwhelming 65.8% disagreed that the university rewards the best e-

learners, e-instructors, and e-learning change champion groups. Only 22.8% agreed that the university rewards the best e-learners, e-instructors, and e-learning change, champion groups.

The study by Abdalmenem et al. (2019) sought to ascertain methods of eLearning and the part that hey play in enhancing the efficacy of the performance of education. The study covered several universities such as the University of Ottawa, Suez Canal, Munster, Islamic, Al-Aqsa, and Al-Azhar University. Finding showed that there was a positive link between efficiency in educational performance and the adaption of e-learning strategies. It became apparent that Palestinian universities lacked appropriate budgetary support for e-learning initiatives. Consequently, the study's recommendations was that managers in the executive-level of higher learning should set aside a budget for e-learning and motivate both staff and learners to use e-learning platforms.

It became apparent that Palestinian universities lacked appropriate budgetary support for e-learning initiatives. Consequently, the study recommended that senior-level management in Palestinian institutions of higher learning should set aside an e-learning budget and encourage both staff and learners to use e-learning platforms. Buzzetto-More (2010) agrees that reward is considered a vital component of any virtual learning initiative. Although, controversy is rife over what qualifies as the most appropriate rewards, for example, accreditations, promotion, or opportunities to publish. Jackson and Schuler (2006) further highlighted that developmental initiatives and training could promote the skills and knowledge needed for work-related performance. However, to function

competently a proficient employee needs motivation, therefore instructors should be motivated to work towards certain incentives structured within an e-learning initiative.

### 4.11.2 Every time there is any E-learning Strategy Implementation, End-Users are trained about it

End-users must be adequately trained before embarking on any new e-learning strategy to ensure success in the implementation of virtual learning in a university. The study sought to investigate whether universities train their end-users every time there is any e-learning strategy implementation. Table 12 portrays the study findings where 33% disagreed that "every time there is any e-learning strategy implementation, end-users are trained about it" while 36.4% agreed that "every time there is any e-learning strategy implementation, end-users are trained about it". The high number of those that agreed indicated the likelihood of reduced resistance to change during the implementation of new e-learning strategies.

This is in agreement with Kanwar et al. (2018) who emphasizes that it was possible to surmount resistance to changes by providing adequate training to academic staff, ensuring the staff understands the need to change, and involving the staff in every milestone covered from design, development and implementation stages. Additionally, the deans, faculty members, and staff are critical components determining the success during the transition stage, and thus, it important to provide them with training so as to become competent virtual learning facilitators (Engelbrecht, 2003).

### 4.11.3 The e-Director constantly communicates e-Strategies to be implemented early enough to all Stakeholders

Early and continuous communication to all stakeholders is likely to get rid of resistance to change during e-learning strategy implementation. Therefore, the study focused on this construct to determine if the universities constantly communicate e-strategies to be implemented early enough to all stakeholders. Respondents indicated their extent of agreement that the e-director constantly communicates e-strategies to be implemented early enough to all stakeholders. The results were recorded in table 12. The results showed that (51.5%) disagreed that the e-director constantly communicates e-strategies to be implemented early enough to all stakeholders. On other hand, 30.9% agreed that the e-director constantly communicates e-strategies to be implemented early enough to all stakeholders.

The findings do not agree with that of Dobrovič and Timková (2017) argument that the planning process, review, and time needed to implement changes have a major effect on the ultimate failure or success of a firm's effort to implement the changes. Additionally, the scholars enumerated the various hindrances faced by enterprises keen on implementing changes. Some of the challenges which can easily disrupt the smooth implementation of change management included inadequate communication to stakeholders, inadequate planning, insufficient time to adapt, the absence of employee training in the respective field, inappropriate corporate culture, employee resistance, and lack of inbuilt systems of checks and verifications within the change process.

### 4.11.4 Training, follow ups and Mentorship on new e-Technological Skills is Continuous throughout the e-Strategies implementation period

It is necessary for universities to do continuous training, follow-ups and mentorship on any new e-technological skills throughout the e-strategies implementation period. The study aimed at determining whether universities carry out trainings, follow-ups and mentorship on new e-technological skills is continuous throughout the e-strategies implementation period. Respondents indicated their level of agreement that training, follow-ups, and mentorship on new e-technological skills are continuous throughout the e-strategies implementation period. Results in table 12 showed that 36.3% disagreed that training, follow-ups, and mentorship on new e-technological skills are continuous throughout the e-strategies implementation period. Respondents who agreed that training, follow-ups, and mentorship on new e-technological skills are continuous throughout the e-strategies implementation period were 32.2%. The findings are in agreement with that of Dobrovič and Timková (2017) argument that firms experience several challenges in an attempt to execute change management. Challenges such as inadequate or early communication to stakeholders, inadequate planning, insufficient time to adapt, the absence of employee training in the respective field, inappropriate corporate culture, employee resistance, and lack of inbuilt systems of checks and verifications within the change process prevent firms from realizing their intended change management goals.

## 4.12 Hypothesis Testing

Chi-square test of significance was done to test the study hypothesis. Chi-square test analysis measures the association of each independent variable with the dependent

variable. Chi-square statistical test measures the association between two categorical variables. The smaller the P-value, the stronger the evidence that statistically significant relationship exists between categorical variables hence the level of statistical significance is expressed as a P-value between 0 and 1.

The level of statistical significance is often expressed as a P-value between 0 and 1. The smaller the p-value the stronger the evidence that a statistically significant relationship exists between categorical variables. A p-value less or equal to the level of significance (0.05) indicates a significant evidence of an existing statistically significant relationship between the categorical variables. A p-value is interpreted as not statistically significant if it is higher than the level of significance which is 5% (0.05) in the study. Therefore, a relationship between categorical variables is interpreted as significant if p-value is less or equal to 0.05 (5%).

### 4.12.1 Relationship between e-learning Technology Strategy and Learner Goals Achievement

Hypothesis one was tested by conducting Chi-square test analysis to establish the association between e-learning technology strategy and learner goals achievement. For the interpretation purpose there is a significant relationship between variables when p-value is less or equal to 0.05 while there is no significant relationship between categorical variables when p-value is greater than 0.05. Table 13 shows the results.

**Table 4.10**

*Chi-Square Analysis; e-learning Technology and Learner Goals Achievement*

| | **Value** | **Asymptotic Significance (2-sided)** | **P-value** | **Exact Sig. (1-sided)** |
|---|---|---|---|---|
| Pearson Chi-square | 209.120[a] | 0.000 | 0.000 | 0.000 |
| Likelihood Ratio | 175.253 | 0.000 | 0.000 | 0.000 |
| N of Valid Cases | 619 | | | |

Source: Research data (2021)

Chi-square analysis was done to find out the relationship between e-learning technology and learner goals achievement. According to the results, there is a strong statistical relationship between e-learning technology and learner goals achievement at 5% significance level ($P<0.05$).

**Table 4.11**

*E-Learning Technology Strategy and Learner Goals Achievement Cross Tabulation*

| | | | learner goals achievement | | |
|---|---|---|---|---|---|
| | | | **Learner goals well achieved** | **Learner goals not well achieved** | **Total** |
| e-technology recoded | No quality e-technology strategy in use | Count | 457 | 33 | 490 |
| | | % within e-technology recoded | 93.3% | 6.7% | 100.0% |
| | There is quality e-technology strategy in use | Count | 49 | 80 | 129 |
| | | % within e-technology recoded | 38.0% | 62.0% | 100.0% |
| Total | | Count | 506 | 113 | 619 |
| | | % within e-technology recoded | 81.7% | 18.3% | 100.0% |

Source: Research Data (2021)

From the table 4.11, Chi-square test analysis shows p-values of less than 0.05 (p-value 0.000) thus evidence that e-learning technology strategy and learner goals achievement are strongly statistically significant. If quality e-technology strategy is put in place and well implemented by e-learning managers then learner goals achievement will be attained. The results from table 4.10 shows that after the cross tabulations analysis, those who felt there is no quality e-learning technology strategy use in the Kenyan Universities and learner goals were not well achieved were 93.3%. Those who felt there was no quality e-

learning technology and learner goals were achieved were 6.7%. Similarly, those who felt that there is quality e-technology strategy in use and learner goals were not well achieved were 38% while those who felt there is quality e-learning technology strategy in use in the Kenyan universities and learner goals were achieved were 62%. This is in agreement with the analysis of chi-square test that indicates a strong significant association between e-learning technology and learner goals achievement. This finding concurs with that of Mwaniki et al. (2020), a study carried out to establish the obstacles that hinder the success of ODL programs at Kenyatta University. Key technical challenges faced by both learners and tutors are insufficient funds to buy ICT gadgets, inadequate internet connectivity and unsatisfactory exposure to computers in addition to ICT technology thus unsuccessful learner goals achievement.

### 4.12.2 Relationship Between e-learning Content Strategy and Learner Goals Achievement

The analysis aimed at testing hypothesis two. Chi-square test analysis was done to establish the association between e-learning content strategy and learner goals achievement. For the interpretation purpose, there is a significant relationship between variables when p-value is less or equal to 0.05 while there is no significant relationship between categorical variables when p-value is greater than 0.05. The results were as indicated in the table. 4.11

**Table 4.12**

*Chi-square Test Analysis between e-learning Content and Learner Goals Achievement*

| | Value | Asymptotic Significance (2-sided) | P-value (2-sided) | Exact Sig. (1-sided) |
|---|---|---|---|---|
| Pearson Chi-square | 100.323[a] | 0.000 | 0.000 | 0.000 |
| Likelihood Ratio | 90.435 | 0.000 | 0.000 | 0.000 |
| N of valid cases | 619 | | | |

Source: Research Data (2021)

Chi-square test analysis was done to establish the association between e-learning content strategy and learner goals achievement. According to the results, a strong relationship between e-learning content and learner goals achievement at 5% significance level was recorded. This implies that if quality e- learning content strategy is available and practiced in the Kenyan Universities then learner goals are likely to be achieved.

**Table 4.13**

*E-Learning Content Strategy and Learner Goals Achievement Cross Tabulation*

| | | | learner goals achievement | | |
|---|---|---|---|---|---|
| | | | Learner goals not well achieved | Learner goals well achieved | Total |
| **e-learning content strategy** | No quality e-learning content strategy in use | Count | 410 | 39 | 449 |
| | | % within e-learning content strategy | 91.3% | 8.7% | 100.0% |
| | There is e-learning content strategy used | Count | 96 | 74 | 170 |
| | | % within e-learning content strategy | 56.5% | 43.5% | 100.0% |
| Total | | Count | 506 | 113 | 619 |
| | | % within e-learning content strategy | 81.7% | 18.3% | 100.0% |

Source: Research Data (2021)

From table 4.12, chi-square test analysis points out that p-values are less than 0.05 thus evidence that e-learning content strategy and learner goals achievement are strongly significantly related. The two categorical variables are statistically significant. If quality e- learning content strategy is available and practiced in the Kenyan Universities then learner goals are likely to be achieved.

Cross tabulations analysis results from table 4.13 shows that respondents who felt there is no quality e-learning content strategy use in the Kenyan Universities and learner goals

were not well achieved were 91.3%. Those who felt there was no quality e-learning content and learner goals were well achieved were 8.7%. Likewise, those who felt that there is quality e-learning content strategy in use and learner goals were not well achieved were 56.5% while those who felt there is quality e-learning content strategy in use in the Kenyan universities and learner goals were well achieved were 43.5%. The analysis is in agreement with the study's Chi-square test analysis that indicated a strong significant association between e-learning content and learner goals achievement in the Kenyan Universities.

The findings corresponded with findings from a study done by Makokha and Mutisya (2016). In the two separate studies, both authors observed that which pointed out that most modules uploaded on the learning management systems, were lacking in interactivity and low in quality. The analysis further corresponds with the findings by Nyerere (2016) viewpoint that Kenyan e-learning platforms operate exclusively as asynchronous modes. In Kenyan universities, asynchronous mode of delivery that is characterized by inadequate interaction, collaboration and communication is still commonly used. Nyerere (2016) noted that only asynchronous approaches of delivery and collaboration were employed on LMS by universities in Kenya where e-instructors uploaded unit contents on online portals in form of summaries, examinations and course works. Subsequently, online learners then downloaded them from the university's portal. Since the system has not been planned for interactive team work, learners revise the uploaded notes and do the examinations in isolation. Thus, asynchronous methods are described by their insufficient interactions, communications and inadequate teamwork. Therefore, it is evident that Kenyan

universities should purpose to deliberately scan their environment, identify and define competitive source of e-learning content whether bought or self-developed, develop delivery materials to be used and the mode of delivery that promotes student-instructor interactivity. This should be greatly influenced by resources and modern e-learning technology available for successful implementation to achieve learner goals. Therefore there is need for Kenyan universities that offer e-learning to do SWOT analysis, identify the best e-learning content and practice it for learner goals achievement.

### 4.12.3 Relationship Between e-learning Administration support Strategy and Learner Goals Achievement

Hypothesis three was tested. Chi-square test analysis of significance was done to establish the association between e-learning administration support strategy and learner goals achievement. For the interpretation purpose, there is a significant relationship between variables when p-value is less or equal to 0.05 while there is no significant relationship between categorical variables when p-value is greater than 0.05

**Table 4.14**

*Chi-Square Tests between e-learning Administration Support Strategy and Learner Goals Achievement*

| | Value | Asymptotic Significance (2-sided) | P-value (2-sided) | Exact Sig. (1-sided) |
|---|---|---|---|---|
| Pearson Chi-square | 112.86[a] | 0.000 | 0.000 | 0.000 |
| Likelihood Ratio | 98.011 | 0.000 | 0.000 | 0.000 |
| N of Valid Cases | 619 | | | |

Source: Research Data (2021)

To establish the relationship between e-learning administration strategy and learner goals achievement. Results shows that at 5% significance level ($p<0.05$), there is a strong statistical significant relationship between e-learning administration support strategy and learner goals achievement.

**Table 4.15**

*E-learning Administration Support Strategy and Learner Goals Achievement*

| | Value | Asymptotic Significance (2-sided) | P-value (2-sided) | Exact Sig. (1-sided) |
|---|---|---|---|---|
| Pearson Chi-square | 112.86[a] | 0.000 | 0.000 | 0.000 |
| Likelihood Ratio | 98.011 | 0.000 | 0.000 | 0.000 |
| N of Valid Cases | 619 | | | |

Source: Research Data (2021)

To determine the relationship between e-learning administration strategy and learner goals achievement chi-square analysis was done. Results from table 4.15 shows that at 5% significance level ($p<0.05$), there is a strong statistical significant relationship between e-learning administration support strategy and learner goals achievement.

**Table 4.16**

*E-Learning Administration Support Strategy and Learner Goals Achievement Cross Tabulation*

| | | | learner goals achievement | | |
|---|---|---|---|---|---|
| | | | Learner goals not achieved | Learner goals well achieved | Total |
| e-learning administration support strategy | Inadequate administration support strategy in use | Count | 430 | 43 | 473 |
| | | % within e-learning administration support strategy | 90.9% | 9.1% | 100.0% |
| | There is adequate e-learning administration support strategy | Count | 76 | 70 | 146 |
| | | % within e-learning administration support strategy | 52.1% | 47.9% | 100.0% |
| Total | | Count | 506 | 113 | 619 |
| | | % within e-learning administration support strategy | 81.7% | 18.3% | 100.0% |

Source: Research Data (2021)

From chi-square analysis, results indicate an existence of a strong statistical significant association between e-learning administration support strategy with learner goals achievement at 5% significance level ($p<0.005$). Cross tabulations analysis results from table 4.16 shows that respondents who felt there is inadequate e-learning administration

strategy use in the Kenyan Universities and learner goals were not well achieved were an overwhelming 90.9%. Those who felt there was inadequate e-learning administration support and learner goals were well achieved were 9.1%. The finding agrees with that of Dwyer (1991) which suggested that administrators must be competent in the use of the technology for the implementation of ICTs to be effective and sustainable. Dwyer (1991) added that administrators should broadly possess technical, pedagogical, administrative, and financial know-how in addition to social dimensions of ICTs in education. This is in line with Mwaniki et al. (2020), who agrees that delay in the delivery of modules meant for study and learner support services that are not adequate including inadequately designed course resources, insufficient online support services for the learners including dwindling efforts to support learners' online units form the greatest e-learning programe's challenges. The author recommends that universities ought to device e-strategies aimed at strengthening learner enablement mechanisms to address the institutional challenge. Thus, there is a need for universities to invest in adequate administration support services through budget allocation for support services, training support staff on necessary administration support skills, and hiring enough support staff.

### 4.12.4 Relationship Between e-learning Communication Strategy and Learner Goals Achievement

To test hypothesis four, chi-square test analysis was done. Chi-square test analysis of significance was done to establish the association between e-learning communication strategy and learner goals achievement. For the interpretation purpose, there is a significant relationship between variables when p-value is less or equal to 0.05 while there

is no significant relationship between categorical variables when p-value is greater than 0.05

**Table 4.17**

*Chi-Square Tests Between E-Learning Communication Strategy and Learner Goals Achievement*

| | Value | Asymptotic Significance (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
|---|---|---|---|---|
| Pearson Chi-Square | 105.047[a] | 0.000 | 0.000 | 0.000 |
| Likelihood Ratio | 94.672 | 0.000 | 0.000 | 0.000 |
| N of Valid Cases | 619 | | | |

Source: Research data (2021)

Chi-square test analysis from table 4.17 points out that p-values are less than 0.05 thus evidence that e-learning communication strategy and learner goals achievement have a strong significant relationship ($p<0.05$). The two categorical variables are statistically significant. If quality e- learning communication strategy is available and practiced in the Kenyan Universities then learner goals are likely to be achieved.

**Table 4.18**

*E-Learning Communication Strategy and Learner Goals Achievement Cross Tabulation*

| | | | learner goals achievement | | |
|---|---|---|---|---|---|
| | | | **Learner goals well achieved** | **Learner goals not well achieved** | **Total** |
| e-learning communication strategy | Inadequate e-learning communication strategy used | Count | 411 | 38 | 449 |
| | | % within e-learning communication strategy | 91.5% | 8.5% | 100.0% |
| | There is adequate e-learning communication strategy | Count | 95 | 75 | 170 |
| | | % within e-learning communication strategy | 55.9% | 44.1% | 100.0% |
| Total | | Count | 506 | 113 | 619 |
| | | % within e-learning communication strategy | 81.7% | 18.3% | 100.0% |

Source: Research data (2021)

Chi-square test analysis from table 4.18 points out that p-values are less than 0.05 thus evidence that e-learning communication strategy and learner goals achievement have a strong significant relationship ($p<0.05$). The two categorical variables are statistically significant. If quality e- learning communication strategy is available and practiced in the Kenyan Universities then learner goals are likely to be achieved.

Cross tabulations analysis results from table 4.18 shows that respondents who felt there is inadequate e-learning communication strategy use in the Kenyan Universities and learner

goals were not well achieved were an overwhelming 91.5%. Those who felt there was inadequate e-learning communication strategy support and learner goals were well achieved were 8.5% thus in agreement with chi-square test analysis.

The chi-square analysis was reinforced by Lindbeck and Fodrey (2010) claim that a significant number estimated at 88% of prospective students ruled out enrolment into a university if they had a negative experience in the institution's website. Universities using web technology to reach out to prospective students experienced primary sources of information gathered about a university (Ward et al., 2010). The contact that these students made with a college was to submit an application for admission and this was particularly common with the millennial generation (Gomez et al., 2016). Consequently, it is evident that there is a need for Kenyan universities to do a SWOT analysis to identify the best communication strategies such as good communication web technology for the achievement of learner goals.

### 4.12.5 Relationship between Change Approach and Learner Goals Achievement

Hypothesis five was done by use of Chi-square test analysis. To find out the kind of relationship that exists between change approach and learner goals achievement, chi-square test analysis was done. Chi-square test analysis of significance was done to establish the association between change approach and learner goals achievement. For the interpretation purpose, there is a significant relationship between variables when p-value is less or equal to 0.05 while there is no significant relationship between categorical variables when p-value is greater than 0.05

**Table 4.19**

*Chi-Square Tests for Change Approach and Learner Goals Achievement*

| | Value | Asymptotic Significance (2-sided) | P-value (2-sided) | Exact Sig. (1-sided) |
|---|---|---|---|---|
| Pearson Chi-Square | 107.287[a] | 0.000 | 0.000 | 0.000 |
| Likelihood Ratio | 83.849 | 0.000 | 0.000 | 0.000 |
| N of Valid Cases | 619 | | | |

Source: Research Data (2021)

Chi-square test analysis from the table 4.19 points out that p-values are less than 0.05 thus evidence of an existence of a relationship that is statistically significant between change approach and learner goals achievement. The two categorical variables are statistically significant. If adequate change approach is successfully implemented and practiced there will be learner goals achievement in the Kenyan Universities.

**Table 4.20**

*Change Approach and learner goals achievement cross tabulation*

| | | | learner goals achievement | | |
|---|---|---|---|---|---|
| | | | Learner goals not well achieved | Learner goals well achieved | Total |
| Change Approach | There is inadequate change approach | Count | 474 | 65 | 539 |
| | | % within Change Approach | 87.9% | 12.1% | 100.0 % |
| | There is adequate change approach | Count | 32 | 48 | 80 |
| | | % within Change Approach | 40.0% | 60.0% | 100.0 % |
| Total | | Count | 506 | 113 | 619 |
| | | % within Change Approach | 81.7% | 18.3% | 100.0 % |

Source: Research Data (2021)

From table 4.20, chi-square test analysis indicates evidence that there is a strong association between the moderating factor Change approach and learner goals achievement since p-values are less than 0.05 (P-value of 0.000). The two categorical variables are statistically significant. This shows that if adequate change approach is successfully implemented and practiced in the Kenyan Universities there will be a smooth transition during change approach hence learner goals achievement.

Crosstabulations analysis results from table 23 shows that respondents who felt there is inadequate change approach practiced in the Kenyan Universities and learner goals were not well achieved were an overwhelming 89.9%. Respondents who felt there was

inadequate e-learning communication strategy support and learner goals were well achieved were as low as 8.5% thus, in agreement with chi-square test analysis.

The analysis results are in agreement with a study by of Dobrovič and Timková (2017) that firms experience several challenges in an attempt to execute change management. Challenges such as inadequate or early communication to stakeholders, inadequate planning, insufficient time to adapt, the absence of employee training in the respective field, inappropriate corporate culture, employee resistance, and lack of inbuilt systems of checks and verifications within the change process prevent firms from realizing their intended change management goals. Kanwar et al. (2018) agrees that it was possible to get through resistance to changes by providing adequate training to academic staff, ensuring the staff understands the need to change, and involving the staff in every milestone covered from design, development and implementation stages. Additionally, the deans, faculty members, and staff are critical components determining the success during the transition stage, and thus, it important to provide them with training so as to become competent virtual learning facilitators (Engelbrecht, 2003). Adoption of e-learning strategies could be achieved if resistance to change could be well achieved through strategic change approach.

Buzzetto-More (2010) agree that reward is considered a vital component of any virtual learning initiative. Although, controversy is rife over what qualifies as the most appropriate rewards, for example, accreditations, promotion, or opportunities to publish. Jackson and Schuler (2006) further highlighted that developmental approaches and training could promote the skills and knowledge needed for work-related performance.

However, to function competently a proficient employee needs motivation, therefore instructors should be motivated to work towards certain incentives structured within an e-learning initiative.

Without e-learning strategies and change approach programs for its successful implementation, universities may be faced with decreasing market share and unsuccessful learner goals achievement. Dookhan (2018) concurs that it is not automatic that success will be evident by just having in place great online learning initiatives and structures in the absence of appropriate management of shift to change.

Without a clear and well-thought out change approach of e-learning strategy, the implementation efforts most likely fail to achieve the Kenyan university's learner goals achievement. Therefore Kenyan universities should invest in end user training who includes both learners and instructors for e-capacity building and targeted reward those who embrace e-learning mode of learning for continued motivation.

**Table 4.21**

*Summary Chi-Square Test Analysis for Measuring the Association between each Variable and Learner Goals Achievement*

| | Value | Asymptotic Significance (2-sided) | P-value | Exact Sig. (1-sided) |
|---|---|---|---|---|
| **e-learning technology** | | | | |
| Pearson Chi-Square | 209.120[a] | 0.000 | 0.000 | 0.000 |
| Likelihood Ratio | 175.253 | 0.000 | 0.000 | 0.000 |
| Cases Valid | 619 | | | |
| **e-learning content** | | | | |
| Pearson Chi-Square | 100.323[a] | 0.000 | 0.000 | 0.000 |
| Likelihood Ratio | 90.435 | 0.000 | 0.000 | 0.000 |
| Cases Valid | 619 | | | |
| **e-administration support** Pearson Chi-Square | 112.86[a] | 0.000 | 0.000 | 0.000 |
| Likelihood Ratio | 98.011 | 0.000 | 0.000 | 0.000 |
| Cases Valid | 619 | | | |
| **e-Communication** | | | | |
| Pearson Chi-Square | 105.047[a] | 0.000 | 0.000 | 0.000 |
| Likelihood Ratio | 94.672 | 0.000 | 0.000 | 0.000 |
| Cases Valid | 619 | | | |
| **Change Approach** | | | | |
| Pearson Chi-Square | 107.287a | 0.000 | 0.000 | 0.000 |
| Likelihood Ratio | 83.849 | 0.000 | 0.000 | 0.000 |
| Cases Valid | 619 | | | |

Source: Research data (2021)

Chi-Square Test Analysis summary for measuring the association between each variable and learner goals achievement points out that for all the variables p-values are less than 0.05 (P-value of 0.000). This is evident that there is a statistically significant relationship between all the independent variables with the dependent variable. That is, e-learning technology, e-learning content, e-learning administration support, e-learning communication, change approach have a strong statistical significant relationship with learner goals achievement. This signifies that in order to achieve learner goals, universities need to identify and successfully implement e-learning technology, content, administration support and communication strategies.

Additionally, Kanwar et al. (2018) emphasized that it was possible to surmount resistance to changes by providing adequate training to academic staff, ensuring that staff members understands the need to change and involving the staff in every milestone covered from design, development and implementation stages. Moreover, the deans, faculty members, and staff are critical components determining the success during the transition stage, and thus, it is important to provide them with training so as to become competent virtual learning facilitators (Engelbrecht, 2003). Furthermore, a common reason behind the failure of acceptance commitment and from staff is the senior management attitude expecting loyalty and obedience from junior staff without necessarily addressing their needs and wants. If sufficient change management measures are taken in Kenyan universities learner goals will be realized.

## 4.13 Binary Regression Analysis

In addition to the use of Chi-square analysis to test the study hypothesis, it was also very important to run regression analysis tests. This is because from Chi-square analysis, the researcher gets insights ultimately on the relationship of the variables of interest while in regression analysis, insights on both the relationship of variables of interest and the actual contribution of each independent variable on dependent variable is given.

Regression analysis being a statistical method, enables the researcher to confidently establish factors that mostly matter, those that can be ignored and their influence on each other. Therefore, in the study, regression analysis of e-learning technology, content, administration, and communication strategies and change approach on learner goals achievement was done, both for hypothesis testing and to get insights of the impact of each independent variable on the dependent variable . Results were recorded in tables. Nagelkerk's R squared coefficient of determination which is an adjusted version of the Cox & Snell R-square was used for interpretation purpose as it adjusts the scale of the statistic to cover the full range from 0-1.

### 4.13.1 Regression analysis of e-learning technology and learner goals achievement

To examine the relationship between e-learning technology and learner goals achievement, regression analysis was done. The analysis is also important as it indicates the percentage that e-learning technology strategy accounts for in the variation of learner goals achievement. The results were indicated in tables as follows:

**Table 4.22**

*Model Summary*

| Deviate Score | Cox & Snell R Square | Nagelkerke R Square |
|---|---|---|
| 413.096[a] | 0.247 | 0.402 |

Source: Research Data (2021)

From the model summary on table 4.22, Nagelkerke R Square (R=0.402) is changed to percentage to become 40.2%. This implies that e-technology account for 40.2% of the variation in learner goals achievement.

**Table 4.23**

*Variables in the equation*

| Variable | B | S.E. | P-value | Odds Ratio |
|---|---|---|---|---|
| Quality e-content(1) | -3.118 | 0.256 | 0.000 | 0.044 |

Source: Research Data (2021)

From table 4.23, a significant relationship between quality of e-learning technology and learner goals achievement (p value<0.1) was established. It also showed that where there is no quality e-learning technology learners are 0.44 times less likely to achieve their goals at the university level in Kenya.

### 4.13.2 Regression analysis of e-learning content and learner goals achievement

e-learning content strategy and learner goals achievement association was examined using regression analysis. The analysis is also important as it indicates the percentage that e-

learning content strategy accounts for in the variation of learner goals achievement. The results were indicated in tables as follows:

**Table 4.24**

*Model Summary*

| Deviate Score | Cox & Snell R Square | Nagelkerke R Square |
|---|---|---|
| 497.915[a] | 0.136 | 0.222 |

Source: Research data (2021)

From the model summary on table 4.23, Nagelkerke R Square (R=0.R=0.222) is changed to percentage to become 22.2%. This implies e-content variable account for 22.2% of the variation in learner goals achievement.

**Table 4.25**

*Variables in the Equation*

| Variable | B | S.E. | P-value | Odds Ratio |
|---|---|---|---|---|
| Quality e-content(1) | -2.092 | 0.228 | 0.000 | 0.123 |

Source: Research data (2021)

Converting Nagelkerke R-square to a percentage, R=0.222 gives 22.2%. This means that e-learning content strategy contributed 22.2% to learner goals achievement. As proven by the study, a significant relationship exists between quality of e-learning content and learner goals achievement (p value<0.1). It also indicated that where there is no quality e-learning content, learners are 0.123 times less likely to achieve their goals at the university level in Kenya. The findings corresponded with findings from a study done by Makokha

and Mutisya (2016). In the two separate studies, both authors observed that which pointed out that most modules uploaded on the learning management systems, were lacking in interactivity and low in quality. The analysis further corresponds with the findings by Nyerere (2016) viewpoint that Kenyan e-learning platforms operate exclusively as asynchronous modes. In Kenyan universities, asynchronous mode of delivery that is characterized by inadequate interaction, collaboration and communication is still commonly used. Nyerere (2016) noted that only asynchronous approaches of delivery and collaboration were employed on LMS by universities in Kenya where e-instructors uploaded unit contents on online portals in form of summaries, examinations and course works. Subsequently, online learners then downloaded them from the university's portal.

Since the system has not been planned for interactive team work, learners revise the uploaded notes and do the examinations in isolation. Thus, asynchronous methods are described by their insufficient interactions, communications and inadequate teamwork. Therefore, it is evident that Kenyan universities should purpose to deliberately scan their environment, identify and define competitive source of e-learning content whether bought or self-developed, develop delivery materials to be used and the mode of delivery that promotes student-instructor interactivity. This should be greatly influenced by resources and modern e-learning technology available for successful implementation to achieve learner goals.

### 4.13.3 Regression analysis of e-learning administration support strategy and learner goals achievement

e-learning administration support strategy and learner goals achievement association was examined by use of regression analysis. The analysis is also important as it indicates the percentage that e-learning administration strategy accounts for in the variation of learner goals achievement. The results were indicated in tables as follows:

**Table 4.26**

*Model Summary*

| Deviate Score | Cox & Snell R Square | Nagelkerke R Square |
|---|---|---|
| 490.338[a] | 0.146 | 0.239 |

Source: Research Data (2021)

From the model summary table 4.26, Nagelkerke R Square (R=0.R=0.239) is changed to percentage to become 23.9%. This implies e-content variable account for 23.9% of the variation in learner goals achievement.

**Table 4.27**

*Variables in the equation*

| | B | S.E. | P-value | Odds Ratio |
|---|---|---|---|---|
| Administration Support (1) | -2.220 | 0.230 | 0.000 | 0.109 |

Source: Research Data (2021)

As indicated in table 4.26, Converting Nagelkerke R-square to a percentage, R=0.239 gives to 23.9%. This implies that e-learning administration support strategy contributed 23.9% to learner goals achievement. From table 4.27, It was established from the study that a relationship that is significant between adequate e-learning administration support strategy and learner goals achievement (p value<0.1) exist. Correspondingly, it showed that where there is inadequate e-learning administration support strategy, learners are 0.109 times less likely to achieve their goals at the university level in Kenya. The finding agrees with that of Dwyer (1991) which suggested that administrators must be competent in the use of the technology for the implementation of ICTs to be effective and sustainable. Dwyer (1991) added that administrators should broadly possess technical, pedagogical, administrative, and financial know-how in addition to social dimensions of ICTs in education. Thus, there is a need for universities to invest in adequate administration support services through budget allocation for support services, training support staff on necessary administration support skills, and hiring enough support staff.

### 4.13.4 Regression analysis of e-learning communication and learner goals achievement

e-learning communication strategy and learner goals achievement association was examined by use of regression analysis. The analysis is also important as it indicates the percentage that e-learning communication strategy accounts for in the variation of learner goals achievement. The results were indicated in tables as follows:

**Table 4.28**

*Model Summary*

| Deviate Score | Cox & Snell Square | RNagelkerke R Square |
|---|---|---|
| 493.678[a] | 0.142 | 0.231 |

Source: Research Data(2021)

From table 4.28 Converting Nagelkerke R-square to a percentage, R=0.231 gives 23.1%. This implies that e-learning communication strategy contributed 23.1% to learner goals achievement.

**Table 4.29**

*Variables in the equation*

| | B | S.E. | P-value | Odds Ratio |
|---|---|---|---|---|
| e-communication strategy (1) | -2.145 | 0.229 | 0.000 | 0.117 |

Source: Research Data

From table 4.28 Converting Nagelkerke R-square to a percentage, R=0.231 gives to 23.1%. This implies that e-learning communication strategy contributed 23.1% to learner goals achievement. From table 4.29, It was established from the study that a relationship that is significant between adequate e-learning communication strategy and learner goals achievement (p value<0.1) exist.

Similarly, study showed that where there is inadequate e-learning communication strategy, learners are 0.117 times less likely to achieve their goals at the university level

in Kenya. The finding concurs with that of a study done by Lindbeck and Fodrey (2010) who asserted that a significant number estimated at 88% of prospective students ruled out enrolment into a university if they had a negative experience in the institution's website. Universities using web technology to reach out to prospective students experienced primary sources of information gathered about a university. The contact that these students made with a college was to submit an application for admission and this was particularly common with the millennial generation (Gomez et al., 2016). Consequently, it is evident that there is a need for Kenyan universities to identify the best communication strategies such as good communication web technology for the achievement of learner goals.

### 4.13.5 Moderating factor change approach and learner goals achievement regression analysis.

e-learning communication strategy and learner goals achievement association was examined by use of regression analysis. The analysis is also important as it indicates the percentage that change approach accounts for in the variation of learner goals achievement. The results were indicated in tables as follows:

**Table 4.30**

*Model Summary*

| Deviate Score | Cox & Snell R Square | Nagelkerke R Square |
|---|---|---|
| 504.500[a] | 0.127 | 0.207 |

Source: Research Data (2021)

From table 4.30, converting Nagelkerke R-square to a percentage, R=0.207 gives 20.7%. This implies that the moderating factor change approach contributed 20.7% variation in the learner goals achievement.

**Table 4.31**

*Variables in the equation*

| | B | S.E. | P-value | Odds Ratio |
|---|---|---|---|---|
| Change Approach(1) | -2.392 | 0.264 | 0.000 | 0.091 |

Source: Research Data (2021)

From table 4.30, Converting Nagelkerke R-square to a percentage, R=0.207 gives to 20.7%. This implies that the moderating factor change approach contributed 20.7% of variation in the learner goals achievement.

From table 4.31, It was established from the study that there is a significant relationship between Change approach and learner goals achievement (p value<0.1). Similarly, the study showed that where there is inadequate change approach, learners are 0.091 times less likely to achieve their goals at the university level in Kenya.

**Table 4.32**

*Model Summary of Binary regression analysis accounting for each variable contribution to learner goals achievement*

| Variable | Deviate Score | Cox & Snell Square | RNagelkerke R Square |
|---|---|---|---|
| e-technology | 413.096[a] | 0.247 | 0.402 |
| e-content | 497.900[a] | 0.136 | 0.222 |
| e-administration | 490.338[a] | 0.146 | 0.239 |
| e-communication | 493.678a | 0.142 | 0.231 |

Source: Research Data (2021)

Nagelkerke R Square is changed to percentage to indicate the percentage contribution of each independent variable to the dependent variable. This implies that the e-learning technology account for 40.2% of the variation in learner goals achievement, e-content variable account for 22.2% of the variation in learner goals achievement, e-learning administration support strategy contributed 23.9% to learner goals achievement, e-learning communication strategy contributed 23.1% to learner goals achievement. In summary, in order of contribution from highest to lowest e-learning technology (40.2%), e-learning administration support (23.9%), e-learning communication (23.1%) and e-learning content (22.2%) The findings help the e-learning strategists in the Kenyan Universities to invest more on those independent variables that contribute more to learner goals achievement.

**Table 4.33**

*Relationship Between Independent and Dependent Variables and The Extent Of Their Likelihood In Influencing Learner Goals Achievement (Chi-Square Variables In The Equation)*

| Variable | B | S.E. | P-value | Odds Ratio |
|---|---|---|---|---|
| **Quality e-technology** | | | | |
| There is quality e-learning technology strategy in use(reference) | - | - | - | - |
| No quality e-learning technology strategy in use | -3.118 | 0.256 | 0.000 | 0.044 |
| **e-learning content** | | | | |
| There is quality e-learning content strategy(reference) | - | - | - | - |
| No quality e-learning content strategy | -2.092 | 0.228 | 0.000 | 0.123 |
| **e-learning Administration Support** | | | | |
| There is adequate e-learning administration support in use(reference) | - | - | - | - |
| Inadequate administration support in use | -2.220 | 0.230 | 0.000 | 0.109 |
| **e-learning communication** | | | | |
| There is adequate e-learning communication strategy used(reference) | - | - | - | - |
| Inadequate e-learning communication strategy used | -2.145 | 0.229 | 0.000 | 0.117 |
| **Change Approach** | | | | |
| There is adequate change approach(reference) | - | - | - | - |
| There is inadequate change approach | -2.392 | 0.264 | 0.000 | 0.091 |

Source: Research Data (2021)

For interpretation purpose, where the ExpB (odds ratio) is less than 1(ExpB<1) it was interpreted as “less likely” while ExpB with a value of greater than 1 (ExpB>1) was interpreted as “more likely”). Table 4.33 results indicate that there is a significant relationship between quality e-learning technology and learner goals achievement (p value<0.1) It also showed that where there is no quality e-learning technology learners are 0.44 times less likely to achieve their goals at the university level in Kenya. It was established from the study that a relationship that is significant between quality of e-learning content and learner goals achievement (p value<0.1) exists.

It also showed that where there is no quality e-learning content, learners are 0.123 times less likely to achieve their goals at the university level in Kenya. Furthermore, It was determined from the study that a relationship that is significant between adequate e-learning administration support and learner goals achievement (p value<0.1) exists. Correspondingly, it showed that where there is inadequate e-learning administration support strategy, learners are 0.109 times less likely to achieve their goals at the university level in Kenya.

Similarly, It was evident from the study that a relationship that is significant between adequate communication and learner goals achievement (p value<0.1) exists. Study showed that where there is inadequate e-learning communication strategy, learners are 0.117 times less likely to achieve their goals at the university level in Kenya. Likewise, it was evident that there is a significant relationship between adequate change approach and learner goals achievement (p value<0.1) and that where there is inadequate change approach, learners are 0.091 times less likely to achieve their goals at the university level

in Kenya. Based on the insights on the level of likelihood of each variable to influence learner goals achievement, e-learning managers are in a better position to decide on the appropriate e-learning strategies and implement them in terms of their priorities.

## 4.14 Summary of Hypothesis Testing Results

A hypothesis is a tentative, testable specific statement of prediction that answers scientific questions. Each hypothesis of the study was tested using Chi-square analysis and binary regression analysis and results presented in tables. The hypothesis were tested at 5% significance level and the hypothesis either rejected or accepted. Five hypotheses were tested in this study, namely:

$H_0$1 e-learning technology strategy and learner goals achievement in the Kenyan Universities does not have a significant relationship.

$H_0$2 e-learning content strategy and learner goals achievement in the Kenyan universities have no significant relationship.

$H_0$3 e-learning administration support strategy and learner goals achievement in the Kenyan universities does not have a significant relationship.

$H_0$4 e-learning communication strategy and learner goals achievement in Kenyan universities have no significant relationship.

$H_0$5 Change approach has no moderating effect on the relationship between e-learning strategy and learner goals achievement in Kenyan universities.

### 4.13.1: Hypothesis one

***$H_0$1 e-learning technology strategy and learner goals achievement in the Kenyan Universities does not have a significant relationship.***

Results on table 4.33 showed that e-learning technology strategy is significantly associated with learner goals achievement. Consequently, null hypothesis was rejected. If there is no e-learning technology strategy e-students and e-lecturers are 0.123 times less likely to achieve their goals in education when compared to e-students and e-lecturers in universities that have implemented e-learning technology strategy. Results were significant at 5%.

### 4.13.2 Hypothesis two

***$H_0$2 e-learning content strategy and learner goals achievement in the Kenyan universities have no significant relationship.***

Results on table 4.33 showed that e-learning content strategy is significantly associated with learner goals achievement. Therefore, null hypothesis was rejected. If there is no quality e-learning content strategy e-students and e-lecturers are 0.345 times less likely to achieve their goals in education when compared to learners and e-lecturers in universities who have implemented e-learning content strategy. Results were significant at 5%.

### 4.13.3 Hypothesis three

***$H_0$3 e-learning administration support strategy and learner goals achievement in the Kenyan universities does not have a significant relationship.***

The results on table 4.33 indicated that there is a significant relationship between e-learning administration support strategy and learner goals achievement. Thus, null hypothesis was rejected.

### 4.13.4 Hypothesis four

***$H_0$4 e-learning communication strategy and learner goals achievement in Kenyan universities have no significant relationship.***

The results on table 4.33 showed that e-learning communication strategy is significantly associated with learner goals achievement. If there is inadequate e-learning communication strategy used e-students and e-lecturers are 0.473 times less likely to achieve their goals in education when compared to learners and e-lecturers in universities who have implemented adequate e-learning communication strategy. Results were significant at 5%.

### 4.13.5 Hypothesis five

***$H_0$5 change approach has no moderating effect on the relationship between e-learning strategy and learner goals achievement in Kenyan universities.***

The results on table 4.33 indicated that change approach is significantly associated with learner goals achievement. Results were significant at 5%. Accordingly, null hypothesis was rejected. If there is inadequate change approach e-students and e-lecturers are 0.256 times less likely to achieve their goals in education when compared to e-students and e-lecturers in universities that have implemented e-learning technology strategy.

**Table 4.34**

*Hypothesis Testing Summary Table*

| | **Hypothesis (Null)** | **Results** |
|---|---|---|
| **$H_0$1** | $H_0$1 e-learning technology strategy and learner goals achievement in the Kenyan Universities does not have a significant relationship. | Hypothesis was rejected |
| **$H_0$2** | $H_0$2 e-learning content strategy and learner goals achievement in the Kenyan universities have no significant relationship. | Hypothesis was rejected |
| **$H_0$3** | $H_0$3 e-learning administration support strategy and learner goals achievement in the Kenyan universities does not have a significant relationship. | Hypothesis was rejected |
| **$H_0$4** | $H_0$4 e-learning communication strategy and learner goals achievement in Kenyan universities have no significant relationship. | Hypothesis was rejected |
| **$H_0$5** | $H_0$5 Change approach has no moderating effect on the relationship between e-learning strategy and learner goals achievement in Kenyan universities. | Hypothesis was rejected |

Source: Research data (2021)

## 4.15 Multivariate Logistic Regression

Prediction of a categorical placement on a dependent variable based on multiple independent variables is done by the use of a multivariate logistic regression model. Independent variable could be binary or continuous. Modelling a linear relationship between the independent variables and dependent variable is the main goal of multivariate logistic regression. Additionally, study results explained the moderating role of change approach on learner goals achievement.

**Table 4.35**

*Summary of Multivariate Logistic Regression determining the influence of e-learning strategy on learner goals achievement (without moderating variable)*

| | B | S.E. | P-value | Odds Ratio |
|---|---|---|---|---|
| **e-learning technology** | | | | |
| There is quality e-learning technology strategy in use(reference) | - | - | - | - |
| No quality e-learning technology strategy in use | -2.188 | 0.299 | 0.000 | 0.112 |
| **e-learning content** | | | | |
| There is quality e-learning content strategy (reference) | - | - | - | - |
| No quality e-learning content strategy | -1.130 | 0.292 | 0.000 | 0.323 |
| **e-learning Administration Support** | | | | |
| There is adequate e-learning administration support in use (reference) | - | - | - | - |
| Inadequate administration support in use | -.858 | 0.308 | 0.005 | 0.424 |
| **e-learning communication** | | | | |
| There is adequate e-learning communication strategy used (reference) | - | - | - | - |
| Inadequate e-learning communication strategy used | -.828 | 0.304 | 0.006 | 0.437 |

Source: Research Data (2021)

The results on table 4.35 indicated that e-learning technology strategy is significantly associated with learner goals achievement. If there is no e-learning technology strategy e-

students and e-lecturers are 0.112 times less likely to achieve their goals in education when compared to e-students and e-lecturers in universities that have implemented e-learning technology strategy. Results showed that e-learning content strategy is significantly associated with learner goals achievement ($p<0.05$). If there is no quality e-learning content strategy e-students and e-lecturers are 0.323 times less likely to achieve their goals in education when compared to learners and e-lecturers in universities who have implemented e-learning content strategy.

Results were significant at 5%. Results indicated that e-learning administration support strategy is significantly associated with learner goals achievement ($P>0.05$). If there is inadequate administration support in use e-student and e-lecturers are 0.424 times less likely to achieve their goals in education compared to learners and e-lecturers in universities who have invested in e-learning administration support. Furthermore, the results on table 4.35 showed that e-learning communication strategy is significantly associated with learner goals achievement. If there is inadequate e-learning communication strategy used e-students and e-lecturers are 0.437 times less likely to

achieve their goals in education when compared to learners and e-lecturers in universities who have implemented adequate e-learning communication strategy.

**Table 4.36**

*Summary Of Multivariate Logistic Regression Determining the Influence Of E-Learning Strategy on Learner Goals Achievement (Moderating Variable Included)*

| Variable | B | S.E. | P-value | Odds Ratio |
|---|---|---|---|---|
| **With change approach** | | | | |
| **e-learning technology** | | | | |
| There is quality e-learning technology strategy in use (reference) | - | - | - | - |
| No quality e-learning technology strategy in use | -2.291 | 0.307 | 0.000 | 0.101 |
| **e-learning content strategy** | | | | |
| There is quality e-learning content strategy(reference) | - | - | - | - |
| No quality e-learning content strategy | -1.243 | 0.301 | 0.000 | 0.289 |
| **e-learning Administration Support** | | | | |
| There is adequate e-learning administration support in use(reference) | - | - | - | - |
| Inadequate administration support in use | -0.913 | 0.324 | 0.054 | 0.401 |
| **e-learning communication strategy** | | | | |
| There is adequate e-learning communication strategy used(reference) | - | - | - | - |
| Inadequate e-learning communication strategy used | -0.926 | 0.311 | 0.016 | 0.396 |

Source: Research Data (2021)

Results as indicated on table 4.36 shows that e-learning technology strategy is significantly associated with learner goals achievement. If there is no quality e-learning technology strategy e-students and e-lecturers are 0.101 times less likely to achieve their goals in education when compared to e-students and e-lecturers in universities that have implemented e-learning technology strategy. Results in table 39 indicated that e-learning content strategy is significantly associated with learner goals achievement ($p<0.05$). If

there is no quality e-learning content strategy e-students and e-lecturers are 0.289 times less likely to achieve their goals in education when compared to learners and e-lecturers in universities who have implemented e-learning content strategy. Results were significant at 5%. Results indicated that e-learning administration support strategy is significantly associated with learner goals achievement ($P<0.05$). If there is inadequate e-learning administration support strategy used e-students and e-lecturers are 0.401 times less likely to achieve their goals in education when compared to learners and e-lecturers in universities who have implemented adequate e-learning administrative support strategy. Furthermore, the results on table 39 showed that e-learning communication strategy is significantly associated with learner goals achievement. If there is inadequate e-learning communication strategy used e-students and e-lecturers are 0.396 times less likely to achieve their goals in education when compared to learners and e-lecturers in universities who have implemented adequate e-learning communication strategy.

Results were significant at 5%. Likewise, the results on table 4.36 indicated that change approach is significantly associated with learner goals achievement. Results were significant at 5%. From the findings, it was evident that the odds ratio in the model with moderating variable (change approach) as indicated on table 4.36 were less than those of the model without the moderating factor, indicated on table 4.35. This led to the conclusion that change approach is a key factor as it played a moderating role in the learner goals achievement. Thus, Kenyan universities ought to adopt change approach as they endeavor to implement e-learning strategies for learner goals achievement.

**Table 4.37**

*Comparison between the model without moderating variable (change approach) and the model with moderating variable (change approach)*

| Variable | B | S.E. | P-value | Odds Ratio |
|---|---|---|---|---|
| **without change approach** | | | | |
| **e-learning technology** | | | | |
| There is quality e-learning technology strategy in use (reference) | - | - | - | - |
| No quality e-learning technology strategy in use | -2.188 | 0.299 | 0.000 | 0.112 |
| **e-learning content** | | | | |
| There is quality e-learning content strategy(reference) | - | - | - | - |
| No quality e-learning content strategy | -1.012 | 0.292 | 0.000 | 0.323 |
| **e-learning Administration Support** | | | | |
| There is adequate e-learning administration support in use(reference) | - | - | - | - |
| Inadequate administration support in use | -0.858 | 0.308 | 0.005 | 0.424 |
| **e-learning communication** | | | | |
| There is adequate e-learning communication strategy used(reference) | - | - | - | - |
| Inadequate e-learning communication strategy used | -0.828 | 0.304 | 0.006 | 0.437 |
| **With change approach** | | | | |
| **e-learning technology** | | | | |
| There is quality e-learning technology strategy in use(reference) | - | - | - | - |
| No quality e-learning technology strategy in use | -2.291 | 0.307 | 0.000 | 0.101 |
| **e-learning content strategy** | | | | |
| There is quality e-learning content strategy(reference) | - | - | - | - |
| No quality e-learning content strategy | -1.243 | 0.301 | 0.000 | 0.289 |
| **e-learning Administration Support** | | | | |
| There is adequate e-learning administration support in use(reference) | - | - | - | - |
| Inadequate administration support in use | -0.913 | 0.324 | 0.054 | 0.401 |
| **e-learning communication strategy** | | | | |
| There is adequate e-learning communication strategy used(reference) | - | - | - | - |
| Inadequate e-learning communication strategy used | -0.926 | 0.311 | 0.016 | 0.396 |

Source: Research data (2021)

It is important to note that without change approach all the variables have a significant relationship with learner goals achievement at 5% significance level. Similarly, with the introduction of change approach, e-learning technology, e-learning content, e-learning communication still had a significant relationship with learner goals achievement at 5% confidence level. It is also evident from the results that when change approach was introduced the odds ratio became less thus explaining more of variation in learner goals achievement unlike when it is absent. From the findings on table 4.37, it was evident that the odds ratio in the model with moderating variable (change approach) were less than those of the model without the moderating factor. This led to the conclusion that change approach is a key factor as it played a moderating role in the learner goals achievement.

This is aligned to a study's findings by Dobrovič and Timková (2017) who sought to investigate factors that determine the execution of organizational changes. The study revealed that planning, reviewing and the implementation processes needed to institute organizational changes play an important role in determining the success or failure of the process. According to the author, challenges to change management emanate from improper planning, employees resistance, poor timing, lack of training for the employees, absence of checks and verification in the change process, and inappropriate corporate culture. Thus, Kenyan universities ought to adopt change approach as they endeavor to implement e-learning strategies for learner goals achievement.

**Table 4.38**

*Comparison between summary model with moderating variable (change approach) and the one without*

| Deviate Score | Cox & Snell R Square | Nagelkerke R Square |
|---|---|---|
| **Without change approach** | | |
| 362.683[a] | 0.306 | 0.498 |
| **With change approach** | | |
| 349.879[a] | 0.320 | 0.521 |

Source: Research data (2021)

For the purpose of interpretation, the model with less deviate score is better than the one with a higher deviate score. Results in table 4.38 indicate that the summary model with change approach had less deviate score of 349.979[a] while the summary model without change approach has a higher deviate score of 362.683[a] thus the one with change approach is better than the model without change approach. This implies that change approach is a key factor as it has a moderating effect on learner goals achievement. Therefore, universities ought to include it in the process of e-learning strategies implementation if they have to achieve learner goals.

# CHAPTER FIVE

# SUMMARY, CONCLUSION AND RECOMMENDATIONS

## 5.1 Introduction

The chapter gives a summary of study results and conclusions and subsequently drawing recommendations and further study suggestions. A model that linked e-learning technology strategy, e-learning content strategy, e-learning administration support, e-communication and change approach in addition to learner goals achievement was proposed.

## 5.2 Summary of Results

Universities have come up with various e-strategies to deal with great market forces emanating from the dynamic technological advancement, progressively more varied learner groups with varying requirements in addition to anticipations as well as intensified demands aimed at innovative plus diverse facilities and programs. Despite the many initiatives to support online learning, many of the strategies are inadequately achieved for successful learner goals achievement due to inadequate technology strategies, poor content strategy, insufficient administrative support strategies, poor communication marketing strategies and inadequate change approach. Therefore, the study pursued to establish effect of e-learning strategy in learner goals achievement: moderating role of change approach in Kenyan universities.

Specific study objectives guided the study as follows: to establish relationship between e-learning technology strategy and learner goals achievement at the universities in Kenya,

to examine the relationship between e-learning content strategy on learner goals achievement in the Kenyan universities, to examine the effect of e-learning administration support strategy on learner goals achievement in the Kenyan universities, to determine the impact of e-learning communication strategy and learner goals achievement in the Kenyan universities and to examine the impact of the moderating role of change approach on the association among e-learning strategies and learner goals achievement in the Kenyan universities.

Positivist research philosophy was used in the study. According to Mcnabb (2008), the three research philosophies includes positivism, interpretivist and realism. Additionally, the three models assist researchers to gain insights on the research topic. As Creswell and Creswell (2018) recommends, positivist research philosophy was used in the study. The assumption of positivist epistemology is that legitimate knowledge claims are only derived from the scientific methods. Another assumption is that the researcher is nonpartisan hence ruling out the possibility of affecting the outcomes of the study. Creswell and Creswell (2018) argues that the philosophy seeks to explain associations by identifying reasons that affect outcomes of the study thus providing prediction and generalization foundations. Therefore, this contributes enough reasons to conclude that it is the best for this study because only facts derived from scientific method made legitimate knowledge claims and generalizations.

Descriptive research design described by Lavrakas (2008) as a systematic method of research for data collection from individuals' sample by use of instruments composed of questions that are closed ended and open ended, observations as well as interviews was used. It is used widely to gather bulky volume of data from a sample representing individuals that have been sampled from target population. Precise revelation of a particular individual's characteristics, situation or a certain group is the main aim of descriptive survey design thus, the best for this study (Kothari, 2010). Furthermore, this design is extensively used in acquiring data that is used in the evaluation of current approaches and provides the basis for making decisions. Nyerere et al. (2016) used descriptive survey design that sought to get more insights on open, distance and e-learning in Kenyan educational institutions. Inferential statistics was also used because it draws conclusions that cannot be derived from descriptive statistics. Mixed method design therefore becomes the most suitable method based on the above clarifications, explanations and strong points.

On choosing the target population, there are a total of 74 universities licensed to operate in Kenyan universities (CUE, 2018) out of which 16 are offering e-learning programs, according to telephone inquiry made to the 74 universities. There are 16 universities offering e-learning and licensed to operate in Kenya according to the CUE 2018 data in Kenya, with a total of 29608 participants, comprising of 26761 e-learners and 2847 e-lecturers. The unit of analysis was the e-lecturers and e-learners because they both interact more with the e-learning system that uses currently implemented e-strategies hence best suited to give feedback on its success. Therefore, the target population was the 26761 e-

learners and 2847 e-lecturers. Respondents were e-lecturers and e-learners because they both interact more with the e-learning system that uses currently implemented e-strategies hence best suited to give feedback on its success.

In the study, the sample consisted of 351 e-lecturers and 394 e-students. Slovin's formula was used to determine the sample size from the population in the study. According to Lavrakas (2008) when a researcher draws a subdivision of elements from the entire population, in the context of survey research it is known as a sample. A sample has also been referred to as a units collected from the universe to represent it (Kombo & Tromp, 2009; Kothari, 2010). According to (Orodho & Kombo, 2002), an infinite section of a statistical population whose characteristics are subject to study for the purpose of gaining information on the entire population is referred to as a sample.

A study that is inadequately defined does not have the authority to declare a false null hypothesis rejected making it a waste of resources such as time and money hence a sample becomes very vital (Gerstman, 2013). In addition, collecting too much data during a study is also a waste of time and resources. It is more practical and of less wastage of resources if data is collected from a sample in comparison to data collection from the whole population as recommended by Polit and Beck (2003). Stratified random sampling, a method suitable once sub-populations contained in the total population differ, was used for identifying the sample size in the 16 universities individually. The sampling method is therefore suitable for the study as each university out of the 16 universities vary from each other.

Questionnaires composed of structured questions were used to collect primary data. Respondents were requested to indicate their extent of agreement to a concept being measured in a Likert type of questions in the questionnaire. The Likert scale questions were at 5 levels namely: 1=strongly disagree, 2=Disagree 3=neutral, 4=Agree, 5= strongly agree. Likert scales were chosen as the most applicable scales as they are very reliable, gives greater data volume than other scales and better approximates the normal response curve (Cooper & Schindler, 2011). Sources of secondary data included relevant and up to date information from research papers, studies done previously and Journals that have been published online.

Due to Covid-19 pandemic, the researcher was not able to physically issue questionnaires to the respondents in the course of data collection. To deal with this limitation, respondents' mobile numbers and email addresses were obtained from the registrar academic then questionnaires and the introductory letters from the university and NACOSTI were administered to all the respondents through emails and received back through the same medium. To increase the rate of response, the researcher followed up on respondents using the same communication medium. The researcher was very cautious in ensuring that all questionnaires administered to the respondent were returned back by keeping a register of questionnaires for accountability.

Pre-testing of data collection tools was done before they were administered to ascertain their reliability and validity. Cable and DeRue (2002) describes validity as the level to which instruments accurately measures what it was intended to or the truthfulness of the instruments used in the research. The research tools were tried out on the selected

respondents similar to the ones that were to be researched on. The results were analyzed, patterns and major differences noted. Areas such as clarity of the questionnaire, suitability of the tool content to the respondent, time needed, possible obstacles that could arise were looked into. Thereafter, the tools were revised accordingly. Pre-testing ensured that the tools yielded consistent results, correct wording and clarity of sentences, unambiguous, and that the responses were unbiased (Marshall & Rossman, 2011).

The data obtained was tested for adequacy and workability of the research instruments and determined what resources were required (Kumar, 2010). Hilton (2015) asserts that pre-tests are meant for showing that the questions were answered as it was intended. To get rid of ambiguity in the questions, a pre-test was done using a small number of respondents who were chosen using simple random sampling, a sampling method that ensures that there is an equal chance for each individual unit to be selected (Orodho, 2009). Furthermore, the method is the least likely to cause biasness and it also offers the most representativeness of the population in totality. Through its statistical properties, pre-test, based on the results obtained allows researchers to deduce inferences about the population.

Testing of the reliability of the questionnaires was done by conducting a pre-test before undertaking the final data collection. Tests were administered to 10 e-lecturers and 22 e-students and to satisfy reliability tests Cronbach alpha correlation coefficient and a statistical package for social sciences (SPSS) was applied. The researcher issued 745 respondents with questionnaires and 619 of them were received back 745 questionnaires were issued to the respondents out of which only 619 were returned thus obtaining a return rate of 82.1% that was partially credited to half-finished, not returned and unfilled

questionnaires. Wimmer and Dominick (2013) supports a rate of return of 21-70% as sufficient, gives assurance for accuracy, reduces biasness and as acceptable for the questionnaires that are self-administered hence 82.1% is acceptable in the study. Procedures of collecting data that included allowance of sufficient time to the respondents for questionnaire completion and making follow-up calls and sending emails for hastening questionnaire filling by respondents ensured a high response rate. Services of five research assistants were engaged for effectiveness and efficiency in data collection.

In the study, reliability was achieved by clearly defining the sample population and 32 respondents from 1 university in Nairobi County strictly filling the questionnaires. Creswell and Creswell (2018) argues that research instruments are termed to be reliable when same researcher or another researcher is in a position to get the identical anticipated facts as the original instrument anticipated to do in the same target population implying that there is consistency in the results' production. By the use of Cronbach's alpha was used for reliability analysis to test reliability of questionnaires and data item's internal consistency.

As recommended by Kipkebut (2010) Cronbach's alpha coefficient ranges between 0 and 1 was used to measure data reliability. Kothari (2010) commends that a scale of 0.70 or above is adequate. The results indicated that e-learning technology had an Alpha coefficient of 0.809; e-learning content of 0.686, e-learning Administration support of 0.704 and e-learning communication of 0.750, Learner goals achievement of 0.773 and change approach of 0.846. In the study, all constructs depicted Cronbach's Alpha values

that are greater than the value of 0.70 which has been recommended as acceptable hence the study was confirmed as acceptable.

Analysis of data involved establishment of the variable to examine and what relationships to explore (Mutai, 2000). Before doing analysis of data, the researcher processed the raw data that assisted in doing away with the problems associated with data that has not been processed. Once the researcher had adequately corrected errors that could have affected analysis of data, a coding scheme was formulated, summarized and analysis done. Electronic storage was used to store coded data for short and long-term periods after which a statistical software package (SPSS) version 23 was used to analyze data.

Descriptive statistics comprising of tables of frequency distribution and percentages were used by the researcher. Additionally, binary regression analysis was used to determine the association between independent and dependent variables that provided comprehensive data description. Presentation of results and findings was done in tables and percentages and significant interpretations done accordingly.

### 5.2.1 Preliminary Results

Guided by the objectives of the study, results from the respondents' frequencies were analyzed and presented in tables and percentages. Collective impact of e-learning strategies and change approach positively influenced learner goals as evidenced from the study results.

### 5.2.2 Relationship Between e-learning Technology Strategy and Learner Goals Achievement in the Kenyan Universities

Establishment of the association between e-learning technology and learner goals achievement in the Kenyan Universities was the first study objective. The results indicated that e-learning technology strategy is significantly associated with learner goals achievement. Consequently, null hypothesis was rejected. If there is no e-learning technology strategy e-students and e-lecturers are 0.123 times less likely to achieve their goals in education when compared to e-students and e-lecturers in universities that have implemented e-learning technology strategy. Results were significant at 5%.

### 5.2.3 Determining the effect of e-learning content Strategy on Learner Goals Achievement

Determining the influence of e-learning content strategy on learner goals achievement in the Kenyan universities was the second study objective. The results showed that e-learning content strategy is significantly associated with learner goals achievement. Therefore, null hypothesis was rejected. If there is no quality e-learning content strategy e-students and e-lecturers are 0.345 times less likely to achieve their goals in education when compared to learners and e-lecturers in universities who have implemented e-learning content strategy. Results were significant at 5%. A study by Mwaniki et al. (2020) agrees that obstacles hindering the Open and Distance Learning program's success in Kenyatta University. It was found out that key institutional challenges facing the programme are inadequate learner support services, delay of materials used for study and insufficient

support in academic. Moreover, lecturers failed to facilitate units online and course materials were poorly designed. To address the institutional challenge the study recommended strategic initiatives that will strengthen learner support mechanisms.

### 5.2.4 Examining the Impact of e-learning Administration Support Strategy on Learner Goals Achievement

The third objective sought to examine the effect of e-learning administration support strategy on learner goals achievement in the Kenyan universities, Results indicated that e-learning administration support strategy is significantly associated with learner goals achievement. Therefore the null hypothesis was rejected.

### 5.2.5 Relationship Between e-learning Communication Strategy and Learner Goals Achievement

The fourth objective was to examine the relationship between e-learning communication strategies on learner goals achievement in the Kenyan universities. Results indicated that e-learning communication strategy is significantly associated with learner goals achievement. Thus, null hypothesis was rejected. If there is inadequate e-learning content strategy used e-students and e-lecturers are 0.473 times less likely to achieve their goals in education when compared to learners and e-lecturers in universities who have implemented adequate e-learning communication strategy. Results were significant at 5%.

### 5.2.6 The Moderating Role of Change Approach on The association of e-learning Strategies and Learner Goals Achievement in the Kenyan Universities

The moderating role of change approach on the association of e-learning strategies and learner goals achievement in the Kenyan universities was established as the fifth objective. The results showed that change approach is significantly associated with learner goals achievement. Results were significant at 5%. Accordingly, null hypothesis was rejected. If there is inadequate change approach e-students and e-lecturers are 0.256 times less likely to achieve their goals in education when compared to e-students and e-lecturers in universities that have implemented e-learning technology strategy.

The comparison between the multivariate summary model showed that the one with change approach had less deviate score of 349.979 while the summary model without change approach has a higher deviate score of 362.683 thus the one with change approach is better than the model without change approach. It is important to note that the model with less deviate score is better than the one with a higher deviate score. This implies that change approach is a key factor as it had a moderating effect on learner goals achievement. Therefore universities ought to include it in the process of e-learning strategies implementation if they have to achieve learner goals.

## 5.3 Conclusion

The findings indicated that e-learning technology strategy is significantly associated with learner goals achievement. If there is no e-learning technology strategy e-students and e-lecturers are 0.123 times less likely to achieve their goals in education when compared to

e-students and e-lecturers in universities that have implemented e-learning technology strategy. Findings indicated that e-learning content strategy is significantly associated with learner goals achievement. If there is no quality e-learning content strategy e-students and e-lecturers are 0.345 times less likely to achieve their goals in education when compared to learners and e-lecturers in universities who have implemented e-learning content strategy. Results were significant at 5%.

Additionally, results indicated that e-learning administration support strategy is significantly associated with learner goals achievement. Furthermore, the findings showed that e-learning communication strategy is significantly associated with learner goals achievement. If there is inadequate e-learning communication strategy used e-students and e-lecturers are 0.473 times less likely to achieve their goals in education when compared to learners and e-lecturers in universities who have implemented adequate e-learning communication strategy. Results were significant at 5%.

Likewise, the results indicated that change approach is significantly associated with learner goals achievement. Results were significant at 5%. Accordingly, if there is inadequate change approach e-students and e-lecturers are 0.256 times less likely to achieve their goals in education when compared to e-students and e-lecturers in universities that have adequately practiced change approach as they endeavor to achieve learner goals.

As informed by the study findings, evidently, e-learning technology strategy, e-learning content strategy, e-learning communication, change approach and learner goals

achievement have a statistically significant relationship, results being significant at 5%. However, it is also evident that if there is no quality e-learning technology, if there is no quality e-learning content strategy, if there is inadequate e-learning communication strategy used and if there is inadequate change approach e-students and e-lecturers were less likely to achieve their goals in education when compared to e-students and e-lecturers in universities that have quality e-learning technology, quality e-learning content, adequate e-learning communication plus adequate change approach as they endeavor to achieve their goals in education.

The findings are in agreement with that of Vershitskaya et al. (2020) which affirms that despite the many initiatives to support online learning, many of the strategies were inadequately achieved for successful learner goals achievement due to inadequate technology strategies, poor content strategy, insufficient administrative support strategies, poor communication marketing strategies and inadequate change approach. Consequently, Universities have come up with various e-strategies to deal with great market forces emanating from the dynamic technological advancement, progressively more varied learner groups with varying requirements in addition to anticipations as well as intensified demands aimed at innovative plus diverse facilities and programs.

### 5.4 Contribution

Based on the study findings, the author proposed and developed a possible e-learning strategy implementation model linking the independent and moderating variables that were all found to have a statistically significant relationship with the dependent variable.

That is, a model that linked e-learning technology, e-learning content, e-learning administrative support strategies, e-learning communication strategies and change approach which is the moderating variable to the learner goals achievement in the Kenyan Universities. The model will help university e-managers to identify, develop a successful e-learning strategy implementation and plan for an effective change approach to achieve learner goals. Additionally, other levels of education can use the model to successfully identify, develop a successful e-learning strategy implementation and plan for an effective change approach to achieve learner goals.

The variables on the proposed model have been conceptualized as follows: e-learning technology strategy has been conceptualized as the deliberate identification and implementation of individual technological strengths and opportunities in the internal and external environment to enable e-learners to achieve their goals. In the proposed model, approaches of offering e-learning content in an e-learning classroom have been classified as one, Synchronous referring to an approach that is live streamed, real time, usually planned, expedited and learning oriented interaction. The second approach is asynchronous which is not limited by time, location and not real time. The two methods were of focus under technology strategy. However, despite the many strategic e-learning technology initiatives by the universities, inadequate implementation of ICT infrastructure has caused many challenges in the learner goals achievement and Kenyan universities have not been able to deal with the gap in enactment (Murphy, 2020). In the proposed model, e-learning technology strategy is considered a success if Internet connectivity, e-

learning technologies which includes synchronous, asynchronous and LMS assist students in the application of ICT to achieve their goals.

On the conceptualization of e-learning content strategy, e-learning institutions ought to scan their environment, identify and define competitive source of e-learning content whether bought or self-developed, develop delivery materials to be used and the mode of delivery that promotes student-instructor interactivity. This should be greatly influenced by resources and modern e-learning technology available for successful implementation to achieve learner's goals. Content strategy was deliberated to be a suitable e-learning strategy to achieve learner goals if instructors or content designers are able to and keen in developing adequate online units content that achieve learning goals by increasing learner's expectations and satisfaction, is appropriate to learner's understanding, abilities and skills to make best use of the available ICT infrastructure.

Additionally, content developed should be deliverable through various delivery materials such as course modules, audio CDs, computers, tablets and phones and through various mode of delivery which includes but not limited to online, course modules, text books and lecture notes, video conferencing, Moodle, skypes, LMS or blended. Source of content denoting where students get their e-learning materials from, whether from experts or university faculty instructors were of focus in the proposed possible model.

In communication strategy two factors are focused on: interactive student-instructor online communication and marketing communication to the potential e-learners to create awareness of the courses available and how they would be of benefit to them. SWOT

analysis is very vital to come up with the competitive marketing strategies. In the proposed model, communication as an element of e-learning strategy is considered successful in the achievement of learner goals outcome if instructors are able to interact well with students online to handle various queries, give career guidance and offer guidance and counseling while marketing communication is considered effective if all marketing and promotional activities are effective enough to win potential e-learners into the e-learning mode of learning.

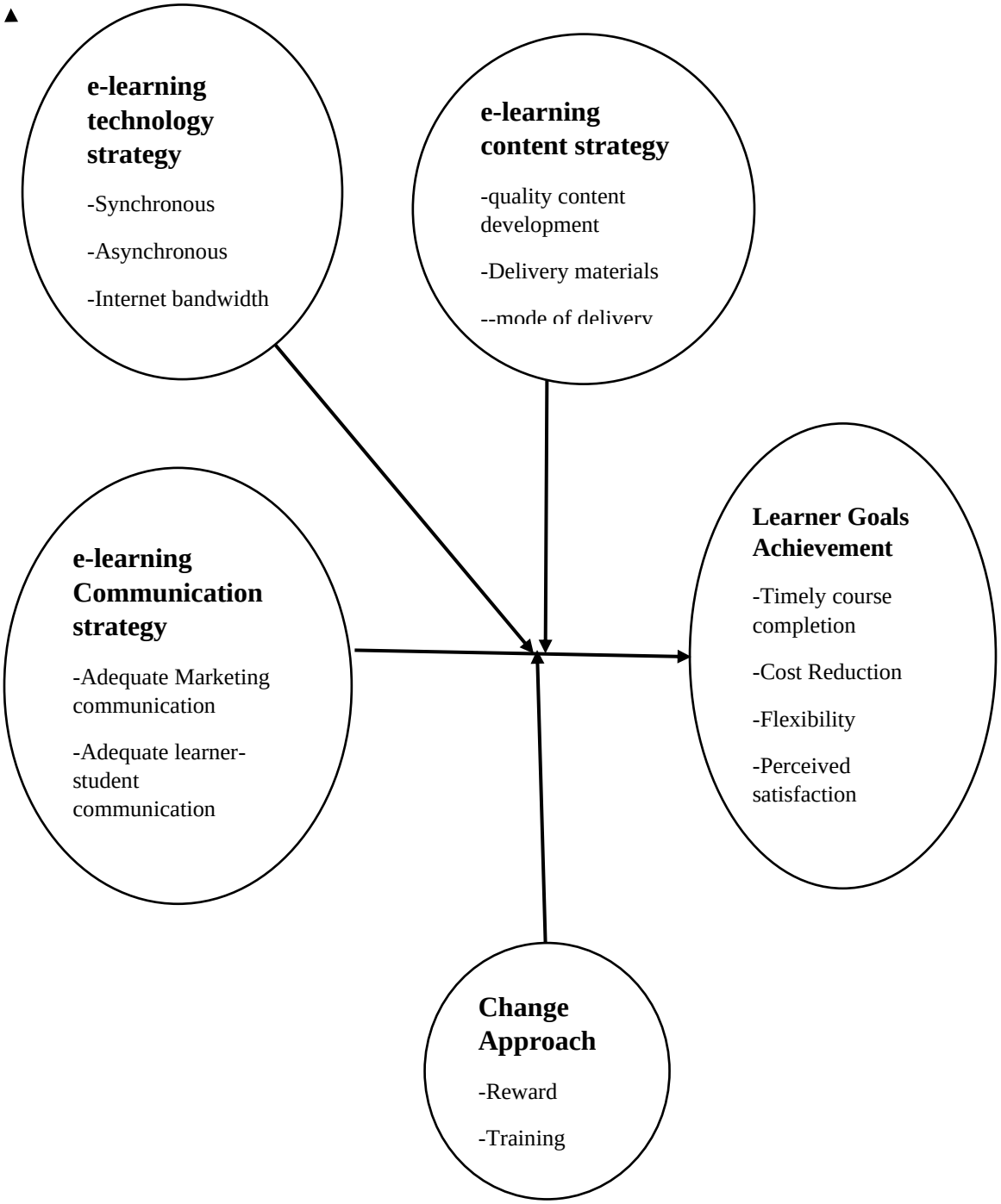
Change approach has been conceptualized as the planned activities and programs implemented by the university such as end-user training, giving rewards and those that deal with resistance to ensure a successful implementation of e-learning strategies to achieve learner's goals. Change approach is considered successful if all the initiatives such as training the users on how to usage e-learning technology, developing and delivering e-learning content, giving incentives to the instructors and initiatives to curb resistance to change have been adequately implemented.

Learner goals achievement is considered as achieved if there is one e-learning course flexibility whereby students can study from anyplace, any-time and at their own speed facilitated by the integration of all the e-learning strategies' elements, two, perceived satisfaction which accounts for personal experience with all the e-learning strategies namely content, technology, administration and support, and communication .and finally the ability to complete courses undertaken within the time frame stipulated in the course programme while saving on cost.

e-learning in this case refers to the usage of emerging e-learning technologies such as synchronous, asynchronous and LMS for effective services in learning and student support. Inclusive is content delivery through internet, intranet, audio, videotapes, satellite broadcast, interactive TV and CD-ROM to ensure successful blended learning for achievement of learner goals in Kenyan universities. Similarly, e-learning strategy refers to deliberate identification and implementation of plans identified through SWOT analysis which could be short term, below five years or long term, above five years to set programs that are used by a university to achieve predetermined learner goals achievement

**Figure 5.1**

*Proposed e-learning Strategy Implementation Model*




Source: Research Data (2022)

The figure 5.1 shows an empirical strategy implementation model that was proposed and developed linking e-learning technology strategy, e-learning content strategy, e-learning communication, change approach and learner goals achievement in the Kenyan universities. The model was developed based on the study findings that e-learning technology strategy, e-learning content strategy, e-learning communication and change approach have a significant relationship with learner goals achievement at 5% significance level. Findings indicated that e-learning administration support strategy is not significantly associated with learner goals achievement which could be attributed to e-students and e-lecturers self- preparedness for e-learning, implying that when e-students and e-lecturers decide to do e-learning they are well self-prepared on how to use the university's website, are conversant with e-technology use and are armed with information of most of the services that would require e-learning administration support services. Consequently, this variable was not considered in the development of the proposed model.

Additionally, other insights from the study findings largely contributed to the development of the proposed strategy implementation model. For instance, The findings indicated that if there is no e-learning technology strategy e-students and e-lecturers are 0.123 times less likely to achieve their goals in education when compared to e-students and e-lecturers in universities that have implemented e-learning technology strategy, if there is no quality e-learning content strategy e-students and e-lecturers are 0.345 times less likely to achieve their goals in education when compared to learners and e-lecturers in universities who have implemented e-learning content strategy, if there is inadequate e-learning communication strategy used e-students and e-lecturers are 0.473 times less likely to

achieve their goals in education when compared to learners and e-lecturers in universities who have implemented adequate e-learning communication strategy and if there is inadequate change approach e-students and e-lecturers are 0.256 times less likely to achieve their goals in education when compared to e-students and e-lecturers in universities that have adequately practiced change approach as they endeavor to achieve learner goals.

Therefore, under the guidance of the study findings, the author developed a possible strategy implementation model that will help university e-managers to identify, develop a successful e-learning strategy implementation while planning for an effective change approach to achieve learner goals. Guided by this model, universities ought to make a deliberate move to do SWOT analysis to come up with quality e-learning technology, quality e-learning content, adequate e-learning communication strategies and adequate change approach to keep up to the pace thus more likely to achieve learner goals.

**5.5 Recommendations**

The study is a justification of the fact that e-learning technology strategy, e-learning content strategy, e-learning communication, change approach and learner goals achievement have a statistically significant relationship. Therefore, guided by the study findings, Kenyan universities ought to do SWOT analysis to come up with efficient and effective e-learning technology strategy, e-learning content strategy, e-learning communication and change approach for successful learner goals achievement. Learning institutions in other ranks for instance primary and secondary schools in addition to

tertiary colleges can tap into the findings and recommendations to successfully implement e-learning strategies in their institutions.

An empirical model was proposed and developed linking e-learning technology strategy, e-learning content strategy, e-learning communication, change approach and learner goals achievement in the Kenyan universities that will help university e-managers to identify, develop a successful e-learning strategy implementation and plan for an effective change approach to achieve learner goals in Kenyan universities.

### 5.3.4 Further research area

From the findings it is evident that e-learning administrative support strategy and learner goals achievement has no statistical significant relationship between them. Further study can be carried out to include e-learning management as respondents to find out whether findings will be different. Additionally, using the same variables to find out whether there will be any change in the findings, a similar study can be done at other educational levels.

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# APPENDICES

## Appendix 1: Letter of Introduction

The Post graduate coordinator,

KeMU, Nairobi campus.

Dear Sir/Madam,

**RE: COLLECTION OF RESEARCH DATA**

My name is Eunice Gacheri a student pursuing a Doctorate degree in Business Administration – strategic management option at Kenya Methodist University. Currently, I' am carrying out a research on "**The moderating role of change approaches on the relationship between e-learning strategy and learner goal achievements in the universities in kenya"** I am in the process of gathering relevant data for this study and your organization has been identified as one of the respondents.

I therefore kindly request you to take some time to assist me with the requisitioned data. I wish to assure you that the data availed through electronic means or otherwise will be treated with confidentiality and will be used solely for academic purpose of this study.

I thank you in advance for your time and responses. It will be appreciated if you can avail the data within the next three days to enable early finalization of the study.

Yours Sincerely,

Eunice Gacheri

**Appendix II: Letter of Authorization**

The Post graduate coordinator,

KeMU, Nairobi campus.

**NAIROBI**

Dear Sir/Madam,

**RE: ACADEMIC RESEARCH**

I am a student at Kenya Methodist University pursuing PhD in strategic management. I am required to undertake a thesis entitled "**The moderating role of change approaches on the relationship between e-learning strategy and learner goal achievements in the universities in kenya"** in partial fulfillment for the award of the doctoral degree. I am kindly requesting for your assistance in making my research a success by permitting me to collect relevant data from your organization. All the data collected will be treated with utmost confidentiality and will be used exclusively for the purposes of this academic research.

Thank you

Yours faithfully,

Eunice Gacheri.

**Appendix III: Questionnaire**

**QUESTIONNAIRE FOR e-LECTURERS AND e-STUDENTS IN KENYAN UNIVERSITIES**

I seek to conduct a study on the influence of e-learning strategy on learner goals achievement: moderating role of change approach on their relationship in Kenyan universities. As an instructor of e-learning courses in your institution or an e-learner, you are kindly requested to fill in this questionnaire. Your responses will be kept confidential and will only be used for purposes of this study

**SECTION A: RESPONDENT'S GENERAL INFORMATION**

1. What is the name of your university? _____

2. What is your gender? (Tick appropriately)

Male [ ] Female [ ]

3. Are you an e-student or an e-lecturer? (Tick appropriately)

e-Student [ ] e-lecturer [ ]

**SECTION B: e-learning STRATEGIES**

1. In relation to your experience at the university, tick the most appropriate response to the statements made in the table below;

Where 1=Strongly Disagree; 2=Disagree; 3=Neutral; 4=Agree and 5=Strongly Agree.

| | **e-learning technology strategy** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|---|
| 1 | In the last two years, university has strategically invested in quality internet bandwidth | | | | | |
| 2 | The university has a clear strategy on how to invest and improve on synchronous e-learning technology (web-conferencing Apps such as zoom, you tube live, live Q&A on social media | | | | | |
| 3 | The university has invested on creating quality asynchronous e-learning technology (e.g. audial, video, CD-ROMs, uploaded course modules) | | | | | |
| 4 | e-directors ensure that e-programme is managed and supported by the best and most up-to-date technology available | | | | | |
| 5 | The university strategized to have in place an up-to-date LMS(e.g. Moodle) for successful e-learning | | | | | |

2. In relation to your experience at the university, to what extent do you agree with the following statements? (Tick the most appropriate)

Where 1=Strongly Disagree; 2=Disagree; 3=Neutral; 4=Agree and 5=Strongly Agree.

| | **e-learning content strategy** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|---|
| 1 | Learning modules are developed and uploaded on LMS are of good quality content developed encourages learner-student interactivity | | | | | |
| 2 | e-directors periodically assess and update quality of course content because of technology dynamism and changing e-learner's demands | | | | | |
| 3 | The university has invested in competitive content development that encourages learner-student online interactivity | | | | | |
| 4 | There is a good selection of up-to-date course online delivery systems for delivering lessons either synchronously or asynchronously | | | | | |
| 5 | Changes to programs are made based on faculty, student input and market needs | | | | | |

3. In relation to your experience at the university, tick the most appropriate response to the statements below;

Where 1=Strongly Disagree; 2=Disagree; 3=Neutral; 4=Agree And 5=Strongly Agree.

| | **e-administration support strategy** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|---|
| 1 | Frequent training and refresher courses for ICT team has helped them to offer top notch support services | | | | | |
| 2 | There is adequate support for online student registration, billing and payment system because administration support staff have been well trained | | | | | |
| 3 | There is enough funds allocated to the administration support office for e-student and e-instructors support better | | | | | |
| 4 | The university has hired enough administration support team, a strategy of ensuring e-learning support services round the clock | | | | | |
| 5 | The university has empowered administration support staff with adequate skills to ensure effective and well supported campus network | | | | | |

4. In relation to your experience at the university, tick the most appropriate response to the statements made in the table below;

Where 1=Strongly Disagree; 2=Disagree; 3=Neutral; 4=Agree And 5=Strongly Agree.

| | **e-communication** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|---|
| 1 | The university has put in place a marketing strategy by investing in e-learning TV, social media and colourful brochures promotions, road shows, university open days | | | | | |
| 2 | There is a software for interactive online communication between e-instructor and e-learner on career advice, e-learning technology usage and feedback | | | | | |
| 3 | The university organizes educational events by preparing a series of lectures and seminars intended for prospective students | | | | | |
| 4 | There is a university's website where all the events and e-courses are advertised | | | | | |
| 5 | The university has created a strategic relationship with the public through materials for prospective students, conferences attended by public and experts appearing on the media. | | | | | |

**SECTION C: LEARNER GOALS ACHIEVEMENT**

To what extent do you agree or disagree with each of the following statements? (Tick as applicable)

Where 1=Strongly Disagree; 2=Disagree; 3=Neutral; 4=Agree and 5=Strongly Agree

| | **Learner goals achievement** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|---|
| 1 | E-learning mode of study provides learning flexibility. | | | | | |
| 2 | I have always completed my e-learning courses at the appropriate time | | | | | |
| 3 | E-learning has helped me to save money from reduced e-learning tuition fee and from fare and food expenses | | | | | |
| 4 | e-learning technology used, quality e-learning content offered, mode of delivery and administrative support have collectively assisted me in achieving my goals satisfactorily | | | | | |

**SECTION D: CHANGE APPROACH**

Kindly indicate the extent to which you agree or disagree with each of the following statements. (Tick as applicable)

Where 1=Strongly Disagree; 2=Disagree; 3=Neutral; 4=Agree and 5=Strongly Agree

| | **Change approach** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|---|
| 1 | The university rewards the best e-learners, e-instructors and e-learning change champion groups | | | | | |
| 2 | Every time there is any e-learning strategy implementation, end-users are trained about it | | | | | |
| 3 | The e-director constantly communicates e-strategies to be implemented early enough to all stakeholders | | | | | |
| 4 | Training, follow ups and mentorship on new e-technological skills is continuous throughout the e-strategies implementation period | | | | | |

**Appendix IV: Distribution of Licensed Universities in Kenya**

| **University Category** | **2018** |
|---|---|
| Public chartered universities | 31 |
| Public Universities Constituent Colleges | 6 |
| Private Chartered Universities | 18 |
| Private Universities Constituent Colleges | 5 |
| Private Universities with LIA | 14 |
| **Totals** | 74 |

Source: CUE (2018)

**Appendix V: List of 16 Kenyan universities offering e-learning, percentage of total e-learners and corresponding sample from proportionate sampling**

| **University** | **Total enrolled e-learners** | **% of total e-learners (number of e-learners per university/total number of e-learners in all universities)** | **Sample (% of total e-learners *394)** |
|---|---|---|---|
| Mount Kenya University | 4,024 | 15 | 59 |
| Kenya Methodist University | 3,705 | 13.8 | 54 |
| Jomo Kenyatta University of Agriculture and Technology (JKUAT) | 2,700 | 10.1 | 40 |
| University of Nairobi | 3,158 | 11.8 | 46 |
| Kenyatta University | 3,350 | 12.5 | 49 |
| Kenya College of Accountancy University (KCAU) | 1,500 | 5.6 | 22 |
| Egerton University | 740 | 2.77 | 11 |
| Strathmore University | 1,225 | 4.58 | 18 |
| Daystar University | 1,190 | 4.4 | 17 |
| Catholic University | 1,060 | 3.96 | 16 |
| African Nazarene University | 1,145 | 4.27 | 17 |
| Maseno University | 684 | 2.55 | 10 |
| Moi University | 720 | 2.69 | 11 |
| Multimedia University of Kenya | 540 | 2.02 | 8 |
| St. Paul's University | 370 | 1.38 | 6 |
| Masinde Muliro University of Science and Technology (MMUST) | 650 | 2.4 | 10 |
| **Total** | **26,761** | **100%** | **394** |

Source: University Registrar Academic Affairs and university websites

**APPENDIX VII: List of 16 Kenyan universities offering e-learning, percentage of total e-lecturers and corresponding sample from proportionate sampling**

| University | Total enrolled e-learners | % of total e-learners (number of e-lecturers per university/total number of e-lecturers in all universities) | Sample (% of total e-lecturers *351) |
|---|---|---|---|
| 1. Mount Kenya University | 450 | 15.8 | 56 |
| 2. Kenya Methodist University | 175 | 6.14 | 22 |
| 3. (JKUAT) | 110 | 3.86 | 14 |
| 4. University of Nairobi | 420 | 14.75 | 52 |
| 5. Kenyatta University | 528 | 18.5 | 65 |
| 6. Kenya College of Accountancy University (KCAU) | 78 | 2.73 | 10 |
| 7. Egerton University | 105 | 3.69 | 13 |
| 8. Strathmore University | 98 | 3.44 | 12 |
| 9. Daystar University | 78 | 2.73 | 10 |
| 10. Catholic University | 66 | 2.31 | 8 |
| 11. African Nazarene University | 83 | 2.91 | 10 |
| 12. Maseno University | 105 | 2.9 | 10 |
| 13. Moi University | 361 | 12.68 | 44 |
| 14. Multimedia University of Kenya | 65 | 2.28 | 8 |
| 15. St. Paul's University | 45 | 1.58 | 5 |
| 16. Masinde Muliro University of Science and Technology (MMUST) | 80 | 2.8 | 10 |
| **Total** | **2847** | **100%** | **351** |

Source: University Registrar Academic Affairs and university websites

**Appendix VIII: List of 16 Kenyan universities offering e-learning that participated in the study**

| Number | University |
|---|---|
| 1 | Mount Kenya University |
| 2 | Kenya Methodist University |
| 3 | Jomo Kenyatta University of Agriculture and Technology (JKUAT) |
| 4 | University of Nairobi |
| 5 | Kenyatta University |
| 6 | Kenya College of Accountancy University (KCAU) |
| 7 | Egerton University |
| 8 | Strathmore University |
| 9 | Daystar University |
| 10 | Catholic University |
| 11 | African Nazarene University |
| 12 | Maseno University |
| 13 | Moi University |
| 14 | Multimedia University of Kenya |
| 15 | St. Paul's University |
| 16 | Masinde Muliro University of Science and Technology (MMUST) |

Source: CUE (2018)

**Appendix IX: Study Work Plan 2020-2022**

| **Activity** | **Jan-Feb 2020** | **March-Apr 2020** | **April-May 2020** | **May-June 2020** | **July-Aug 2020** | **Sep-Dec 2020** | **Jan-May 2021** | **June 2021-June 2022** | **July-November 2022** |
|---|---|---|---|---|---|---|---|---|---|
| Concept paper preparation | | | | | | | | | |
| Preparation of thesis | | | | | | | | | |
| Thesis defense | | | | | | | | | |
| Data collection | | | | | | | | | |
| Analyses and data presentation | | | | | | | | | |
| Final report defense | | | | | | | | | |
| Doing corrections | | | | | | | | | |
| Final document submission | | | | | | | | | |

**Appendix X: Research budget**

| No. | Item | Units | Cost Per Unit | Cost (KES) |
|---|---|---|---|---|
| 1. | Transport and airtime Expenses | | | 60,000/= |
| 2. | Library and Internet Expenses | 30,000 MB | KES 1 | 30,000/= |
| 3. | Data Collection Expenses | 10 Assistants | 25,000 | 250,000/= |
| 4. | Data Analysis | | | 60,000/= |
| 5. | Printing | 17 copies | 1,500 | 25,500/= |
| 7. | Binding Charges | 11 copies | 2,000 | 22,000/= |
| | **Sub Total** | | | **447,500/=** |
| 8. | Miscellaneous (10%) | | | 30,000/= |
| | **Grand Total** | | | **477,500/=** |

## Appendix XI: KeMU Research Letter

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

Our ref: NAC/PHD/1/2021/1

18th JANUARY 2021

Commission Secretary,
National Commission for Science, Technology and Innovations,
P.O. Box 30623-00100,
NAIROBI.

Dear Sir/ Madam,

RE: EUNICE GACHERI THIANKOLU ( BUS-4- 0458-1/2018)

This is to confirm that the above named is a bona fide student of Kenya Methodist University undertaking a PhD in BUSINESS ADMINISTRATION. She is conducting a research titled : INFLUENCE OF e-LEARNING STRATEGY ON LEARNER GOALS ARCHEIVEMENT IN KENYAN UNIVERSITIES : MODERATING ROLE OF CHANGE APPROACH.

We confirm that her thesis proposal has been defended and approved by the university.

In this regard, we are requesting your office to issue a permit to enable her collect data for his Ph.D. dissertation.

Any assistance accorded to her will be appreciated.

Yours faithfully,

Prof. Evangeline Gichunge PhD.
ASS DIRECTOR, RESEARCH DEVELOPMENT AND POSTGRADUATE STUDIES

Encl.

## Appendix XII: NACOSTI Letter

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Ref No: **903868**

Date of Issue: **04/February/2021**

**RESEARCH LICENSE**

**This is to Certify that Ms. EUNICE GACHERI THIANKOLU of Kenya Methodist University, has been licensed to conduct research in Nairobi on the topic: INFLUENCE OF e-LEARNING STRATEGY ON LEARNER GOALS ACHIEVEMENT IN KENYAN UNIVERSITIES: MODERATING ROLE OF CHANGE APPROACH for the period ending: 04/February/2022.**

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