UNIVERSITY *of* NICOSIA

An Integrated Framework of the Effect of Critical Success Factors, Barriers, and Management Actions on Instructor Acceptance of E-learning in Higher Education

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A thesis submitted to the University of Nicosia

in accordance with the requirements of the degree of

PhD (Doctor of Philosophy) in Business Administration

School of Business

February /2024

Abstract

This Thesis explores the role of institutional management actions on instructors' acceptance of e-learning as a viable mode of course delivery in higher education. Specifically, this study examines the effect of higher education instructor perceptions of e-learning critical success factors, barriers, and associated management actions on instructors' motivation to accept and engage in e-learning in the higher education industry.

Initially, the Thesis engages in a narrative and systematic literature review analysis, after which a preliminary conceptual framework is created, that identifies existing knowledge and gaps, and leads to its empirical testing in the Cyprus higher education sector. The primary research follows a critical realism point of view and methodologically uses a qualitative technique. Semi-structured interviews were used as the method for collecting qualitative research data for this study, and 20 informants took part. By identifying patterns, themes, and subthemes, the data are analyzed using the thematic template analysis technique. On the basis of these and taking into account all significant empirical findings, the final conceptual framework has been constructed and displayed.

The research results pinpoint the positive outcomes of supportive institutional management actions on instructor acceptance of e-learning; themselves associated with addressing the issues of enabling e-learning critical success factors to be achieved, and mitigating negative effects associated with this mode of course delivery. Further, it is found that the positive effects of appropriate institutional management actions on instructor acceptance of e-learning is mediated by intrinsic and extrinsic motivation factors, arising as a result of these actions. Instructor perceptions toward institutional management actions are generally positive and the research shows that this contributes towards instructors' positive views of e-learning and willingness to adopt it. Results also show that if instructors do not perceive institutional management actions positively, this will not lead to outright rejection of e-learning, however instructors will not be positively reinforced toward accepting, engaging with, and committing to e-learning on a continual basis.

By and large, the research's conclusions provide significant contributions to both theory and practice. As an academic contribution to knowledge, the experimentally validated final framework defines the positive outcomes associated with instructor acceptance of e-learning and uncovers original correlations between e-learning management and instructor views, with benefits for the wider higher education e-learning environment. It establishes the framework for producing both internal and external advantages for higher education institutions. Internal institutional benefits are tied to the improvement of e-learning quality and the increase of instructor motivation for its acceptance. This in turn leads to tangible external benefits as well since educational quality is one of the main factors affecting a higher education institution's reputation and brand image.

Dedication

To my beautiful family who gifted me with unconditional support and love through this journey.

Acknowledgements

I would like to extend my deepest gratitude to my supervisors, Prof. Petros Lois, Dr. Ifigenia Georgiou and Dr. Evangelos Tsoukatos for their ongoing support and guidance through my PhD experience. Their valuable recommendations and constructive feedback greatly helped me to improve my research skills and complete this Thesis. Their contribution, expertise and knowledge are very much appreciated.
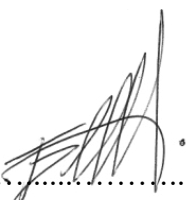
I would also like to express my deep appreciation to Prof. Demetris Vrontis who was a constant source of wisdom, motivation, and inspiration during my journey.

I also extend my deep appreciation to my lovely wife, for her unrelenting support, patience, and encouragement during this demanding and enriching part of my life.
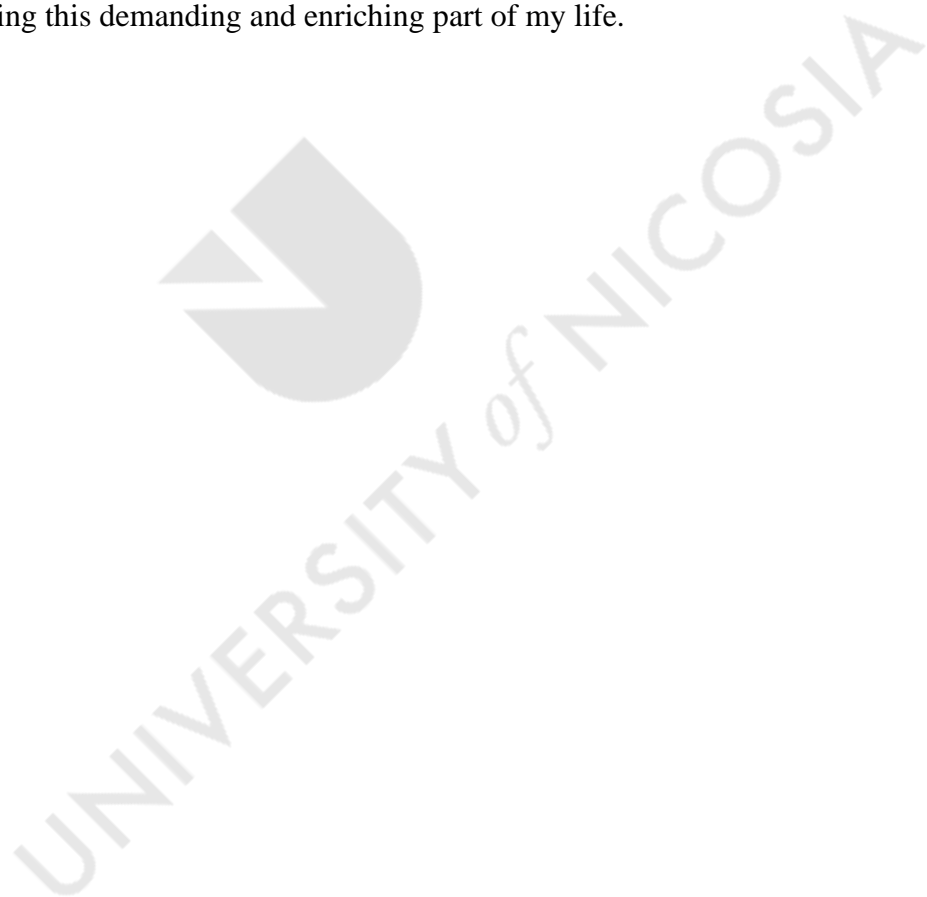
Declaration

I declare that the work in this thesis was carried out in accordance with the regulations of the University of Nicosia. This thesis has been composed solely by myself except where stated otherwise by reference or acknowledgment. It has not been previously submitted, in whole or in part, to this or any other institution for a degree, diploma or other qualifications.

Signed ....   Date: February 26th, 2024

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Author's Publications

Conference Papers

Millidonis, T. (2022) "Exploring the Prioritization Process of Critical Success Factors in Technology Enhanced Learning: A Systematic Review and Future Research Directions", *INTED2022 Proceedings*, pp. 8881-8889. doi: 10.21125/inted.2022.2318

Millidonis, T. and Lois, P. (2022) "The Importance of Instructors' Stakeholder Perspectives towards Critical Success Factors and Barriers to Effective E-learning Course Delivery in Higher Education". *Sustainable Business Concepts and Practices: 15th Annual Conference of the EuroMed Academy of Business, EuroMed Institute*. pp. 602-614. ISBN: 978-9963-711-96-3

The latter work has received the ***Conference Best Student Paper Award*** from the EuroMed Academy of Business.

Millidonis, T., Lois, P, Georgiou, I. and Tsoukatos E. (2023) "How Teachers are Affected by Institutional Actions Aiming to Reduce E-learning Barriers in Higher Education", *INTED2023 Proceedings*, pp. 1527-1536, doi: 10.21125/inted.2023.0435

Journal Articles

Millidonis, T., Lois, P, Georgiou, I. and Tsoukatos E. (2023) 'How Teachers are Affected by Institutional Actions Aiming to Enhance E-Learning Effectiveness in Higher Education', *International Journal of Educational Management,* Accepted 21st July 2023, doi: 10.1108/IJEM-09-2022-0371

Millidonis, T., Lois, P, Georgiou, I. and Tsoukatos E. (2024) 'An Integration of Success Factors, Institutional Actions, and Instructors' Acceptance of E-learning in Higher Education: Systematic Review and Conceptual Framework', *EuroMed Journal of Business,* Under Review

Conference Presentations

Millidonis, T. (2022) "Exploring the Prioritization Process of Critical Success Factors in Technology Enhanced Learning: A Systematic Review and Future Research Directions", *16th International Technology, Education and Development Conference INTED2022,* 7-8 March 2022, held virtually.

Millidonis, T. and Lois, P. (2022). "The Importance of Instructors' Stakeholder Perspectives towards Critical Success Factors and Barriers to Effective E-learning Course Delivery in Higher Education", *15th Annual Conference of the EuroMed Academy of Business: Sustainable Business Concepts and Practices,* 21-23 September 2022, held in Palermo, Italy.

Millidonis, T., Lois, P, Georgiou, I. and Tsoukatos E. (2023) "How Teachers are Affected by Institutional Actions Aiming to Reduce E-learning Barriers in Higher Education", *17th International Technology, Education and Development Conference INTED2023,* 6-8 March 2023, held in Valencia, Spain.

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Abbreviation Index

BI	Behavioral Intention
CC	Course Content
CR	Critical Realism
CSF	Critical Success Factor
ES	Ease of System Access
HE	Higher Education
HEI	Higher Education Institution
IC	Instructor Characteristics
ICT	Information and Communication Technologies
ID	Instructional Design
IQ	Interview Question
IS	Information System
KM	Knowledge Management
LQE	Learning Quality and Environment
PEOU	Perceived Ease of Use
PU	Perceived Usefulness
RO	Research Objective
RQ	Research Question
SC	Student Characteristics
SF	Social Factors
STC	Support and Training Conditions
TAM	Technology Acceptance Model
TI	Technology Infrastructure
VLE	Virtual Learning Environment

CHAPTER 1 INTRODUCTION

1.0 Introduction

E-learning is a broad phrase that refers to a variety of electronic technologies (TV, radio, CD-ROM, DVD, mobile phone, Internet) in educational settings, with a focus on web-based learning. Hundreds of scholarly articles, books, conferences, and symposia have been dedicated to investigating the wide range of applications of modern technology in educational settings from kindergarten to universities, from the public sector to the private and corporate worlds, over the previous two decades (Guri-Rosenblit and Gros, 2011). In the current technological and social landscape, there is a plethora of emerging themes regarding e-learning methods in organizations. The research focus nowadays is not so much on the basic advantages e-learning offers over traditional forms of education, but rather on a lot more complex assortment of advantages, disadvantages, challenges, critical success factors (CSFs), theories, and models which need to be examined from the stakeholder's perspective (Choudhury and Pattnaik, 2020).

The purpose of Chapter 1 is to provide a broad introduction of the Thesis as well as an outline of the topic under investigation. The chapter opens with a description of the study problem and an overview of the research background (e-learning domain). Subsequently, the researcher presents an introduction to the research gap identified, as well as the research focus. Consequently, the study's aim, objectives and research questions are defined, along with a rationalization of the research focus. Following that, a brief review of the dissertation's significance, theoretical, practical, and methodological contributions is presented. Ultimately, the structure of the Thesis is provided, and the chapter closes with general conclusions and a reference to the next section.

1.1 Background of the study and problem statement

Distance education might be termed as any formal approach to learning in which a majority of the instruction occurs while educator and learner are at a distance from one another (Verduin and Clark, 1991). According to Horton (2000), a fundamental design component of any online education system is to focus on who the learners are, what results are expected of them, how the training is applied and how the degree of success is measured. Online education involves various methods and technologies and in broad terms, it can be described as the delivery of and access to a coordinated collection of learning materials over an electronic medium using a web server to deliver the materials and a web browser to access them (Jolliffe, Ritter and Stevens,

2001). Successful application of online learning at least in theory lowers and even removes the two biggest traditional barriers to continuous learning and improvement: time and money (Schank, 2002). According to Ko and Rossen (2010), online education is so unique because the primary means of communication used is the Internet, thus offering an incredible amount of flexibility to students.

A dramatic development in distance education has taken place in recent times, as online computer-based technology has advanced (Christou, Ktoridou and Zafar, 2016). With this rapid development of technology in the world today, long-distance learning and training is becoming a main study method (Liu *et al.,* 2019).

In the current technological and social landscape, there is an overabundance of emerging themes regarding e-learning methods in organizations (Choudhury and Pattnaik, 2020). Some of the main important emerging themes are those of quality and cost-effectiveness, encapsulated within the framework of critical success factors and barriers for e-learning implementation. According to Naveed *et al.* (2020):

> *CSFs affecting e-learning success are many, hence it is essential to evaluate and prioritize them so that the management providing e-learning can invest, and thereby regulate e-learning infrastructure in an effective manner. CSFs play a key role in e-learning success.* (Naveed *et al.,* 2020, p.20)

Kumar *et al.* (2019) have identified the topic of quality in online courses as the most widespread subject in the extant literature on the subject of successful e-learning implementation. According to da Costa and Pelissari (2017), an educational institution's global image is associated most closely with the perception of its quality and as per San-Martin *et al.* (2020), system quality can be identified as the most indispensable factor that influences organizational impact on continuance commitment to e-learning in higher education. Concerning the theoretical subject of cost-effectiveness, in a study conducted by Bryan *et al.* (2018), four broad areas of cost analysis have been identified: "course and instructors development, technology and infrastructure, support services and administrative services" (Bryan, Leeds and Wiley, 2018: 2). The study further delved into the methodical understanding of how online education costs can be determined, and how cost and affordability messaging can influence the delivery of high-quality online courses and programs. Kumar *et al.* (2019) further state that online

education may possess the capability to significantly reduce overall costs in the medium to long run.

The concept of e-learning stakeholders is also an important emerging theme, since critical success factors and barriers for practical e-learning implementation, could only be effectively judged through the perspective of e-learning stakeholders. Daniela *et al.* (2018) have stated that stakeholders are aware of technology-enhanced learning solutions for improving system sustainability, however, many steps need to be taken towards refining their competence to properly utilize e-learning. According to Msomi and Hoque (2018), stakeholders play a very important role to ensure that e-learning is a success. Information and communications technology is challenging and, therefore, needs the support of all the stakeholders for it to be successful and to minimize the challenges that come with e-learning. Stakeholders have several similar concerns with e-learning which the institutions and local governments need to take seriously and address because these stakeholders have the power to make or break the e-learning initiative. Singh and Hardaker (2017) have identified that whilst senior management is generally developing strategies concerning effective e-learning, this practice occurs with only notional contributions from the remaining stakeholders, so this clearly calls for further stakeholder involvement in the process. Chipere (2017) has proposed a programme development framework based on the principles of stakeholder-centeredness, cost-effectiveness, and operational efficiency toward the achievement of sustainable e-learning. It is therefore important to showcase how improving the understanding of instructor perceptions of e-learning could result in a well-designed e-learning system framework that could ultimately lead to more positive instructors' acceptance and continuous commitment to teaching e-learning courses. This could have far-reaching implications by utilizing extant literature on these topics, obtaining empirical data, and applying criticisms in order to formulate a concrete proposal towards reinforcing the acceptance of e-learning as a viable teaching method, by taking into consideration the instructors' perspective. The researcher will more specifically focus on exploring and understanding how satisfaction of CSFs and the reduction of barriers through appropriate institutional actions, could drive up instructors' acceptance of e-learning.

Illustrative examples of critical success factors (CSFs), barriers, and management actions related to instructor acceptance of e-learning in higher education

The author proceeds to showcase illustrative examples of critical success factors (CSFs), barriers, and management actions related to instructor acceptance of e-learning in higher education. This is performed in an attempt to familiarize the reader with the key concepts and challenges of the present Thesis' main thematic areas, thus promoting a smoother understanding of the subsequent research exploration.

- **Illustrative examples of critical success factors (CSFs) to e-learning in higher education**

In order for e-learning to take place effectively in an online environment, several preconditions must be met (Ahmad *et al.,* 2018). These preconditions are termed as e-learning CSFs and some illustrative examples in higher educations include elements like the presence of a satisfactory learning quality and environment (Almas *et al.*, 2021), high quality instructional design (Ashfaq *et al.,* 2017), robust technology infrastructure (Gupta *et al.*, 2020), and appropriate instructor characteristics (Kordrostami & Seitz, 2021).

- **Illustrative examples of barriers to e-learning in higher education**

Students and instructors have faced numerous obstacles as a result of recent advancements and demands of e-learning (Al-Karaki et al., 2021) since despite the obvious advantages of e-learning, there are a number of barriers to its effective implementation and integration in HE, which are mostly faced by HEIs themselves and have continued to have a negative impact on its effective use (Barclay, Donalds and Osei-Bryson, 2018). Some illustrative examples in higher education include issues such as lack of administrative and technical support (Pedro & Kumar, 2020), lack of student motivation, participation and engagement (Al-Karaki et al., 2021), lack of instructor IT competencies (Kordrostami & Seitz, 2021) and resistance to change (Ives & Walsh, 2021).

- **Illustrative examples of management actions related to instructor acceptance of e-learning in higher education**

E-learning's advantages and benefits must be evaluated against the barriers, difficulties, and challenges encountered in diverse contexts throughout its implementation and management (Barclay, Donalds and Osei-Bryson, 2018). The successful adoption of such a process would

entail involvement of all key stakeholders in HEIs. Some illustrative examples of desirable management actions in this regard include regulations and proper criteria for e-learning course design, a resource planning strategy to meet CSFs according to Kumar (2020), and an e-learning quality framework addressing issues like technical support, course effectiveness, and evaluation data among others.

1.2 The research gap

Many researchers have attempted to examine the impact of critical success factors (CSFs) on e-learning, issues regarding user satisfaction, and the effect that an e-learning system has on the student learning process. To implement an e-learning system effectively, it is important to know the CSFs that play the most vital role, however, currently there is little work performed on the prioritization and ranking of CSFs (Naveed and Ahmad, 2019). In the field of educational research, there is a strong interest in determining which factors affect the outcome of learning and student satisfaction in e-learning, online learning, and blended learning in higher education, however additional research is required to better understand what affects the online learning experiences of stakeholders (Nortvig, Petersen and Balle, 2018). Alhabeeb and Rowley (2018) suggest that the perception of CSF of e-learning differs between academic staff and students. The former tend to place more importance on student characteristics, the e-learning system, and the experience of the system whereas for students, the most important three CSFs are technology infrastructure, instructor characteristics, and student characteristics in order of importance. Given the diversity of findings from the different studies on the CSFs for e-learning, there is scope for considerable further research, to ascertain the factors that contribute to this diversity. Alongside examining and prioritizing the CSFs, the researcher has considered the importance of the institutional factors prevalent in higher education institutions that affect the quality of the e-learning approach. As stated by Kumar *et al.* (2019), this field of research has already attracted business scholars' interest, but the scope of themes and topics remains narrow and there is still opportunity for new research in terms of the institutional factors that promote the adoption of novel models and approaches to educational delivery.

Delving deeper into the research topic of e-learning critical success factors, the researcher has examined articles focusing on the human and social aspects that need to be addressed within online education. According to Olasina (2019), extant literature suggests that e-learning policy lacks exposure to human and social factors. The researcher supports the view that it is

essentially social issues that are at the core of addressing concerns of proper implementation of online learning in contemporary society, rather than further technological investment. As Graham (2018) suggests, research continues to represent the position that the lack of social interaction is a significant obstacle to the positive experience of online learning. On the other hand, technological advancements over the last few decades have been so overwhelming that any further excessive investment would seem to bring about diminishing returns. Adekola *et al.* (2017) argue that there is a notion that technology is frequently seen as the solution to an indeterminate problem but focusing on student learning is what should remain paramount. Supporting this line of thinking, Graham (2018) states that the concerns associated with e-learning and related requirements are no longer essentially technological but human. Furthermore, pedagogy must still be a primary concern, overlapping with education, but social factors should remain high on the priority list, particularly because human concerns are immensely relevant, and learning has been and still remains an innately social endeavor.

Addressing human and social factors such as motivation, satisfaction, engagement, and interactions are vital when it comes to e-learning acceptance, and the evident lack of literature focused on proper implementation might be indicative of a misalignment between meeting critical success factors and appropriate investment. This also creates barriers for e-learning. One of the key human and social barriers indicated by extant research is the lack of stakeholder motivation to engage in e-learning. Taking into account the negative connotations and broader literature suggestions that students and instructors might engage with e-learning to the impairment of engaging more broadly with the act of learning and teaching, according to Dunn and Kennedy (2019), a significant path for future research could be to examine why these stakeholders might opt not to be engaging with e-learning. Another avenue for future research under the theoretical umbrella of motivation is how the adoption of a synchronous mode of class delivery and blended learning components could serve to reinforce stakeholder incentives. Further research is needed to understand the motivating reasons for attending synchronous virtual classes (Nieuwoudt, 2020), and it should explore the mediating effect of regularly scheduled class sessions, face-to-face and synchronous online, on stakeholder motivation (Trout, 2020). The topic of motivation should also be addressed from the point of view of academic staff since their involvement with e-learning is vital for the reinforcement of e-learning continuance commitment by bridging the divergent perception with students (Alhabeeb and Rowley, 2018). As per Kumar *et al.* (2019), they have not encountered a sufficient number of studies that look at perceptions and attitudes of instructors in terms of

online education, therefore exposing a need for current research to focus on potential factors affecting these perceptions and on methods of how to facilitate instructors' acceptance of online education. Extant literature has also shown a need to consider integrating the emotional components of motivational factors to better understand the intentions of academic staff to use e-learning (Chin *et al.,* 2020).

1.3 Research focus

The current research will attempt to ascertain whether social factors governed by instructor motivation, affect the eventual acceptance of e-learning from the viewpoint of instructors, which leads to the successful implementation of e-learning. Human and social factors in online education, as identified by Chavoshi and Hamidi (2019), are determinants that need to be addressed in terms of encouraging acceptance of e-learning.

In order to more profoundly understand the concept of e-learning acceptance from the instructors' perspective, current studies need to evaluate the most important CSFs, barriers, benefits and challenges present in the e-learning landscape. According to Naveed and Ahmad (2019), the most significant barriers or challenges for e-learning need be identified, and likewise, the relationship between barriers and CSFs could be recognized in order to set management priorities. Aside from human and social barriers, it must be considered that financial barriers of course also play a major part in the eventual acceptance and success of an e-learning system. According to Meinert *et al.* (2019) in terms of e-learning, restricted economic analyses are currently being undertaken most likely because educators opt to concentrate on content delivery and educational impact rather than on generating cost data. However, an increasing evidence base for e-learning cost data may encourage more research into different types of economic evaluations, in order to be able to demonstrate value and thus build potential business cases for future e-learning investment. Using improved cost data available from contemporary studies and by contrasting the experiences of students and educators, further analysis is needed to establish perceptions of cost and benefit within a holistic framework. Merging the concepts of success factors, challenges, and quality in an integrated framework, as perceived by instructors in HE, should be a key objective of cutting-edge research. As outlined by Bryan *et al.* (2018), while educational affordability is a worthy objective, the aspiration to minimize student costs might create inadvertent consequences. A topic that should be at the pinnacle of the debate regarding educational affordability is whether

high-quality online courses and services could be retained, while at the same time achieving more student affordability, and how these concepts affect instructors' motivation to teach e-learning courses.

The present research focuses on a scientific investigation converging e-learning success factors, barriers, HEI management actions, and instructors' acceptance of e-learning, into an integrated framework and examining how these elements interact with each other. Attention is placed on instructors' reasoning behind prioritization of CSFs and barriers that need to be addressed by institutional management, in order to ensure that the various elements are implemented and combined in such a way so as to improve instructors' motivation for acceptance of e-learning. The research creates a scientific foundation and a conceptual framework for practical application by e-learning experts and management based on HE instructors needs and perceptions. Mainly, the researcher theoretically examines the interrelationships between e-learning success factors, barriers, HEI management actions, and instructors' acceptance of e-learning.

1.4 Research aim, objectives and research questions

The research topic examined under this study is the development of a conceptual framework for a holistic and sustainable approach towards instructors' acceptance of e-learning through examining their perceptions toward e-learning CSFs, barriers and associated institutional actions. The researcher embarks on an examination of relevant concepts and methods as identified in extant literature that could be utilized to contribute towards the development of an integrated framework by taking into account varying success factors and prevailing barriers, as perceived by e-learning instructors in HE. A holistic approach to e-learning which employs the examination of both CSFs and barriers (Kumar *et al.,* 2019) is employed in order to consider the interrelationships between the conceptual dimensions presented within the study.

The aim of this research is **to explore and understand the effect of e-learning instructors' perceptions towards CSFs, barriers, and management actions, on instructors' acceptance of e-learning systems in HE.**

The researcher through the present Thesis examines the e-learning instructors' perceptions concerning the thematic areas outlined in the research aim and attempts to discern possible

reasons for these perceptions and any resultant interrelationships between quality factors, implementation barriers and associated institutional management dimensions affecting instructor's acceptance of e-learning. As has been stated, the researcher has adopted a holistic outlook on the subject areas (Kumar *et al.,* 2019), with a view to the development of an integrated framework that illustrates how acceptance of e-learning by instructors is stimulated and reinforced through sustainable satisfaction of CSFs, reduction of barriers and necessary management actions leading to appropriate e-learning system design.

By developing the framework, it is intended to examine how the various thematic areas within the conceptual dimensions of extant literature interact with and affect each other. The first concept to be examined is the instructors' overall perceptions of e-learning effectiveness and implementation. Upon reviewing relevant factors affecting this dimension, the author will explore how the concepts of effectiveness and implementation translate into particular CSFs and barriers. Moving onto the HEI management actions component, the author will attempt to aggregate various management actions, which in the view of instructors give rise to achievement of CSFs' benefits and mitigation of the negative effects caused by barriers. Finally, the researcher will examine the combined resultant effect of the preceding factors on instructors' motivation, acceptance and continuous commitment to e-learning as a mode of course delivery in HE.

The aim of the present research will be achieved by addressing five objectives. The **Research Objectives (**denoted as **ROs)** of the Thesis are:

RO1: To study the extant literature on e-learning CSFs, barriers, and instructors' acceptance of e-learning systems within the HE industry.

RO2: To explore and understand e-learning instructors' perceptions towards e-learning effectiveness CSFs and barriers to implementation.

RO3: To investigate what e-learning instructors think and feel about HEI management actions to achieve e-learning effectiveness CSFs and to overcome barriers to implementation.

RO4: To examine the combined resultant effect of management actions to achieve e-learning CSFs and overcome barriers to implementation, on instructors' acceptance of e-learning.

RO5: To develop a conceptual framework that illustrates instructor acceptance of e-learning by converging instructor perceptions towards e-learning CSFs, barriers, and management actions.

The above objectives are explored through the development of a preliminary conceptual framework that captures the characteristics of the business and educational context as identified in the literature review. The researcher, through the literature review methodically examines the online education industry's stakeholders, their interests, interrelationship, and ability to affect online education methods applied, to demonstrate the significance of instructors as a stakeholder group. Based on the factors identified by the literature review and the empirical analysis, a final framework can be used to assist in designing a higher quality online educational experience that satisfies human and social needs of instructors, at a lower cost by investing in the proper key drivers. The researcher theoretically and empirically explores how proper HEI management actions could affect instructors' psychological wellbeing, level of self-motivation to offer a higher quality e-learning experience to students. The **Research Questions** (hereinafter referred to as **RQs**) of the Thesis are:

RQ1: How do e-learning instructors perceive and evaluate factors for e-learning effectiveness and barriers to e-learning implementation?

RQ1a: How do e-learning instructors perceive and evaluate critical success factors for e-learning effectiveness?

RQ1b: How do e-learning instructors perceive and evaluate barriers to e-learning implementation?

RQ2: What do e-learning instructors think and feel about management actions taken towards e-learning effectiveness factors and barriers to implementation?

RQ2a: What do e-learning instructors think and feel about management actions taken towards achieving e-learning critical success factors?

RQ2b: What do e-learning instructors think and feel about management actions taken towards overcoming e-learning barriers?

RQ3: How do management actions taken to achieve e-learning effectiveness factors and to overcome barriers to implementation, influence instructors' acceptance of e-learning?

Through answering these exploratory research questions, the researcher studies the factors that could reinforce the extant literature on e-learning acceptance in HE, by placing particular

attention on the major management actions affecting the acceptance of e-learning from the instructors' perspective.

1.5 E-learning in higher education institutions – rationalization of research focus

The global impact of e-learning in higher education
This section introduces the study's empirical setting and explains the rationale for its selection. The research is conducted in the context of e-learning in the Cyprus higher education sector, and primary data is gathered from informants working as full-time faculty at the country's six largest universities.

Higher education plays a critical role in all countries' social and economic growth. However, the industry has a slew of key concerns to solve, considerable obstacles to meet and overcome, and significant opportunities to seize and consolidate. In a world marked by increasingly rapid, widespread, and fundamental change, higher education institutions must today function, govern, compete, be creative and inventive, and offer intellectual leadership on a wider scale than ever before (Smith, 2013). Higher education is a major mechanism of national and international economic growth, prosperity, and competition. Universities and the remaining educational institutions are, of course, the main contributors towards the provision of higher education and ongoing skills training for graduates, but they also help immensely towards creating and sustaining a vibrant research framework that produces commercially viable inventions and ideas (Digital Marketing Institute, 2018). Higher education and research benefit the entire global economy since they stimulate local and global investment, promote exports, and help with balancing the economy. Higher education graduates are in a position to acquire transferrable skills that enable them to flourish in workplaces that maintain a positive outlook towards research and innovation activities and are thus able to bolster the strength of the knowledge-based economy that governs modern day markets and industries. As a result, higher education has a direct impact on economic growth on a global scale. For instance, it has been shown that in 2015, universities in the United Kingdom have contributed £95 billion to the economy (Times Higher Education, 2017), whereas universities in Australia have generated $25 billion (TEQSA, 2017) and universities in Canada have generated $55 billion (Council of Ontario Universities, 2017). As an additional point of reference which serves to exemplify higher education's importance, between 1996 and 2015, technological advancements

accomplished at American universities and colleges added $591 billion to the country's Gross Domestic Product (AGB, 2018).

The use of information and communications technology (ICT) to improve and support learning in higher education is referred to as e-learning (OECD, 2015). E-learning is developing into a progressively more important constituent of higher education, and universities globally are opting to expand its availability and provision, with more and more students signing up to this mode of course delivery. It needs to be stated that e-learning encompasses a wide range of technologies, ranging from students simply using their e-mail to receive course updates or using a platform to access course materials online while taking a physical course on campus, all the way to programs taking place completely online. There are therefore numerous forms of e-learning available, and in all situations a campus-based university is providing the courses, but to varying degrees through e-learning linked to the Internet or another online network (OECD, 2015). The majority of e-learning activity is tied to course modules, or segments, reflecting e-learning's dominance as a supplement to on-campus delivery at the undergraduate level. At the postgraduate level, complete programs with significant online presence are more popular, possibly because online education favours the experienced learner who wants to balance work, family, and studies. Business Management and Information Technology have emerged as the most frequently listed fields using some type of e-learning, especially via the mixed mode and entirely online (OECD, 2015). Higher education institutions clearly feel they should be offering e-learning courses (ibid.), and this is vital, since the higher education industry has consistently been demonstrating a vital and well-acknowledged economic impact on a global scale. Its tight interaction with business and industry provides commercial value to innovation, while higher education and continuing skills training provide employees and organizations with the necessary qualities that are needed for them to be able to prosper in the modern-day knowledge-based economy (Digital Marketing Institute, 2018).

The COVID-19 pandemic has necessitated a lot more HEI's to start offering online courses as of 2020 onwards, in order to satisfy the increasing demand for distance education due to the restrictions that were placed all around the world in order to control the spread of the pandemic. The sudden introduction and proliferation of e-learning systems use in view of the conditions imposed by the emergence of the COVID-19 pandemic, present a severe disruptive change to conventional learning systems. HEIs are in dire need of solutions especially with the demands to keep up with rapid changes in the educational environment, as imposed by the COVID-19

pandemic and the introduction and implementation of e-learning is still a new concept in less developed countries, especially when considering the need to overcome the challenges imposed in the aftermath of the COVID-19 crisis (Thanasi-Boçe, 2021).

The higher education sector in Cyprus

Cyprus is a European Union (EU) island country which is situated in the Eastern Mediterranean. According to the Statistical Service of the Republic of Cyprus (CYSTAT, 2022), the island's population as at the end of 2019 was 888,000 people. It should be noted that, going a few years back, Cyprus had been one of the EU countries hardest impacted by the financial crisis of the banking sector in 2012, and the country went into recession in subsequent years. As a result of the economic downturn, Cyprus's employment rates were impacted significantly, however despite this, there was still considerable demand for both undergraduate and graduate degrees, which has been related to prospective students' desire to improve their work chances in the country's limited labour market. Additionally, university graduates in Cyprus have been emphasizing the value of higher education in their professional lives and it therefore appears to be regarded as a beneficial investment by university graduates even in the aftermath of the financial crisis (Menon, Argyropoulou and Stylianou, 2018).

The public expenditure relating to education in 2019 amounted to over €1.3 billion and accounted for 5.9% of the country's GDP as per the latest available data. Higher education is a sector which is on the rise in Cyprus, as the number of enrolments has increased from just under 40,000 students in the academic year 2014/2015 to over 50,000 students in the 2018/2019 academic year, as per the latest figures available from CYSTAT (2022).

Figure 1.1: Student Enrolments in Cyprus by level of education (Source: Statistical Service of the Republic of Cyprus, 2021)
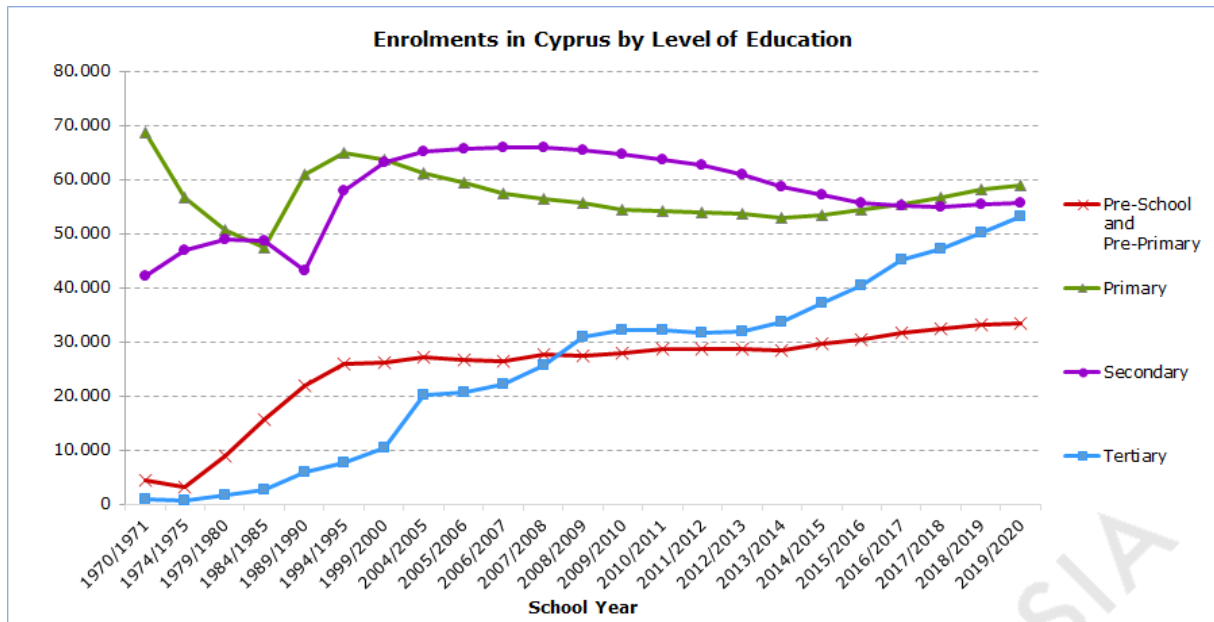
The upward trend in terms of the tertiary education sector in Cyprus, as compared to the remaining levels of education is clearly evident from Figure 1.1 above. Out of the 50,211 students that were enrolled in 2018/2019, 38,022 were enrolled in Cypriot public and private universities, while the remaining 12,189 were enrolled in non-university public and private tertiary education institutions. This accounts for 76% of the students being enrolled in universities, thus indicating the dominance of these higher education institutions as the main student choice in the Cyprus tertiary education system. In 2019/2020, the number of enrolments rose to 53,192 with 13,505 students being enrolled in public tertiary education institutions, and 39,687 students being enrolled in private institutions. The increase in the number of students in private institutions, in recent years, is attributed among other reasons, to the increase in distance learning programmes offered by these institutions (CYSTAT, 2021). It is therefore apparent, that the Cyprus higher education market is dominated by private universities as these institutions account for the highest number of enrolled students, and this is largely due to the decision made by these institutions to increase their offering of e-learning courses.

In 2018/2019, the total number of graduates in distance learning programmes was 4,269 with 254 at the undergraduate level, and the remaining 4,014 being postgraduate. There was a total of 14,774 students in distance learning programmes and 13,062 were enrolled in postgraduate (master's or long first degree – five years or more). Out of this total number, 6,968 students

were enrolled in the field of Education, and 4,991 in the field of Business Administration. Consequently, these two fields account for an overwhelming 80% of the total distance learning students, indicating the high level of availability and provision of these fields in an exclusively online format of delivery, as well as the students' preference and willingness to register for them at the postgraduate level. In terms of teaching personnel, in 2019/2020 there were a total of 1,905 full time faculty employed in tertiary education, using as a basis of calculation the full-time equivalent, with 1,071 of them being employed in private higher education institutions, and the remaining 834 in public institution on the island (CYSTAT, 2021). There are 10 universities in Cyprus which have been accredited by the The Cyprus Agency of Quality Assurance and Accreditation in Higher Education (CYQAA, 2022), as per the latest information available from the Cyprus Ministry of Education, Culture, Sport and Youth (2022), shown in Table 1.1 below:

Table 1.1: Accredited universities in Cyprus (Source: Author's own, adapted from the Cyprus Ministry of Education, Culture, Sport and Youth website, 2022)

Public Universities
• Cyprus University of Technology
• Open University of Cyprus
• University of Cyprus
Private Universities
• American University of Cyprus
• European University Cyprus
• Frederick University
• Neapolis University Pafos
• Philips University
• University of Central Lancashire (UCLan Cyprus)
• University of Nicosia

The Cyprus Agency of Quality Assurance and Accreditation in Higher Education, which has accredited the Cypriot universities as presented in Table 1.1 above, is the responsible Body in charge of assuring the quality of higher education in Cyprus and supporting the mechanisms set forth in applicable legislation, as well as of the continual reform and improvement of higher

education institutions and programs of study offered on the island (CYQAA, 2022). E-learning is an integral part of the school curriculum of the vast majority of the universities in Cyprus, with the largest universities on the island offering fully-fledged programs in e-learning format at both the undergraduate and postgraduate level.

Considering the above-mentioned reflections and contemporaneous gaps in extant literature, the higher education sector in Cyprus provides an appropriate setting where the current Thesis can generate significant understandings of the thematic area under study, at both the global and domestic levels.

1.6 Significance of the research

Existing literature on the research area focuses mostly on the analysis of student perceptions, however there are other stakeholder groups which are just as vital in the HE e-learning domain, such as instructors, e-learning experts, HEI management, and accreditation bodies. Existing research in the areas of e-learning CSFs and barriers doesn't seem to be focusing sufficiently on enabling and mitigation actions that could be taken from HEIs from the perspective of instructors in HE. This in turn, leads to a need to also study further the area of e-learning acceptance from the point of view of various stakeholder groups. Consequently, the researcher attempts to ascertain how institutional management actions relating to enabling e-learning CSFs and mitigating barriers could influence instructors' motivation and acceptance. The researcher thereafter aims to construct a framework by taking into account these factors in order to attempt to provide a solution that will lead towards providing e-learning management solutions to HEI in terms of engaging instructors with e-learning more effectively. Examining existing literature on the subject matter, one may observe that there is a predominant focus on problems in the cost effective implementation of mostly technology related factors, rather than social ones such as motivation, satisfaction, engagement and acceptance. This is explicable, since *"a technological revolution is occurring across higher education institutions, which is disrupting traditional approaches to teaching and learning methods"* (Uppal, Ali and Gulliver, 2018, p.414).

The theoretical significance of this research is represented by identifying factors for satisfaction of instructor needs, to be sought after by HEIs. It will be expected that the resources injected into the development of the system will be such that the instructor involvement can be increased

while the costs associated with resource injection can be optimized towards this end. Significant theoretical contributions are achieved towards the conceptualization of a framework that indicates how to gauge instructors' motivation, satisfaction and acceptance, by encapsulating the concepts of e-learning effectiveness, implementation, CSFs, barriers, and the associated HEI actions to address these.

The researcher constructs the framework by delving into concepts which, as outlined by extant literature, need further investigation. Human and social factors in online education, as identified by Chavoshi and Hamidi (2019), are determinants that need to be addressed in terms of designing a quality approach to e-learning and ensuring acceptance. As Graham (2018) suggests, *"research continues to reflect the position that the absence of social interaction is a major barrier to a positive on-line learning experience"* (Graham, 2018, p.17). Additionally, it seems to be the case that, *"the literature indicates a lack of attention to human and social factors in the e-learning agenda"* (Olasina, 2019, p.373).

Concentrating on the theoretical significance of understanding human and social CSFs of e-learning, Kryshtanovych *et al.* (2020) state that:

> *Promising areas for further scientific research in e-learning are studies of the problems of modernizing the content of education in accordance with modern requirements of distance learning, further developing effective ways to strengthen intersubjective communications.* (Kryshtanovych *et al.,* 2020, p.362)

The researcher focuses on identifying ways to achieve the application of these methods to facilitate positive instructor acceptance, which, in turn, cascades into offering a higher quality educational experience to e-learning students. Extant literature indicates that HEIs must re-evaluate their approach to e-learning quality, since Kryshtanovych *et al.* (2020) state that the adoption of distance learning for students has been shown to involve changes to some aspects of its implementation, which no longer satisfy all the needs of the educational process, particularly teaching and its assimilation by students.

Concerning the issue of assimilation of the e-learning process by instructors, which is ultimately expected to bring about a high level of student achievement, Butz *et al.* (2016) state that student achievement is affected by the amount of value, enjoyment, anxiety, and boredom they associate with e-learning courses. Furthermore, *"perceived success was positively related to enjoyment and negatively related to anxiety and boredom"* (Kumar *et al.,* 2019, p.31). This

indicates that there is further scope within existing contemporary research revolving around the topic, to study how e-learning instructors can be enabled to tackle the area of e-learning student achievement. There is also scope for further investigation into the convergence between the significance of particular quality factors identified, together with the corresponding amount of attention that should be injected towards the achievement of each quality factor. Kumar *et al.* (2019) further state that they have:

> *Not come across many studies that examine instructors' perceptions and attitudes towards online education. Several reports over the years have shown that for the past decade instructors' perceptions towards technology and online education haven't changed much and remain negative.* (Kumar *et al.,* 2019, p.34)

This could pose a significant barrier to effective implementation of e-learning. A practical aspiration would be, for this perception to become more positive with the introduction of new literature revolving around the topics of motivation, acceptance, and engagement with e-learning.

1.7 Contribution to theory, methodology and practice

The research adds significant new knowledge to both theory (academic) and practice (industry). The topic of exploring instructor acceptance in e-learning is new as it combines social, financial, educational, and technological themes, and there isn't much research on it yet. The study also provides new descriptive and prescriptive insights that can be used in the e-learning workplace. Both the knowledge gaps and the research's contribution towards closing them are discussed in greater depth in the following chapters (chapters 2 and 6, respectively), but they are also mentioned briefly here.

Contribution to theory

The contributions to theory as a result of this research initially originate with underlining the importance and ways of exploring the perspectives academic staff in terms of assessing the CSFs and barriers of e-learning (Alhabeeb and Rowley, 2018), thus unifying the conceptual dimensions of stakeholder perceptions and effectiveness. This is expanded upon by examining the most important barriers or challenges for e-learning, and how management priorities can be set by exploring and understanding how barriers towards achievement of CSFs can be overcome (Naveed and Ahmad, 2019), thus unifying results with the implementation dimension of e-learning. Contributions to theory under the e-learning effectiveness dimension

are in terms of identifying institutional factors that enable the utilization of pioneering e-learning strategies and approaches (Kumar *et al.,* 2019). The researcher aims to explore the importance of instructors' acceptance and how it can be used to improve social integration and psychological well-being of students (Olasina, 2019). This would be deemed as vital towards achieving a successful value-added learning approach (Graham, 2018) as necessitated by pandemics and similar situations to the one imposed by COVID-19 (Alqahtani and Rajkhan, 2020).

The main contribution under the instructor perception dimension is demonstrating the reasoning behind the perceptions of instructors relating to CSFs and barriers, and thus illustrating the importance of investment in the proper enablers and mitigators behind these (Olasina, 2019). The researcher aims to ascertain how HEI management actions refining the achievement of CSFs and mitigation of barriers, could drive up acceptance of e-learning by instructors alongside the changes in the human and social landscape. As a result, the major reasons affecting the social factors affecting the acceptance of e-learning are explored and understood (Chavoshi and Hamidi, 2019), and additionally how addressing them could lead to more successful implementation of e-learning (Al-Fraihat, Joy and Sinclair, 2017).

Contribution to methodology

In relation to the contributions to methodology of this Thesis, many scholars have urged for more qualitative research in this area, as opposed to the majority of prior research on this topic, which has been primarily quantitative (Alhabeeb and Rowley, 2018; Daniela *et al.,* 2018; Cherry and Flora, 2017; Almas, Machumu and Zhu, 2021). Moreover, face-to-face methods of data collection, like interviews, aid the researcher in acquiring rich, detailed data that yields worthwhile findings. As a result, the qualitative approach helps to outline potential consequences for today's e-learning domain as well as logically explain instructor acceptance in relation to management actions addressing success factors and challenges in e-learning.

Contribution to practice

The research has equally important practical implications. HEIs aim to minimize costs associated with developing online education systems that fully satisfy users' requirements. This is especially true with the advent of technology which has marked human development in the past decades, alongside various conditions which further necessitate the provision of distance education. One such example is the COVID-19 Novel Coronavirus pandemic which broke out

in December 2019 and has placed a significant socio-economic strain in subsequent months worldwide. It is conditions such as these that have forced a wide variety of institutions to conduct business remotely, universities included. In the absence of an online education system, universities simply would not be able to offer courses to students and would have to terminate their activities altogether. It is a fact that most academic institutions do have a framework in place to accommodate distance learning. However, it is the institutions that will be able to truly accommodate stakeholders' interests, that will be offering a higher quality online experience, with positive effects for the HEI's reputation. Being faced with such unprecedented developments and circumstances, it is precisely these institutions that will emerge as the new market leaders, innovators, and educational pioneers.

These conditions bring about the need for e-learning modes to encourage student-centered learning and to be easily manageable during situations similar to a lockdown, where learners' only viable option for education would be an e-learning modality. There is therefore a need to enable e-learning instructors on the use of online modalities and developing lesson plans with reduced cognitive load and increased interactivities (Mukhtar *et al.,* 2020) in order to encourage increased student engagement as face-to-face classroom interaction would be minimized. This Thesis, therefore, aims to practically contribute towards e-learning management and experts' strategies and approaches to enable instructors to cultivate their motivation for engagement and acceptance of the e-learning mode of course delivery in HE.

1.8 Thesis outline

Chapter 1 Introduction. This chapter introduces the topic of study and covers the thesis' main aim, objectives, and research questions. It also contains important information regarding the study's setting in reference to the industry in question. In addition, a brief overview of theoretical, methodological, and practical contributions is provided. Finally, the structure of the thesis is described.

Chapter 2 Literature Review and Preliminary Conceptual Framework. This chapter summarizes and reviews existing knowledge and theory about the phenomenon under study. It formulates the research questions after identifying corresponding gaps and contradictions in the applicable theory. The preliminary conceptual framework is constructed and presented as a result.

Chapter 3 Research Philosophy, Methodology and Research Methods. The overarching research approach of the Thesis is elucidated in this chapter. It begins by stating the researcher's philosophical perspective and defining the research strategy and data collection technique. Finally, it goes over the data analysis process in detail and explains how reliability and validity of data is attained.

Chapter 4 Data Analysis. The approach to analyzing the primary data of the Thesis is outlined in this chapter, and a final thematic analysis template is presented, which allows for the effective studying and discussion of the primary data obtained.

Chapter 5 Discussion of Findings and Results. The key data that sheds light on the research questions and helps to meet the Thesis objectives is presented and discussed in this chapter.

Chapter 6 Conclusions and Final Framework Development. This chapter summarizes the major findings concerning all the research questions and lays out the final conceptual framework. It also goes through the study's contribution to theory, methodology, and practice in-depth, as well as the study's shortcomings and suggested future research directions.

1.9 Conclusion

The Thesis was introduced in this chapter. The chapter opened with an outline of the Thesis's background and a discussion of the practical and literature gaps addressed by this study. The dissertation's research goal and objectives were outlined in the next part, which was followed by a concise appraisal of the research's contributions to theory, methodology and practice. Finally, a summary of the thesis' structure was provided. In the subsequent chapter, the research will present the literature review that was conducted along with the formulation of the initial conceptual framework.

CHAPTER 2 LITERATURE REVIEW AND PRELIMINARY CONCEPTUAL FRAMEWORK

2.0 Introduction

This chapter provides an overview of preceding research on the present study's interconnected major themes and concepts, as well as a review, appraisal, assessment, and combination of current empirical and theoretical foundations that determine the conceptual framework and scope of the current study.

The chapter sets out by outlining how the narrative literature review process was approached by the researcher, followed by a presentation of the search strings that were adopted to carry out the in-depth literature review of the topic under examination. The chapter then moves on to presenting the various thematic areas that give rise to the Thesis' RQs and make up the preliminary conceptual framework. Firstly, a detailed examination is conducted on e-learning stakeholders and on the importance of gaining an understanding of the instructors' perspective as a stakeholder group. The research then delves into extant literature exploring e-learning effectiveness and implementation, which are the two overarching themes towards which an understanding of the instructors' perspective is sought within this Thesis. This is followed by an investigation into extant literature exploring e-learning effectiveness CSFs and instructors' perceptions towards them, and thereafter outlining the necessity to conduct a systematic review of e-learning CSFs literature. The chapter then goes on to explore extant literature on e-learning implementation barriers and associated instructors' perceptions towards these. This is followed by an examination of extant literature exploring management actions towards e-learning effectiveness and implementation and more precisely towards achieving e-learning CSFs and overcoming e-learning barriers, and the importance of how e-learning instructors perceive these actions. Furthermore, this chapter examines extant literature on instructors' acceptance of e-learning and outlines that management actions toward achieving CSFs and eliminating barriers could have possible effects on instructors' acceptance. Finally, the chapter concludes with the research gap identification and a presentation of the preliminary conceptual framework of the Thesis.

2.1 Narrative literature review

A narrative literature review process was carried out by the researcher to explore extant literature on the research topic. This consisted of examining prominent contemporary works on online education, as well as some of the very fundamental works that have attempted to provide the foundations of being able to explain the notion of distance education, in order to

precisely define the current research setting and theoretical background that exists on the research topic. Based on an initial scoping study of extant literature, it was decided to adopt specific research keywords to study the relevant literature in more depth, as presented in Appendix I.

E-learning is a broad phrase that refers to a variety of electronic technologies (TV, radio, CD-ROM, DVD, mobile phone, Internet, and so on) in educational settings, with a focus on web-based learning. Hundreds of scholarly articles, books, conferences, and symposia have been dedicated to investigating the wide range of applications of modern technology in educational settings from kindergarten to universities, from the public sector to the private and corporate worlds, over the previous two decades (Guri-Rosenblit and Gros, 2011). Extant literature indicates that e-learning systems require financial resources and employee training, in order for HEI management and instructors to keep transitioning effectively from conventional to more innovative styles of learning in education. Empirical results in conjunction with existing literature, provide theoretical and empirical support for the continuous improvement of e-learning systems (Farhan *et al.,* 2019). This indicates that e-learning is a domain in need of constant investment and development within the contemporary education framework.

2.2 Defining the theoretical background

As a result of the literature review that was carried out and using the research keywords outlined in Appendix I, the researcher has been able to identify four main conceptual themes within the extant literature as being significant to future research, based on the aim of the current study: e-learning stakeholders, e-learning effectiveness, e-learning implementation, and e-learning acceptance. In the following sections, the researcher will present the main studies which formulate the secondary research data obtained under each conceptual dimension and will further break it down to the preliminary factors utilized within the resultant preliminary conceptual framework. It is noted that there are significant overlaps throughout the four dimensions, with multiple relationships among concepts being identified and others proposed. These concepts, their corresponding interrelationships and preliminary research questions raised, were explored through specific search strings conducted on EBSCO Host databases, as outlined in Appendix II.

The concepts, their corresponding interrelationships, and RQs raised as a result of performing the literature review based on these search strings, are presented through the preliminary conceptual framework diagram.

2.3 Extant literature exploring e-learning stakeholders

Choudhury and Pattnaik (2020) have identified e-learning's main stakeholders as the following: learners, instructors, content developers, accreditation bodies, employers, educational institutes, and technology providers. Stakeholders play a very important role to ensure that e-learning is a success as ICT is challenging and, therefore, needs the support of all the stakeholders for it to be successful and to minimize the barriers that come with e-learning (Msomi and Hoque, 2018). The main e-learning stakeholders, as identified by Msomi and Hoque (2018) are presented in Figure 2.1.

Figure 2.1: Higher education stakeholders (Source: Msomi and Hoque, 2018, adapted from Leisyte and Westerheijden, 2014, and Asiyai, 2015)
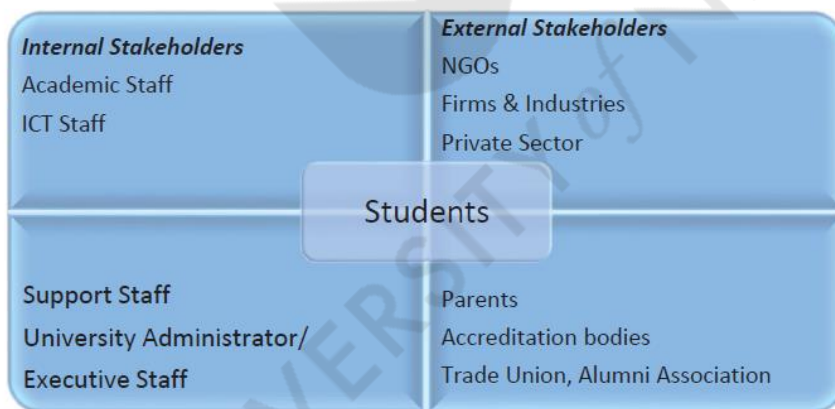
Stakeholders have several analogous concerns with e-learning, which HEIs and national governments need to take seriously and address because these stakeholders have the power to make or break the e-learning initiative. The sooner HEIs understand the importance of analyzing and attending to the stakeholders' perspectives and needs for e-learning, the more the barriers to e-learning can be minimized (Msomi and Hoque, 2018). However, the task of encouraging stakeholder involvement in e-learning is laborious, as Harrison *et al.* (2017) suggest that a significant number of stakeholders do not believe that the effectiveness of the e-

learning approach matches that of the traditional way and that qualifications awarded through e-learning are equivalent to those from face-to-face teaching.

Even though e-learning stakeholders tend to have similar concerns, their perceptions differ, and it is important to examine their diverse viewpoints in order to ensure successful e-learning implementation and acceptance. Through the application of stakeholder theory in the context of instructors and students as stakeholders of an e-learning system, Alhabeeb and Rowley (2018, p.10) have concluded the following:

> *The perspectives of students and academic staff differ. The identification and acknowledgement of the different perspectives should prompt decision makers to consider the two perspectives. Failure to satisfy either perspectives could lead to unusable or undesirable e-learning systems.*

It would therefore be strongly advisable for HEI management to make alignment of the diverse stakeholder perceptions a strategic priority, in order to ensure successful e-learning implementation. This task is made harder by the fact that the sudden introduction and proliferation of e-learning systems use in view of the conditions imposed by the emergence of the COVID-19 pandemic, present a severe disruptive change to conventional learning systems. Adekola *et al* (2017, p.5) have stated that *"key drivers or change agents, institutional considerations or support needs, processes to facilitate institutional alignment of stakeholders and an understanding of stakeholder roles in this new digital landscape"* would all enable a smoother transition towards an increasingly technologically enhanced learning framework. It has therefore been concluded through the study that *"a holistic approach is required to enable a successful institutional transition"* (Adekola, Dale and Gardiner, 2017, p.5). Such a holistic approach would require a thorough examination of the different stakeholder viewpoints individually, so as to pinpoint their concerns and expectations with regard to e-learning systems use.

Stakeholder perceptions are guided by human and social factors, and thus one of HEI management's main objectives should be to comprehend the personality traits and psychological elements that are linked to the "*barriers, fears, and hopes of people who use technology for educational purposes*" (Daniela *et al.,* 2018, p.5) among students, instructors, and administrators. The present Thesis' author supports the view that at the core of being able to obtain support from the stakeholders of e-learning, rest human and social factors (Olasina,

2019) that need to be addressed, thus leading to a desirable shift in stakeholder perspectives. Various influences have been identified by extant literature that could positively contribute towards the satisfaction of human and social factors, and these mainly take the form of change agents leading towards a better e-learning or blended learning experience (Adekola, Dale and Gardiner, 2017). Pedagogy needs to consistently be the main concern, intersecting with education throughout the learning process design in e-learning systems, however, *"human issues are still paramount, and learning remains an inherently social activity"* (Graham, 2018, p.31). Satisfaction of the very important human and social factors involved in e-learning delivery would bring about the proper behavioral intention (Choudhury and Pattnaik, 2020), needed to stimulate the necessary level of e-learning stakeholder motivation (Dunn and Kennedy, 2019) and eventual acceptance of e-learning. This would, in turn, lead to stakeholder engagement with e-learning (Hussain *et al.,* 2018) and consequently to e-learning continuance satisfaction (Al-Samarraie *et al.,* 2018).

The most likely way to encourage e-learning acceptance is by enabling stakeholders to recognize the benefits of e-learning. Satisfaction of stakeholder interests, by outlining effectiveness and implementation concepts, would be expected to bring about e-learning acceptance from a unified stakeholder perspective. These interests first need to be addressed separately, and by taking into account individual stakeholder perspectives; a process that would contribute towards ensuring that human and social factors related to e-learning acceptance are addressed (Olasina, 2019). Examining individual stakeholder perceptions and obtaining their views would represent a paramount step towards including them in the management decision-making process that could create a better e-learning environment for all users. Consequently, the researcher moves on to examining the instructors' perspective.

2.3.1 Importance of the instructors' perspective

San-Martín *et al.* (2020), through their research work studying the determinants of instructors' continuance commitment to e-learning in HE, support the concept of addressing the viewpoint of instructors on the development of e-learning, a viewpoint that has been generally overlooked in previous academic studies, but has been shown to be of central importance. The role of e-learning instructors cannot be understated since they are regarded as "*content facilitators, researchers, process facilitators, designers, technologists, advisers, assessors, and administrators*" (Goodyear *et al.*, 2001, as cited in Almas, Machumu *et al.*, 2021, p.81).

Understanding instructors' perspectives towards e-learning use is therefore critical because their perspectives determine how they approach it, and consequently how well they are able to perform the roles assigned to them within the e-learning environment. This understanding should be based assuming that the more value is placed on e-learning activities by the instructor, the greater their engagement with the e-learning process will be (Almas, Machumu and Zhu, 2021).

Over the last few decades, there have been significant advancements in remote education, resulting in online delivery being defined by the utilization of virtual learning environments and other internet technologies (Bates, 2008; Chang *et al.*, 2014 as cited in de Metz, Bezuidenhout, 2018). E-learning instructors now have a crucial part to play in these virtual learning environments since they are the student's main contact with a HEI; they consistently adopt the role of the face of e-learning for the geographically distant student (de Metz and Bezuidenhout, 2018), and are thus the main driving force in assisting students to overcome barriers associated with their learning process. A thorough examination of the instructors' perspective towards e-learning is imperative since according to Bryan, Leeds *et al.* (2018), investment in instructors' development is crucial for the successful implementation of e-learning. Several previous academic works have delved into the topic of investigating the instructor perspective, namely Alhabeeb and Rowley (2017), who provide insights into the advancement of e-earning systems and the perceptions of major stakeholders within the management of e-learning systems in HEIs. What they have discovered in a subsequent study, is that the perceptions towards e-learning change depending on whose stakeholder perspective is observed, and as such, instructor perceptions differ from those of students and e-learning management (Alhabeeb and Rowley, 2018).

It is noteworthy that, additionally to the discrepancies of perceptions taken from different stakeholder perspectives, extant literature has also shown divergent results in terms of the actual instructor perceptions of e-learning, while that topic has been specifically explored through previous studies. According to Harrison *et al.* (2017), quite a few instructors across various HEIs are confident in using online technology for teaching purposes, and they see benefits for their students' learning experience. A large proportion want to increase their involvement with e-learning, and some believe that they need to increase e-learning provision to maintain the current number of ever-increasing registered students on e-learning platforms. These are very positive signs indicating that the foundations for ensuring proper instructor-

student interaction, by recognizing the importance of e-learning, have been laid out. Farhan *et al.* (2019) have similarly measured instructor confidence in using online educational technologies throughout the teaching process. Attitudes towards e-learning have been examined from the teaching perspective of the e-learning instructor and the results confirm that some, but not all, instructors are confident in using technology for teaching purposes. Cherry and Flora (2017) have shown that positive instructor perceptions towards e-learning courses effectiveness have been moderately increasing with the *"number of years of teaching e-learning courses, number of e-learning courses taught, and perceived self-competence with the use of technology"* (Cherry and Flora, 2017, p.259). This is an indication that the more comfortable e-learning instructors feel within the e-learning environment, the more positive their perceptions towards the teaching process will be.

Some conflicting findings arise from extant literature on instructor perceptions. According to Al-Karaki *et al.* (2021), a considerable number of instructors believe that e-learning could even be superior to traditional classroom instruction, however on the other hand Kumar *et al.* (2019) state that several reports over the years have shown that instructor perceptions towards technology and e-learning education have not shifted significantly in recent times and remain negative. Given these apparently conflicting results, it is worth examining instructors' perspectives and motives further. To this end, the researcher has considered the exploration of motivating factors that might be responsible for instructors' perceptions as studied in extant literature. Almas *et al.* (2021) have explored instructors' perspectives, motivating factors, and competencies in the application of e-learning systems, and what they have discerned, is that despite their desire to employ e-learning, instructors often lack the necessary skills to utilize numerous learning tools present in an e-learning platform, which would allow them to properly design and implement virtual learning activities. As such, the work performed by Almas *et al.* (2021) serves as a clear signal for HEIs to invest in more instructor training and development activities as part of their strategy. It is vital for HEI management to understand the key competencies required by e-learning instructors, as satisfaction of these would also lead to higher quality student engagement in the learning process. Additionally, satisfying instructor competencies needs in terms of e-learning implementation would have the effect of improving instructors' perceptions of e-learning system effectiveness. Delving further into the driving forces behind the formulation of instructor perceptions towards e-learning, Cherry and Flora (2017) have shown that instructor perceptions of e-learning effectiveness are not significantly affected by factors such as instructor role, age, years of general teaching experience, or type of

HEI they are employed by. This is an indication that instructor perceptions are for the most part formulated through an intrinsic process of reasoning, acceptance, and motivation and are closely connected to their specific experiences with the actual e-learning system itself. Accordingly, it has been shown that instructor perceptions of the effectiveness of e-learning education improve when instructors observe that they have greater competence in the use of technology (Cherry and Flora, 2017) and thus a greater ability to navigate easily through the e-learning platform.

Despite the existence of such academic literature, Kumar *et al.* (2019) state that they have not encountered a sufficient number of studies that look at perceptions and attitudes of instructors in terms of online education effectiveness. This indicates that there is further scope within existing contemporary research revolving around the topic, to study the placement of value on social rather than technological factors, since the formulation of instructor perspectives is borne out of human and social factors that affect them. Therefore, the researcher has focused on potential factors affecting these perceptions and on methods of how to facilitate instructors' acceptance of online education. San-Martín *et al.* (2020) support the idea of further academic work to be performed with a focus on the instructors' perspective on e-learning development, which according to them has been largely neglected in prior academic research. More specifically, Almas *et al.* (2021) prescribe the utilization of research methods such as interviews in order to obtain a higher level of insight toward the comprehension of the competencies, motives, and perceptions of instructors to accept and use e-learning systems.

Consequently, if HEIs are seeking to increase their e-learning provision capabilities in a post COVID-19 world with increased virtual learning demand, institutional management needs to consider how to address and improve the instructors' perspective to e-learning. There could be benefits from showcasing examples of good practice to instructors from within and outside of the HEI (Harrison *et al.,* 2017), which would serve to improve their perceptions towards e-learning. This needs to coincide with demonstrating the effectiveness of e-learning when compared with face-to-face provision from the instructors' perspective, and once communicated properly to this stakeholder group, their support would be obtained by pinpointing the precise quality factors that have led to such positive outcomes. From the instructors' viewpoint, the quality of the system is deemed to remain the most critical factor influencing both the organizational impact and, to a lesser degree, the dedication to continuance commitment (San-Martín *et al.,* 2020).

Extant literature exploring instructor perceptions towards e-learning has shown that there is scope for further investigation into the convergence between the significance of particular quality factors identified by instructors, together with the corresponding implementation actions that should be taken by HEI management towards the achievement of each quality factor, while also exploring the most cost-effective ways of materializing this endeavor. The researcher has studied the perspective of instructors within the framework of e-learning stakeholders and aimed to identify their perception of e-learning effectiveness. This has served as additional data to reinforce the explanation of the concepts of e-learning effectiveness, implementation, and acceptance within the present Thesis, as perceived directly by instructors.

2.4 Extant literature exploring e-learning effectiveness

Noesgaard and Ørngreen (2015) have examined the concept of effectiveness in higher education and have identified that "learning outcome" is the most common definition of e-learning effectiveness. The term "learning outcome" refers to what happens when students successfully gain new knowledge and insights as a result of the e-learning process (Noesgaard and Ørngreen, 2015). Other definitions of effectiveness have been identified from extant literature as perceived learning, skills or competency obtained as a result of the e-learning process, attitude towards e-learning, satisfaction obtained by participants, skills acquired, and the extent of learning retention by students (Noesgaard and Ørngreen, 2015).

In exploring the concept of effectiveness in e-learning, the researcher has considered relevant thematic areas in the extant literature, spearheading the process with the examination of general dimensions and their prioritization as related to stakeholder perceptions. A study by Naveed and Ahmad (2019) suggests that the most important dimensions essential for effective implementation of e-learning can be categorized into the four broad domains of cloud service resilience, institutions' technological maturity, institutions' organizational readiness, and cloud-based e-learning imperatives. Moreover, through a subsequent publication, the main dimensions of e-learning have been identified as the following: students' dimension, instructors' dimension, design and contents' dimension, system and technological dimension, and institutional management dimension (Naveed *et al.,* 2020). The study further suggests methods through which to prioritize the importance of the various dimensions identified, as

this would lead to more effective setting of goals in an effort to achieve higher e-learning effectiveness.

Graham (2018) has evaluated the effectiveness of e-learning through the lens of PESTEL factors and has proposed that the PESTEL factors of e-learning should be termed as "*pedagogical, educational, social, technical, (educationally) environmental and legal*" (Graham, 2018, p.31). Pedagogy itself must be the main area of interest in e-learning according to Graham (2018), but his findings indicate that social factors should also remain as a priority in the e-learning context. Human factors, therefore, remain essential as e-learning continues to be a fundamentally social pursuit, while environment and technology seem to receive a lesser degree of consideration. These results diverge from other extant literature where for instance Miranda *et al.* (2017) through obtaining e-learning expert opinions have discerned that the interviewees have mentioned factors relating to technology, content, and stakeholders to be the most essential ones to ensure a successful outcome of the e-learning process. Similarly divergent are the findings of Van Wart *et al.* (2020) who have identified dimensions such as "*basic online modality, instructional support, teaching presence, cognitive presence, social online comfort, interactive online modality, and social presence*" (Van Wart *et al.,* 2020, p.17) to be the most important. Students appear to be mostly concerned initially with the fundamental components of a course, referring to the instructor's competencies and the technological infrastructure. It has been shown that thereafter they are seeking for engagement and virtual comfort. Social presence is valued; however, it appears as the least critical from this perspective (Van Wart *et al.,* 2020). Conversely, Olasina (2019) advocates for increased investment in improving human and social behavior in order to impact intention that will drive up acceptance of e-learning by students, so as to remain in line with the rapidly evolving social and human landscape.

If e-learning is perceived as being effective, stakeholders will tend to accept it more readily and engage with it on a more sustainable basis. Subsequently, the concept of e-learning effectiveness is exemplified by HEIs that enjoy higher student retention rates in online courses. Further dimensions of effectiveness have been identified by prior studies, such as institutional support and curriculum level of difficulty which could be argued to drive up student acceptance of e-learning (Muljana and Luo, 2019). Uppal *et al.* (2018), on the other hand, have identified the service dimension, information dimension, and system dimension as important, while Al-Fraihat *et al.* (2017), in another study that has been carried out with a focus on the thematic

area, have grouped findings into ten main e-learning effectiveness dimensions: planning, readiness, management, support, pedagogical, technological, faculty, institution, and evaluation and ethics.

As can be seen, e-learning effectiveness is a vast and complex topic due to the fact that there is a multitude of potential dimensions that could be benefiting e-learning effectiveness as well as the fact that these dimensions are being examined through different stakeholder perspectives in different studies. A methodology of documentation would assist HEIs in being able to retain this data and draw conclusions based on the views of stakeholders. A proposed methodology to ensure and document the effectiveness of e-learning is knowledge management (KM), as it directly influences the inputs and outputs of the educational process. KM has been defined as *"the process that enables the organization to create, store, transform and exchange knowledge"* (Al-Jedaiah, 2020, p.50)*,* and is an essential prerequisite for effective prioritization of CSFs of e-learning. This process would enable organizations to assess the influence of knowledge management broken down into the individual aspects of acquisition, generation, implementation, and storing, on the effectiveness of using e-learning. The improvement of students' knowledge would be connected directly to the knowledge higher educational institutions have and this could serve as a medium through which to introduce the main effectiveness factors in the most cost-effective manner (Al-Jedaiah, 2020). It is therefore important to note that knowledge management could form a basis for unifying the perspectives of stakeholders in terms of ranking the importance of factors contributing towards e-learning effectiveness, due to the fact that there would be a database of stored information present as a result of adopting a proper knowledge management process, thus signifying the importance of certain effectiveness factors over others.

According to Bryan *et al.* (2018), obtaining and documenting all the stakeholder perspectives is vital towards achievement of e-learning effectiveness, and as stated by Barclay *et al.* (2018) the instructors' view and acceptance are deemed to be crucial, however instructor perspectives seem to be underrepresented in extant literature (Kumar *et al.,* 2019). It would therefore be advisable to ascertain how instructors perceive and evaluate e-learning effectiveness and its implementation in order to reinforce the instructors' support for the e-learning system. This would be of utmost importance, since according to Atim *et al.* (2021) e-learning can be effective if the instructor is competent and supportive despite technological interruptions and other barriers that might exist. Because instructors are the primary point of contact for online

students, understanding their perspectives on creating and sustaining an online community is crucial to ensuring student success and thus effectiveness of the e-learning system (Berry, 2019).

E-learning effectiveness cannot be achieved without apt implementation of the e-learning system and related processes (Ahmad *et al.,* 2018). As the present Thesis also examines instructors' perceptions of barriers to e-learning implementation, the thematic area of implementation is discussed below.

2.5 Extant literature exploring e-learning implementation

E-learning implementation is the process whereby a HEI adopts and enforces policies and procedures toward enabling an effective e-learning delivery system to be readily accessible by e-learning stakeholders. The key to efficient e-learning implementation is the elevation of systems consideration in order to develop knowledge transfer while avoiding the creation of non-cost-effective infrastructures (Orozco-Messana, Martínez-Rubio and Gonzálvez-Pons, 2020). Implementation activities regarding online learning in higher education should be underpinned by the concept of embedment in the HEI's governance system and structures, and as such should be made an inseparable part of the day-to-day operational activities of a HEI (Casanova and Price, 2018).

Instructors, HEI top management, and legislators who affect and enforce e-learning implementation must all work together to make sure that e-learning systems are a success (Almas, Machumu and Zhu, 2021), as the importance of stakeholders in terms of contributing towards the successful implementation of e-learning systems has been clearly established (Msomi and Hoque, 2018). According to Farid *et al.* (2018), many HEIs lack a formal e-learning implementation process, and therefore a paradigm shift is needed concerning the process of implementation and adoption of e-learning solutions (Al-Karaki *et al.,* 2021). HEIs are in dire need of such solutions especially with the demands to keep up with rapid changes in the educational environment, as imposed by the COVID-19 pandemic and the introduction and implementation of e-learning is still a new concept in less developed countries, especially when considering the need to overcome the challenges imposed by the COVID-19 crisis (Thanasi-Boçe, 2021). Additional to these challenges is the fact that e-learning programs are still in relatively early stages and need help from both HEI management and instructors,

including financial resources and employee preparation, to transition from conventional to more advanced forms of learning in education. (Farhan *et al.,* 2019).

Throughout implementing an e-learning system, HEIs must assess their organizational needs and develop a well-planned road map, while management needs to have a methodical financial support plan and effective instructor feedback to accomplish this. The implementation process necessitates thorough and efficient preparation, execution, and upkeep. Important elements such as infrastructure and environment, instructor competency, course content delivery, and change agents must be evaluated and appropriately adapted (Ahmad *et al.,* 2018). A suitable implementation process of a solid e-learning strategy would allow for the rapid and long-term growth of the HE industry by means of scaling up HEI learning delivery capabilities and thus obtaining a substantially wide outreach in terms of the potential student base. This is due to the fact that an ever-increasing number of students are starting to pursue alternative learning routes and to enjoy a far more varied higher education environment (Volungevičien, Tereševičien and Ehlers, 2020).

The implementation of a solid e-learning strategy demands well-prepared instructors and a great degree of teamwork (Orozco-Messana, Martínez-Rubio and Gonzálvez-Pons, 2020) with instructors requiring "*both extrinsic and intrinsic motivation as well as practical training on several e-learning features*" (Almas, Machumu and Zhu, 2021, p.88). Instructors with knowledge, skills, competencies in distance education and experience in online learning are essential (Ives and Walsh, 2021) due to the fact that these instructors "*who teach online are at the forefront of implementation and play a critical role in online student success*" (Pedro and Kumar, 2020, p.50). More precisely, instructors must be competent to use various technology platforms such as learning management systems, multimedia technologies and a range of learning application software available online (Atim *et al.,* 2021). E-learning instructors should also have access to the appropriate infrastructure support services and facilities to ensure that their skills are fully utilized. This has practical and policy consequences for e-learning instructors, HEI management and policymakers in terms of how e-learning should be adopted, with a focus on instructor support and training services, in order to accept the use of available technologies for instruction and learning (Almas, Machumu and Zhu, 2021).

Obtaining e-learning instructors' support is therefore indispensable and it is governed by instructor attitudes toward "*perception, computer knowledge, motivation, learning style and*

accessible infrastructures, since these largely affect the successful establishment and implementation of e-learning" (Mohammadzadeh, Ghalavandi and Abbaszadeh, 2017, p.4). The instructor attitudes towards effectiveness and the barriers related to e-learning are viewed as being important implementation factors of e-learning education especially during the COVID-19 crisis and the demands placed on the need for alternative forms of learning delivery (Al-Karaki *et al.,* 2021). HEIs face certain barriers in this regard, such as lack of financial resources (Mohammadzadeh, Ghalavandi and Abbaszadeh, 2017), potential deficiency in skills and absence of expertise in the use of ICT (Ahmad *et al.,* 2018). It is evident that in order to cope with the demands of the paradigm shift for e-learning delivery, HEIs are found in a position where they must implement an e-learning model adapted from the traditional model in short timeframes, and this requires management's adequate knowledge about the impact of CSFs as well as associated barriers for the achievement of e-learning goals (Farid *et al.,* 2018).

It has been noted that one of the main barriers that HEIs are faced with in terms of e-learning implementation is the lack of financial resources to fully respond to the needs of the system. Therefore, the costs associated with implementation need to be carefully considered by HEI management. The calculation of the costs of distance learning systems could be broken down into the following broad categories: development and fixed production costs, distribution costs, and reception and delivery costs (Ng, 2000). It could be further deduced that the above costs need to be measured and assessed, and this process includes taking into account capital and recurrent costs, production and delivery costs and fixed and variable costs. Many factors affecting cost-effective implementation of e-learning have been identified throughout the previous decades, especially when this would be examined within effectiveness in the eyes of the society, the HEI, and the student at the same time. Potential conflicts would arise between each subject group, but also within each of the subject areas. It has been proposed by Hjeltnes and Hansson (2005) that one of the ways to overcome these conflicts is to encourage regulatory bodies to subsidize the development of e-learning from the society perspective, the institution/ learning provider perspective as well as from the learner perspective. Benefits to be obtained are many, such as education being more readily available, removing geographical obstacles, avoiding costly duplication, instructor and student time saving, student adjusted approach, higher recognition, global competitiveness, and technological updates. This analysis deepens when costs are measured against the benefit received or effectiveness achieved such as performance-driven, value-driven benefits, and societal or "value-added" benefits (Bartolic-Zlomislic and Bates, 1999). According to Meza-Bolaños *et al.* (2016), the cost structures of

online learning systems are different from those of traditional distance education systems, and it is essential to understand the costs involved in an online education system before considering its cost-effective implementation. The concept of investment creates the need to study notions such as profitability and impact and there are different methodologies that have attempted to measure these in terms of using online learning platforms, all of which focus on sets of quantifiable and non-quantifiable aspects while examining various stakeholder perspectives (Meza-Bolaños, Compañ-Rosique and Satorre-Cuerda, 2016). Determining the proper approach to implementation investment and additionally applying the correct methodologies for results measurement are challenging tasks taking into account the dynamic environment that characterizes e-learning. It has consequently been suggested that the development of e-learning for students requires modification of certain aspects of its implementation, which no longer satisfy all the needs of the educational process, in particular, teaching and its assimilation by students (Kryshtanovych *et al.,* 2020).

E-learning research consistently refers to the promise and opportunity of its cost-effectiveness in contrast to face-to-face instruction; however, according to Meinert *et al.* (2019) the underlying data supporting the costs necessary for their delivery are not well understood. In order to implement further economic evaluation to understand proprieties demonstrating the value of e-learning in contrast to other learning types, it is first necessary to develop a standard means of calculating costs in the delivery of these types of learning delivery. Through consistent management of factors affecting costs in course production, further research could be undertaken using standard economic evaluation methods to evaluate the advantages of using e-learning (Meinert *et al.,* 2019). The choice of virtual learning environment platform is also of significance in minimizing e-learning costs, as proposed by Zi-Yu Liu and Lomovtseva *et al.* (2020), who have examined a number of distance learning systems throughout the course of their work.

The researcher thus appreciates the notion that there are a variety of cost effectiveness considerations that must be taken into account in order to ensure the sustainable implementation of modern e-learning systems. Issues such as limited availability of resources (Daniela *et al.,* 2018) pose significant risks and barriers (Naveed and Ahmad, 2019) to the proper handling of cost effectiveness issues in e-learning, especially since there is pressure on institutions now more than ever in the post COVID-19 social landscape, to switch the majority of their learning delivery into an e-learning format (Ionescu *et al.,* 2020). On the other hand,

initiatives such as MOOCs (Li and Zhou, 2018) and open online learning practices (Tereseviciene *et al.,* 2020) stand to create many opportunities for a more cost effective management of e-learning resources. As a result, a strategic policy for resource management (Naveed *et al.,* 2020) and its impact on cost effectiveness considerations on vital e-learning components such as course and instructors' development, technology and infrastructure, support services and administrative services is paramount, as identified by Bryan *et al.* (2018).

Ultimately, a higher level of cost-effective implementation would ensure affordability (Bryan, Leeds and Wiley, 2018) and this further reinforces the proposition that implementation of e-learning and its cost effectiveness is a multi-dimensional research domain which has not only educational but also international business, financial and economic implications. This multi-dimensional topic has been presented within the New M-Learning Model (Al-Hunaiyyan, Al-Sharhan and Alhajri, 2017) where the authors have presented a model aimed at implementation of mobile computing in a modern educational setting. A new m-learning definition which focuses on controlling the learning environment has also been introduced in this study and in addition, some of the challenges of m-learning project implementation, such as institutional design, growth, cultural and social elements have been addressed. (Al-Hunaiyyan, Al-Sharhan and Alhajri, 2017). The model is showcased in Figure 2.2 below.

Figure 2.2: The new m-learning model (Source: Al-Hunaiyyan, Al-Sharhan *et al.*, 2017)
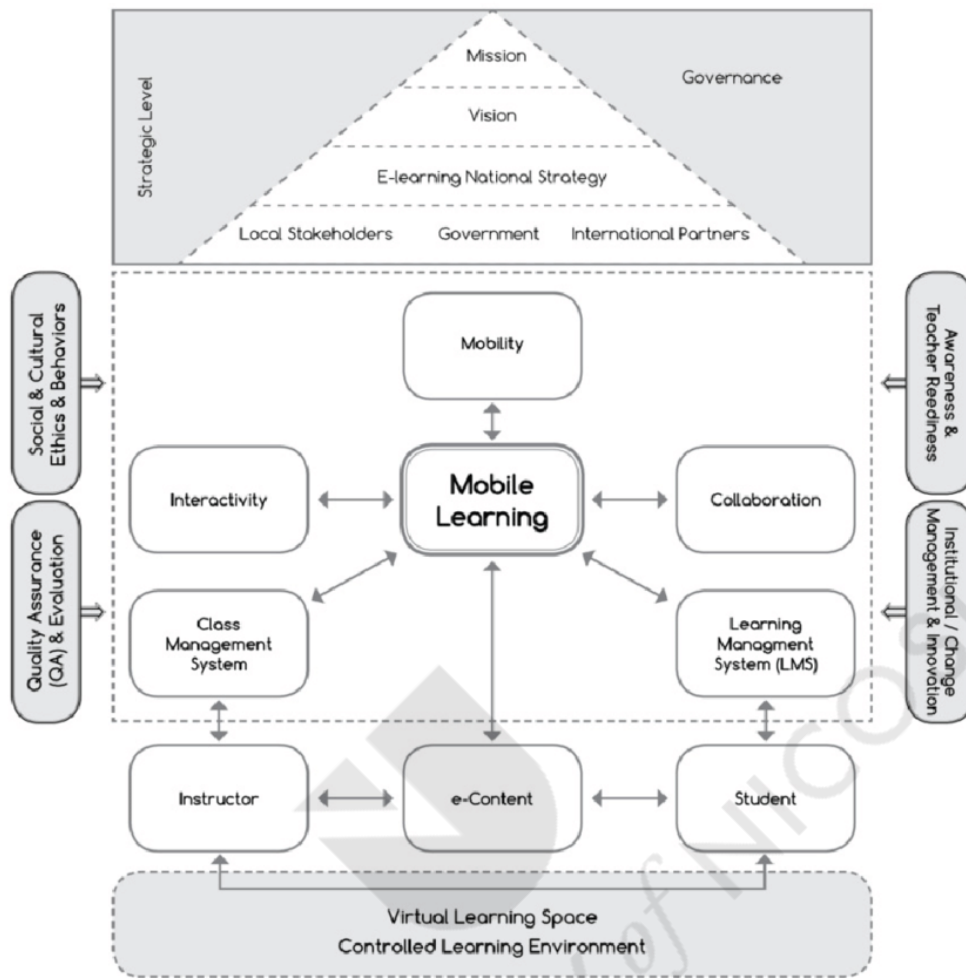
The model serves to demonstrate the multi-dimensionality of the notion of e-learning implementation by shedding light on the fact that the HEI must consider a variety of factors ranging from stakeholder interests, to the quality of the e-learning system itself and the steps taken for successful implementation such as ensuring teacher readiness, good change management and innovation practices, as well as a robust quality assurance procedure (Al-Hunaiyyan, Al-Sharhan and Alhajri, 2017). There are consequently many factors that currently put e-learning HE at a crucial juncture. Parsons and Shelton (2019) attest that HE management should be encouraged to understand e-learning institutional administration principles, existing organizational frameworks, and procedures. This is because according to Singh and Hardaker (2017) it is most commonly senior managers that develop, discuss, and authorize HEI e-learning strategies. Subsequently, it would be advisable for HEI management to examine various models for e-learning implementation such as for instance the full-stack model proposal to willingly implement e-learning at HEIs by Vaza, Peres *et al.* (2020). This model

examines two distinct modules to e-learning: the physical/infrastructural module as well as the policies and practices module, alongside associated e-learning implementation at HEIs (Vaza *et al.,* 2020), and is outline in Figure 2.3 below.

Figure 2.3: Proposed model for a successful implementation of e-learning (Source: Vaza, Peres *et al.*, 2020)

Having in mind the wide array of both physical infrastructural layer elements and policies practices layer elements as outlined in Figure 2.3 above, it has been proposed that a strategic policy for resource management (Naveed *et al.,* 2020) would be very useful for HEI management to assist with the prioritization of implementation tasks. The Strategic Policy for Resource Management framework suggests that here are several CSFs that affect the performance of e-learning, so it is necessary to analyze and prioritize them so that management delivering e-learning can efficiently invest and regulate e-learning infrastructure. In e-learning performance, CSFs play a key role and so investigations related to the influence of dimensions and CSFs on teaching and learning seem to be obligatory. Upon assessment of each CSF's impact, the different stakeholder groups like *"university authority, students, and instructors, will be able to control the negative effects of each of these E-Learning factors and their dimensions"* (Naveed *et al.,* 2020, p.21). In order to get an effective implementation result, HEIs must carefully analyze CSFs and manage those that are critical for the implementation

phase. CSFs are the variables that must be measured in each phase of implementation, beginning with the planning phase, to ensure a successful execution process. It is therefore critical to identify, control, and measure CSFs to ensure the overall system's success in meeting the quality standards of sustainable e-learning (Ahmad *et al.,* 2018).

Achieving the successful implementation of an effective e-learning system requires management and instructors' adequate knowledge about impact of CSFs as well as associated barriers for achievement of e-learning goals (Farid *et al.,* 2018). Having in mind the diversity in research results concerning the exploration of e-learning effectiveness, and the apparent importance of the instructors' involvement in making e-learning a success, the researcher has prioritized the exploration of e-learning effectiveness from the instructors' perspective. This would also give insights to discern how instructors believe that e-learning could be implemented within HEIs by management in a cost-effective way, primarily by overcoming the most significant barriers to implementation. This gives rise to the first RQ of the present Thesis, namely:

RQ1: How do e-learning instructors perceive and evaluate factors for e-learning effectiveness and barriers to e-learning implementation?

In the current technological and social landscape, there are many emerging themes on e-learning methods in organizations. Due to the existence of a wide range of CSFs that affect e-learning performance, it is crucial to evaluate and prioritize them so that e-learning providers can effectively invest in and govern e-learning infrastructures. CSFs are vital to the proper implementation of e-learning (Naveed *et al.,* 2020).

Next, the CSFs for e-learning effectiveness and barriers to implementation included in this study are analyzed separately, and this analysis gives rise to the preliminary factors included in the initial conceptual framework. The outcomes exhaustively answer RQ1a and RQ1b arising through RQ1. In particular, RQ1a examines instructor perceptions towards e-learning CSFs and RQ1b examines instructor perceptions towards barriers hindering e-learning implementation.

The broad dimensions that have been used to define the concept of e-learning effectiveness can be further broken down into specific, precise and measurable CSFs. The researcher next moves

onto defining e-learning effectiveness through examination of the plethora of CSFs explored in prior literature.

2.6 Extant literature exploring e-learning CSFs

In order for e-learning to take place effectively in an online environment, several preconditions must be met (Ahmad *et al.,* 2018). These preconditions are termed as e-learning CSFs and as per Al-Fraihat *et al.* (2017), there is a need for a comprehensive, grounded in literature and up-to-date study that gathers all these factors. The CSFs affecting the e-learning effectiveness are many hence it is essential to evaluate and prioritize them so that the HEIs providing e-learning can invest in and regulate the e-learning infrastructure in an effective manner. CSFs play a key role in e-learning effectiveness, consequently investigations into to the effect of dimensions and CSFs on instruction and learning are needed (Naveed *et al.,* 2020). The findings from prior studies indicate that there are a few recurring themes in this field of study, with the topic of e-learning course quality appearing to be the most prevalent. Far fewer prior scholarly works, however, have studied institutional, societal, and cultural CSFs serving as preconditions to effective e-learning (Kumar *et al.,* 2019).

Among the plethora of CSFs identified by extant literature, certain ones seem to be more dominant according to Nortvig *et al.* (2018, p.53) such as:

> *instructor presence in online settings, interactions between students, instructors and content, designed connections between online and offline activities as well as between campus-related and practice-related activities.*

Alhabeeb and Rowley (2017) through their research work determine the relative significance of a wide range of CSFs and compare their findings to those of other researchers on a global scale. CSF areas relating to student and instructor characteristics have been identified as the two most important components in this process and further examination of each component group reveals that the most valued CSFs are "*instructor knowledge with learning technologies, student knowledge of computer systems, and technical infrastructure as important facilitators of success*" (Alhabeeb and Rowley, 2017, p.131).

The issue of investigating the e-learning CSF is made quite complex by the fact that once the most prevalent dimensions of CSFs have been identified by prior literature, they also must be examined in terms of their relevant importance to the most significant e-learning stakeholder

groups. Prior studies have made attempts to obtain relevant stakeholder views, with the student perspective naturally being the most widely covered point of view in terms of e-learning CSFs prioritization. The following CSFs have been explored from the student perspective: pedagogical, which are among the most important issues and need to be holistically considered in e-learning; technological which determine e-learning PEOU; social, which are the CSFs that need to be addressed prior to ensuring effective on PU and PEOU; and individual CSFs that also have an effect on PEOU of users, and are dependent on the individual's features (Chavoshi and Hamidi, 2019). Moreover, extant literature indicates that the CSFs "*influencing students' perception and use of online learning environment include supportive cultural practices, access to computers, system or online environment availability, computer and online learning self-efficacy, user perception of usefulness and ease of use*" (Barclay, Donalds and Osei-Bryson, 2018, p.603). The way in which students view the particular HEIs that offer e-learning, as a result of the actual capabilities of the e-learning system itself adopted by the institutions, has also been explored through extant literature. Da Costa and Pelissari (2017) examine which CSFs are associated with the perception of HEI corporate image, from the viewpoint of e-learning students at public HEIs. The study demonstrates both the multidimensionality of the HEIs' corporate global image and the fact that the image is associated most strongly with e-learning quality. E-learning environment has also been identified as a factor very strongly associated with affective HEI image.

Other viewpoints being represented in extant literature are those of e-learning experts, management, and instructors. According to the perspective of e-learning experts, the quality of management has been determined to be the foremost CSF in determining the success of e-learning. This factor is followed by instructor-student characteristics, technology infrastructure, financial sources, teaching strategies, and support services (Mohammadzadeh, Ghalavandi and Abbaszadeh, 2017). In a study carried out by Gupta *et al.* (2020) they discuss CSFs such as instructor competencies and technology infrastructure with e-learning management in an attempt to obtain their opinions, while in a study carried out by Al-Samarraie *et al.* (2018) to obtain instructors' perspectives, student characteristics was one of the most significant CSFs discussed.

Some attempts have been made in scientific literature to gather, prioritize and analyze e-learning CSFs by means of using theoretical models. One such example stems from the findings by Eom and Ashill (2018) who have indicated that their e-learning success model satisfactorily

explains and predicts the interdependency of six CSFs of e-learning systems; course design quality, instructor, motivation, student-student dialog, student-instructor dialog, and self-regulated learning and perceived learning outcomes (Eom and Ashill, 2018).

Figure 2.4: System's view of e-learning systems (Source: Eom and Ashill, 2016, p. 189)
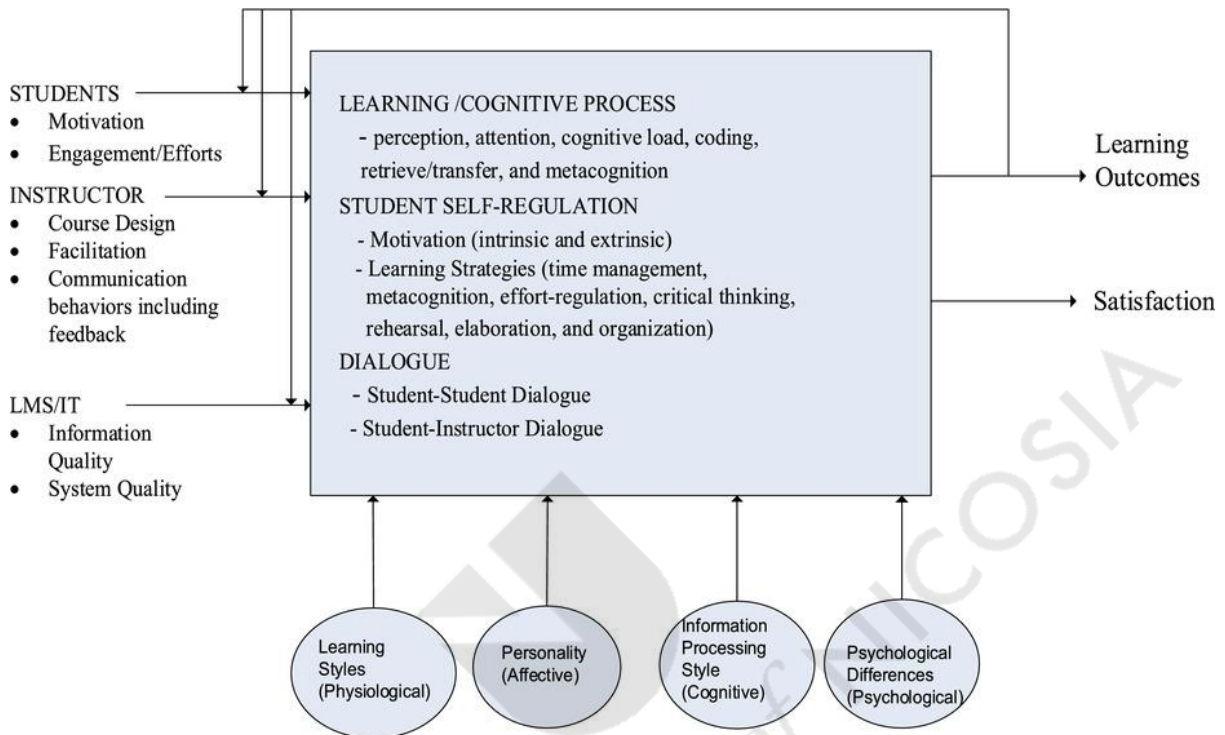
These findings also overlap with the Cloud Computing Environment model: Critical Success Factors (CSFs) for Cloud-Based e-Learning (Naveed and Ahmad, 2019); whereby the researchers have identified twelve CSFs and have grouped them into the following sub-domains: cloud service resilience, university technological maturity, university organizational readiness and Cloud Based e-Learning imperatives. As identified by the model, the CSFs as identified are expected to be useful in terms of the implementation of e-learning platforms stored on the cloud (Naveed and Ahmad, 2019).

Following a similar vein, Ahmad *et al.* (2018) through their Interpretive structural modeling (ISM): Relationship Modeling of Critical Success Factors for Enhancing Sustainability and Performance in E-Learning, have identified that in order for learning to take place in the e-learning environment, specific preconditions need to be met. These are the following: communication via easy language, computer skills, and motivation. These variables are

suggested to cause higher interaction with other students and instructors, thus to successful learning (Ahmad *et al.,* 2018). The model is outlined in Figure 2.5 below.

Figure 2.5: Relationship modeling of critical success factors for enhancing sustainability and performance in e-learning (Source: Ahmad, Quadri *et al.*, 2018)
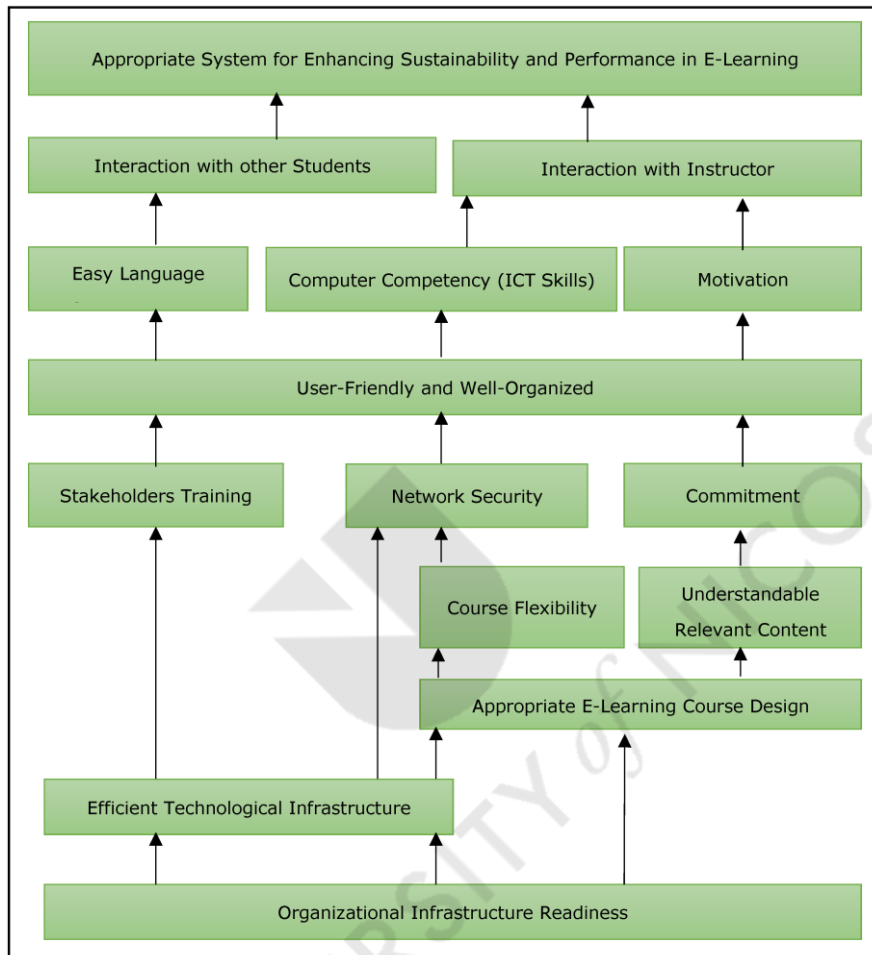
Certain authors have also attempted to not only plot down the most relevant CSFs by means of a model, but also to offer methodologies for their prioritization. The Critical Success Factor Problem Hierarchy (Alqahtani and Rajkhan, 2020) is one such framework, and it suggests that:

> *"the most significant factors influencing e-learning success during the COVID-19 pandemic were related to technology knowledge management, support from management, increased student awareness of utilizing E-learning systems, and demanding a high level of information technology from the instructors, students, and universities"* (Alqahtani and Rajkhan, 2020, p.14)

The framework is outlined in Figure 2.6 below.

Figure 2.6: Critical success factor problem hierarchy (Source: Alqahtani and Rajkhan, 2020)
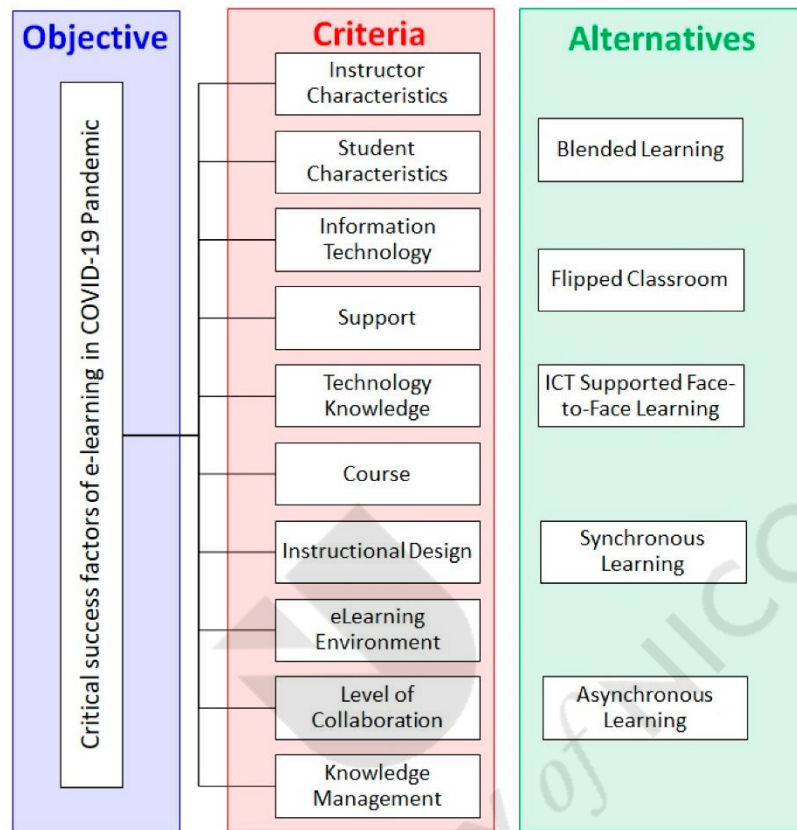
2.6.1 The necessity to conduct a systematic literature review of e-learning CSFs

Given the disparate nature of findings in extant literature concerning e-learning CSFs and the multiple stakeholder perspectives under which they have been examined, the Thesis' author has deemed it necessary to conduct a systematic review of literature focusing on the topic of e-learning CSFs and stakeholder perspectives, with a specific focus on instructors' perspectives, given their importance (Barclay, Donalds and Osei-Bryson, 2018) and underrepresentation (Kumar *et al.,* 2019) in extant literature. The systematic literature approach to e-learning CSFs has helped in overcoming the issue of the multiplicity of e-learning CSFs that have been identified in extant literature and has thus presented a scientific methodology on which the author has based the prioritization reasoning for the most prominent CSFs selected to act as preliminary factors in the initial conceptual framework of the Thesis.

The systematic literature review of e-learning CSFs has been conducted by examining scientific articles published on EBSCO Host databases. As a result of the systematic review, the author has been able to highlight the most prominent CSFs identified by contemporary scientific literature produced within the five-year period January 2017 – December 2021 and has attempted to showcase how proper prioritization of these could have far reaching implications for e-learning stakeholders. Subsequently, following the results as a basis, the author has addressed the most recurrent CSFs identified by the present study from various stakeholder perspectives and has included these as preliminary factors in the initial conceptual framework. The process followed to conduct the systematic literature review of e-learning CSFs in extant literature and the relevant results are discussed in the subsequent section of the Thesis.

2.6.2 E-learning CSFs systematic literature review methodology

A systematic review is driven by a review question, from which search strings for the scientific database searches are defined (De Menezes and Kelliher, 2011; Tranfield, Denyer and Smart, 2003).

Description of systematic literature review methodology

The current review has followed the three-stage approach of planning, execution, and reporting (Tranfield, Denyer and Smart, 2003). During the planning stage, the research objectives and review protocol were stated. During the execution stage the researcher has performed the literature review and screened away articles based on exclusion criteria, and finally a descriptive and thematic analysis of extant literature has been carried out during the reporting stage. The process is outlined in Figure 2.7.

Figure 2.7. Flow diagram of e-learning CSFs systematic review process (Source: Author's own)

Flow diagram of the systematic review process

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                          │       Scoping study         │
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                          │ Title screening and relevance│
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                          │  and exclusion criteria:    │
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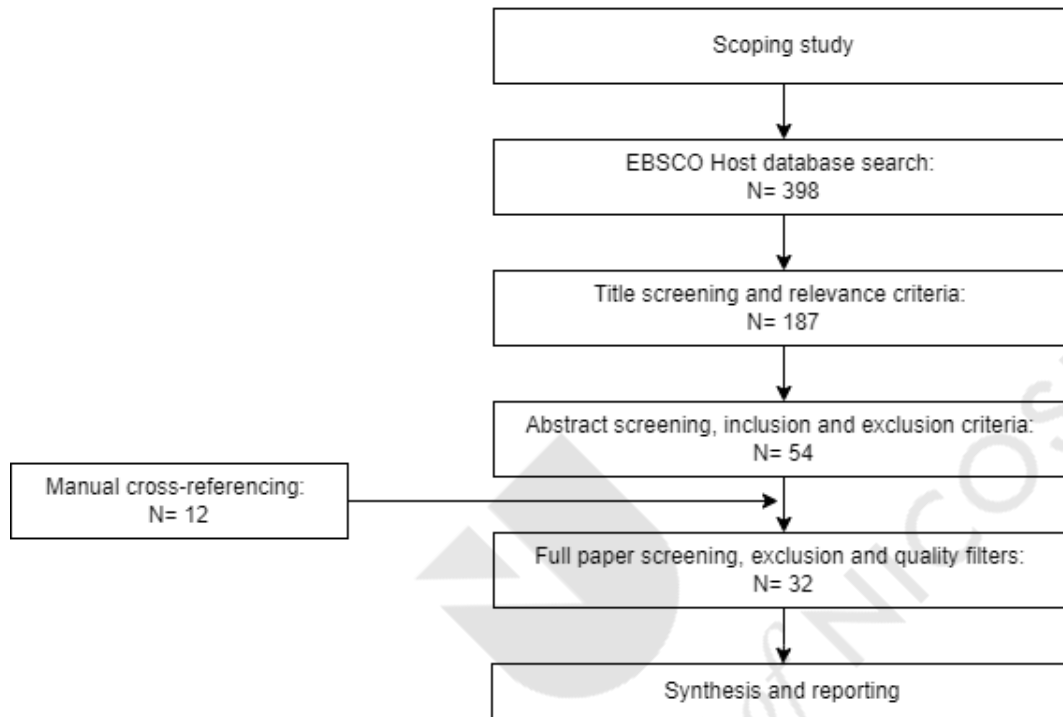
2.6.3 Conducting the e-learning CSFs systematic review

Planning and execution

A scoping study was undertaken prior to the systematic review to determine the extent and relevance of the literature and to define e-learning CSFs (Tranfield, Denyer and Smart, 2003). This preliminary inquiry aided in the development of the focus for the following stages. EBSCO Host was selected as the search database since this is one of the most widely used databases for management related systematic reviews. An initial search was performed on all the EBSCO Host electronic databases using the following search strings: *"Critical success factor*" OR "CSF*" AND "Online education" OR "distance learning" OR "e-learning" OR "elearning" OR "online learning" OR "technology enhanced learning" OR "e-learning"*. No limiters were used in the search fields and the number of articles that the initial search produced was recorded. The Thesis' author has taken into account the most commonly used

terminologies for both CSFs and e-learning, and this was reflected in the design of the search strings.

Literature selection process

As the focus of the present systematic review is contemporary scientific literature on the concept of e-learning CSFs, the researcher as a result of the scoping study has excluded articles published before 2017 in order to ensure results are both current and relevant for the purposes of meeting the research objectives. Only scholarly (peer reviewed) journals were included in the initial sample prior to further screening in order to enhance the scientific validity of the study.

The first set of articles that were found to be potentially relevant from the selected databases after applying the search strings amounted to 398. Only scholarly (peer reviewed) journals published on EBSCO Host databases from January 2017 until December 2021 were included through the initial prescreening process. In subsequent stages of the review, the first sample of articles was reduced systematically as outlined below.

Irrelevant and duplicate articles were removed based on title screening, resulting in the exclusion of a total of 211 articles. The inclusion and exclusion criteria, outlined in Table 2.1, were applied throughout the review of the remaining 187 articles. The present study included both conceptual and empirical review papers to ensure all relevant literature in the field during the selected period is covered and examined. Quantitative, qualitative and mixed methods empirical papers were included, as well as literature review and exploratory studies conceptual papers. All geographical areas where the empirical studies were conducted, have been included as the aim of the research is to obtain overall knowledge on CSFs regardless of location. Concerning exclusion criteria, these extended to articles not written in English, published prior to 2017, non-scientific, non-peer reviewed and non-article texts. Articles that did not primarily concentrate on CSFs relevant to e-learning were also excluded.

Table 2.1. E-learning CSFs systematic review inclusion and exclusion criteria (Source: Author's own)

Inclusion Criteria	Exclusion Criteria
Qualitative review	Non-English written articles
Quantitative review	Published before 2017
Literature review	Non-scientific
Any geographical region	Non-peer reviewed
Published articles	Non-article texts
e-learning in any industry	Not relevant to e-learning CSFs

The research's selection criteria intended to identify the existing literature, and the specified inclusion and exclusion criteria were utilized so as to limit the potential of reviewer bias. Only studies that met all of the review protocol's inclusion criteria were chosen. In addition, the researcher examined the abstracts of all publications in this step to confirm that they were related to the study topic and the review's goals. A preliminary list of 54 studies emerged at this stage. The researcher additionally applied manual cross-referencing to find other studies that the search databases had missed, resulting in the addition of another 12 papers, bringing the total number of articles to 32.

The final list of articles was then entered into a data extraction table that contained the following details for each paper: publication citing details, year of publishing, journal, methodology, sample size, theories applied, research questions, key findings and avenues for future research. This information was used for the descriptive and thematic analysis applied to the collected literature of e-learning CSFs.

2.6.4 Results of the systematic literature review of e-learning CSFs

The results yielded by the systematic literature review of e-learning CSFs have been addressed by conducting a descriptive and thematic analysis of the literature.

Descriptive analysis of the literature

The final list of 32 articles consisted of 5 articles published in 2017, 11 articles published in 2018, 8 articles published in 2019, 6 articles published in 2020 and 2 articles published in 2021. This indicates that 2018 was a year that garnered a higher research interest concerning the topic of e-learning CSFs.

Figure 2.8: Evolutionary development of e-learning CSFs literature published on EBSCO Host databases (Source: Author's own)
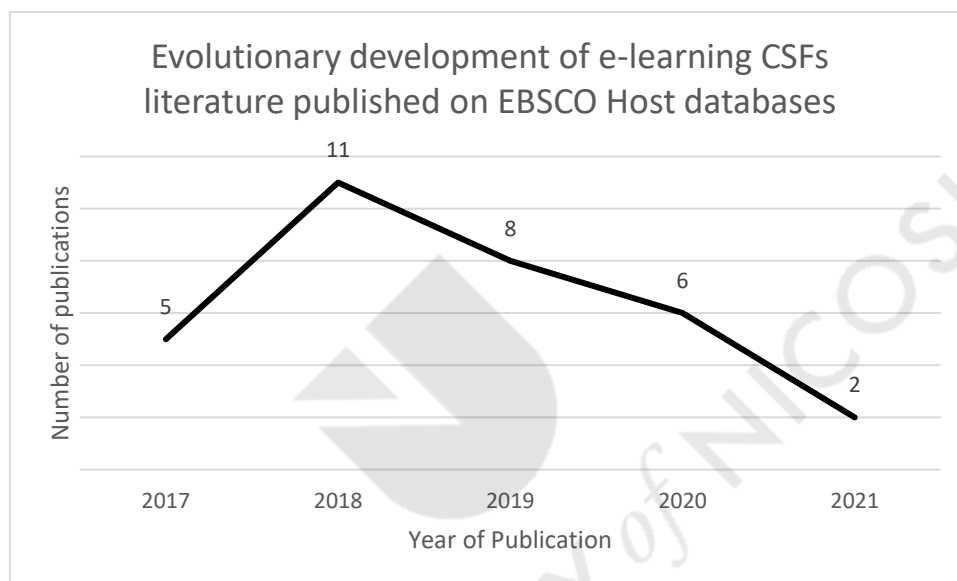
Research on e-learning CSFs has been published in a wide range of scientific journals. Three (3) articles were selected from the journal Sustainability, 2 articles were selected from the journals Computers & Education, Education & Information Technologies and the Journal of Information Technology Education, followed by the remaining 23 articles being selected from 23 journals accounting for one article each.

Table 2.2: Publication outlets used in e-learning CSFs systematic review (Source: Author's own)

Publication outlet	No. of Publications	Weight (%)
Sustainability	3	9%
Computers & Education	2	6%
Education & Information Technologies	2	6%
Journal of Information Technology Education	2	6%
Australasian Journal of Educational Technology	1	3%
Brazilian Business Review	1	3%
British Journal of Educational Technology	1	3%
Computational Intelligence and Neuroscience	1	3%
Education Sciences	1	3%
E-Learning and Digital Media	1	3%
Electronic Journal of e-Learning	1	3%
Future of Medical Education Journal	1	3%
Information Technology for Development	1	3%
Interactive Learning Environments	1	3%
International Journal of Education & Development using Information & Communication Technology	1	3%
International Journal of Educational Management	1	3%
International Journal of Educational Technology in Higher Education	1	3%
International Journal of Emerging Technologies in Learning	1	3%
International Journal of Management Education	1	3%
Journal of Social Sciences and Humanities	1	3%
Journal of Workplace Learning	1	3%
Online Learning	1	3%
Pakistan Journal of Distance and Online Learning	1	3%

PLoS ONE	1	3%
Proceedings of the International Conference on e-Learning	1	3%
Studies in Higher Education	1	3%
Telematics & Informatics	1	3%

A total of 25 empirical articles are present within the selected literature, thus making up 78% of publications and constituting the majority. Thirteen (13) articles adopt a quantitative research approach, 7 articles adopt a qualitative research approach, while the remaining 5 empirical articles adopt a mixed methods approach. The non-empirical articles comprise the remaining 22% of the systematically selected sample, with 6 articles' authors conducting a literature review and 1 article engaging in an exploratory study.

Table 2.3: Research methodology approaches within the selected e-learning CSFs publications (Source: Author's own)

Empirical articles	**25**	**78%**
Quantitative research methodology	13	41%
Qualitative research methodology	7	22%
Mixed research methods	5	15%
Non-empirical articles	**7**	**22%**
Literature review	6	19%
Exploratory article	1	3%

Thematic analysis of the literature

The author, after carefully studying the literature, has identified the most recurrent CSF dimensions discussed in extant literature based on the incidence count and number of publications that include each dimension. The CSF dimensions have been formulated by identifying the common CSF themes and assigning them to the corresponding appropriate dimension.

Table 2.4: Most recurrent e-learning CSF dimensions identified in literature (Source: Author's own)

CSF dimensions	Incidence count*	No of publications	References
Learning quality and environment (LQE)	39	17	(Ahmad *et al.,* 2018), (Alhabeeb & Rowley, 2017), (Alhabeeb & Rowley, 2018), (Alqahtani & Rajkhan, 2020), (Chavoshi & Hamidi, 2019), (Choudhury & Pattnaik, 2020), (da Costa & Pelissari, 2017), (Daniela *et al.,* 2018), (Farid *et al.,* 2018), (Graham, 2018), (Lee *et al.*, 2019), (Miranda *et al.,* 2017), (Muljana & Luo, 2019), (Naveed *et al.,* 2020), (Olasina, 2019), (Uppal *et al.*, 2018), (Van Wart *et al.,* 2020)
Support and training conditions (STC)	28	18	(Ahmad *et al.,* 2018), (Al-Fraihat *et al.*, 2017), (Alhabeeb & Rowley, 2017), (Alhabeeb & Rowley, 2018), (Alqahtani & Rajkhan, 2020), (Al-Samarraie *et al.,* 2018), (Chavoshi & Hamidi, 2019), (Choudhury & Pattnaik, 2020), (Daniela *et al.,* 2018), (de Metz & Bezuidenhout, 2018), (Kumar *et al.,* 2019), (Lee *et al.*, 2019), (Miranda *et al.,* 2017), (Mohammadzadeh *et al.*, 2017), (Muljana & Luo, 2019), (Naveed & Ahmad, 2019), (Naveed *et al.,* 2020), (Van Wart *et al.,* 2020)
Instructional design (ID)	25	16	(Ahmad *et al.,* 2018), (Al-Fraihat *et al.*, 2017), (Alhabeeb & Rowley, 2017), (Alqahtani & Rajkhan, 2020), (Al-

			Samarraie *et al.,* 2018), (Choudhury & Pattnaik, 2020), (da Costa & Pelissari, 2017), (Daniela *et al.,* 2018), (Farid *et al.,* 2018), (Graham, 2018), (Kumar *et al.,* 2019), (Miranda *et al.,* 2017), (Mohammadzadeh *et al.*, 2017), (Muljana & Luo, 2019), (Naveed *et al.,* 2020), (San-Martín *et al.,* 2020)
Perceived usefulness and ease of use (PUEU)	23	15	(Alhabeeb & Rowley, 2018), (Alqahtani & Rajkhan, 2020),(Al-Samarraie *et al.*, 2018), (Barclay *et al.*, 2018), (Chavoshi & Hamidi, 2019), (Choudhury & Pattnaik, 2020), (Daniela *et al.,* 2018), (Farid *et al.,* 2018), (Kumar *et al.,* 2019), (Miranda *et al.,* 2017), (Naveed & Ahmad, 2019), (Naveed *et al.,* 2020), (Olasina, 2019), (San-Martín *et al.,* 2020), (Van Wart *et al.,* 2020)
Technology infrastructure (TI)	22	15	(Ahmad *et al.,* 2018), (Al-Fraihat *et al.*, 2017), (Alhabeeb & Rowley, 2018), (Alqahtani & Rajkhan, 2020), (Al-Samarraie *et al.,* 2018), (Choudhury & Pattnaik, 2020), (Daniela *et al.,* 2018), (Graham, 2018), (Gupta *et al.*, 2020), (Kumar *et al.,* 2019), (Miranda *et al.,* 2017), (Mohammadzadeh *et al.*, 2017), (Naveed & Ahmad, 2019), (Naveed *et al.,* 2020), (San-Martín *et al.,* 2020)
Instructor characteristics (IC)	21	12	(Alhabeeb & Rowley, 2017), (Alhabeeb & Rowley, 2018), (Alqahtani & Rajkhan, 2020), (Atim *et al.,* 2021), (Choudhury & Pattnaik, 2020), (Farid *et al.,* 2018), (Gupta *et al.*, 2020), (Kumar

			et al., 2019), (Lee *et al.*, 2019), (Miranda *et al.,* 2017), (Mohammadzadeh *et al.*, 2017), (Naveed *et al.,* 2020)
Student characteristics (SC)	20	12	(Alhabeeb & Rowley, 2017), (Alhabeeb & Rowley, 2018), (Alqahtani & Rajkhan, 2020), (Atim *et al.,* 2021), (Choudhury & Pattnaik, 2020), (Daniela *et al.,* 2018), (de Metz & Bezuidenhout, 2018), (Farid *et al.,* 2018), (Gupta *et al.*, 2020), (Miranda *et al.,* 2017), (Muljana & Luo, 2019), (Naveed *et al.,* 2020)
Course content (CC)	12	6	(Ahmad *et al.,* 2018), (Chavoshi & Hamidi, 2019), (Choudhury & Pattnaik, 2020), (da Costa & Pelissari, 2017), (Miranda *et al.,* 2017), (Naveed *et al.,* 2020), (Uppal *et al.*, 2018)
Ease of system access (ESA)	10	7	(Ahmad *et al.,* 2018), (Alhabeeb & Rowley, 2018), (Barclay *et al.*, 2018), (Choudhury & Pattnaik, 2020), (Farid *et al.,* 2018), (Naveed & Ahmad, 2019), (Naveed *et al.,* 2020)
Social factors (SF)	8	7	(Al-Samarraie *et al.,* 2018), (Barclay *et al.*, 2018), (Chavoshi & Hamidi, 2019), (Choudhury & Pattnaik, 2020), (de Metz & Bezuidenhout, 2018), (Olasina, 2019), (Van Wart *et al.,* 2020)

The incidence count has been defined as the total unique number of times a CSF belonging to a particular dimension is identified and listed in a publication, with duplicates being excluded from the final count. For instance, the following CSFs have been grouped under the LQE dimension: learning environment (Alhabeeb and Rowley, 2017), e-learning environment*

(Alqahtani and Rajkhan, 2020)*, positive learning climate* (Choudhury and Pattnaik, 2020)*, quality education system* (Farid *et al.,* 2018)*, etc.*

The most prominently discussed CSF dimensions in the selected literature are Learning quality and environment (LQE), Support and training conditions (STC), Instructional design (ID), Perceived usefulness and ease of use (PUEU) and Technology infrastructure (TI). The author has subsequently identified the four stakeholder perspectives from which the gravity of e-learning CSFs is examined in the literature: student, instructor, expert and management perspectives. Stakeholder perspectives are examined in 24 articles, whereas the perspective is undefined in 8 of the articles. As stakeholder acceptance is crucial for the success of e-learning (Miranda *et al.,* 2017), it is evident from the selected literature that there is significant research effort made to address e-learning CSFs from various stakeholder perspectives. Figure 2.9 outlines the recurrence with which each stakeholder perspective is explored within publications among the selected literature.

Figure 2.9: Stakeholder perspectives under which e-learning CSFs are explored in literature (Source: Author's own)
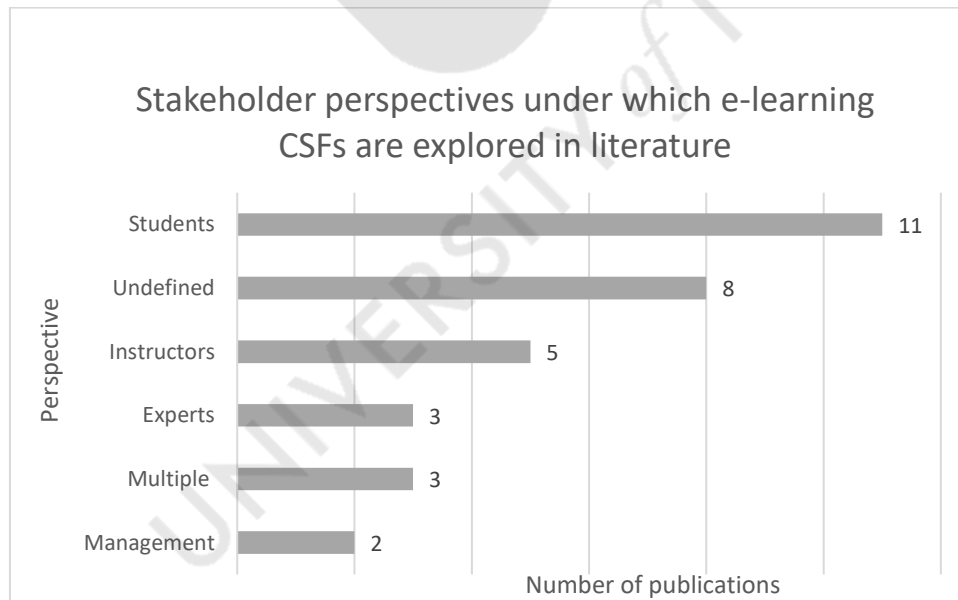
It is interesting to note that once the various stakeholder perceptions are being explored, the discussion recurrence of the different CSF dimensions changes as demonstrated in Table 2.5. For instance, despite the fact that LQE is generally the most recurrent CSF dimension in selected literature as well as while the student perspective is being explored, this dimension

does not seem to be sufficiently discussed while exploring CSFs from the perceptions of instructors, experts and management. The author then proceeded to examine the most recurrent CSFs in extant literature as discussed from each stakeholder perspective.

Table 2.5: Most recurrent e-learning CSF dimensions explored under each stakeholder perspective (Source: Author's own)

Stakeholder perspective	CSF dimensions	Incidence count	No of publications	References
Student	LQE	17	7	(Chavoshi & Hamidi, 2019), (Choudhury & Pattnaik, 2020), (da Costa & Pelissari, 2017), (Lee *et al.*, 2019), (Olasina, 2019), (Uppal *et al.*, 2018), (Van Wart *et al.,* 2020)
	PUEU	11	4	(Barclay *et al.*, 2018), (Chavoshi & Hamidi, 2019), (Choudhury & Pattnaik, 2020), (Olasina, 2019)
	STC	9	5	(Alhabeeb & Rowley, 2018), (Chavoshi & Hamidi, 2019), (Choudhury & Pattnaik, 2020), (Lee *et al.*, 2019), (Van Wart *et al.,* 2020)
	IC	8	4	(Alhabeeb & Rowley, 2018), (Atim *et al.,* 2021), (Choudhury & Pattnaik, 2020), (Lee *et al.*, 2019)
	SF	6	5	(Barclay *et al.*, 2018), (Chavoshi & Hamidi, 2019), (Choudhury & Pattnaik, 2020), (Olasina, 2019), (Van Wart *et al.,* 2020)
Instructor	IC	6	4	(Alhabeeb & Rowley, 2018), (Gupta *et al.*, 2020),

				(Mohammadzadeh *et al.*, 2017), (San-Martín *et al.,* 2020)
	STC	5	4	(Alhabeeb & Rowley, 2018), (Al-Samarraie *et al.,* 2018), (de Metz & Bezuidenhout, 2018), (Mohammadzadeh *et al.*, 2017)
	TI	4	4	(Al-Samarraie *et al.,* 2018), (Gupta *et al.*, 2020), (Mohammadzadeh *et al.*, 2017), (San-Martín *et al.,* 2020)
	PUEU	4	2	(Alhabeeb & Rowley, 2018), (Al-Samarraie *et al.,* 2018)
	SC	3	2	(Alhabeeb & Rowley, 2018), (Gupta *et al.*, 2020)
Expert	SC	7	3	(Farid *et al.,* 2018), (Gupta *et al.*, 2020), (Miranda *et al.,* 2017)
	IC	5	4	(Farid *et al.,* 2018), (Gupta *et al.*, 2020), (Miranda *et al.,* 2017), (Mohammadzadeh *et al.*, 2017)
	TI	5	4	(Ahmad *et al.,* 2018), (Gupta *et al.*, 2020), (Miranda *et al.,* 2017), (Mohammadzadeh *et al.*, 2017)
	CC	5	3	(Ahmad *et al.,* 2018), (Gupta *et al.*, 2020), (Miranda *et al.,* 2017)
	ID	4	3	(Ahmad *et al.,* 2018), (Farid *et al.,* 2018), (Mohammadzadeh *et al.*, 2017)
Management	IC	4	4	(Alhabeeb & Rowley, 2017), (Alqahtani & Rajkhan, 2020), (Gupta *et al.*, 2020), (Mohammadzadeh *et al.*, 2017)

				(Alqahtani & Rajkhan, 2020),
	TI	4	3	(Gupta *et al.*, 2020),
				(Mohammadzadeh *et al.*, 2017)
	ID	4	3	(Alhabeeb & Rowley, 2017), (Alqahtani & Rajkhan, 2020), (Mohammadzadeh *et al.*, 2017)
	SC	3	3	(Alhabeeb & Rowley, 2017), (Alqahtani & Rajkhan, 2020), (Gupta *et al.*, 2020)
	STC	3	3	(Alhabeeb & Rowley, 2017), (Alqahtani & Rajkhan, 2020), (Mohammadzadeh *et al.*, 2017)

Another interesting finding as a result of studying the selected publications, is that 14 attempt to prioritize CSFs while the remaining 18 either present or discuss CSFs without prioritizing or ranking them in any order of importance.

E-learning CSFs systematic literature review conclusions

As a result of the systematic literature review that was carried out, the author of the present Thesis has been able to corroborate the topic of quality (LQE) in online courses as the most widespread subject in extant literature on successful e-learning implementation (Kumar *et al.,* 2019). The remaining most prominently discussed CSFs are Support and training conditions (STC), Instructional design (ID), Perceived usefulness and ease of use (PUEU) and Technology infrastructure (TI).

The focus of discussion on CSF dimensions changes notably when explored from the main stakeholders' perspectives: students, instructors, experts, and management. It would be useful to converge the views of all stakeholders in terms of the most prevalent CSF dimensions and ascertain how much value each stakeholder group places on these dimensions. The current systematic review has revealed that there are dimensions which despite being widely discussed in extant literature, are not sufficiently discussed with instructors, experts, and management. More insight is needed concerning these stakeholder groups' views on LQE and this should be complemented by future empirical studies. As a result, the author has been able to determine

which CSF dimensions should be included in the process of examining the e-learning instructors' perspective towards CSFs. This is the methodology and reasoning behind the inclusion of the CSFs below, as preliminary factors of the initial conceptual framework of the present Thesis.

Table 2.6: E-learning effectiveness CSFs examined through the Thesis' conceptual framework (Source: Author's own)

CSFs	Explanation	References
LQE	*Learning quality and environment* determines the features and capabilities of a VLE that enable users to access, interact, and cognitively process the information to enhance the e-learning experience by demonstrating assessment against a set of recognized standards and accreditation e.g.: innovative methodologies of enhancing the learning process, sharing of information through peer-to-peer interaction and convenient access to instructors, recognition of degrees and awards earned.	(Almas *et al.*, 2021); (Choudhury & Pattnaik, 2020); (Muller *et al.*, 2020)
STC	*Support and training conditions* determine the quality of various types of support received by e-learning instructors as well as staff training opportunities provided by HEIs. Types of support could be technical, administrative and academic support, online program management support and the existence of a teaching assessment process. Types of staff training include e-learning course development, managing virtual classrooms, improving IT skills, conducting e-learning research and intellectual property rights trainings.	(Lee *et al.*, 2019); (Pedro & Kumar, 2020)
ID	*Instructional design* determines learning delivery, clarity of learning objectives, content quality, exploration, coordination, group tasks, e-learning and e-assessment format, identifying instructional learner out-comes, and establishing how instructional effectiveness is evaluated.	(Alhabeeb & Rowley, 2017); (Ashfaq *et al.,* 2017)
PUEU	*Perceived usefulness and ease of use* has to do with whether instructors believe that using the e-learning system will be	(Chavoshi & Hamidi, 2019);

	beneficial to users in terms of achieving e-learning's intended results, and also how convenient and straightforward the system is to use, meaning users can efficiently and timely reap the expected benefits without needing to invest excessive effort which is not proportionate to the results obtained.	(Cherry & Flora, 2017); (Choudhury & Pattnaik, 2020)
TI	*Technology infrastructure* denotes the IT systems, objectives, evaluation and personnel that contribute towards the successful technology integration of e-learning. It is concerned with subfactors like bandwidth and connectivity capacity, software and graphical user interface design, compatible technologies, quality of computers, and data protection.	(Gupta *et al.*, 2020); (Uppal *et al.*, 2018)
IC	*Instructor characteristics* denote the individual traits of the e-learning instructors such as competencies, attitude, flexibility, knowledge of learning technologies, teaching style, efficacy in student motivation.	(Alhabeeb & Rowley, 2017); (Farid *et al.,* 2018); (Kordrostami & Seitz, 2021)
SC	*Student characteristics* denote the individual traits of e-learning students such as pace of learning, commitment, attitude, motivation, knowledge of computer systems, and demographics.	(Alhabeeb & Rowley, 2017); (Thanasi-Boçe, 2021)
CC	*Course content* denotes how user-friendly, well-organized and effective the manner of organizing the learning material is on the platform. It involves developing the course material and delivering it to learners, so that they feel comfortable using it. Criteria for course content are that it is flexible, valuable, of appropriate length, interactive, properly written and efficiently accessible.	(Ahmad *et al.*, 2018); (Jeong *et al.*, 2019); (Naveed *et al.*, 2020)
ESA	*Ease of system access* determines how easy and convenient it is for users to get into to the e-learning system and find the resources they need, on multiple platforms. Standardization of its structure for portability and stability, access control and	(Ahmad *et al.*, 2018); (Barclay *et al.*, 2018); (Orozco-Messana *et al.*, 2020)

	rights, and a modular structure based on rapid consumption for various uses and settings are all subfactors.		
SF	*Social factors* include user feelings, emotions, trust in the system, goals, perceived enjoyment, expectations, values, image, status, societal pressure, virtual social environments, clear direction, social influence, reward, competition, recognition, student consensus, authority, group and peer interaction, and cultural context.	(Olasina, 2019); (Chavoshi & Hamidi, 2019)	

In the current technological and social landscape, there is a plethora of emerging themes on e-learning methods in organizations. The research focus nowadays is not so much on the basic advantages e-learning offers over traditional forms of education, but rather on a lot more complex assortment of advantages, disadvantages, barriers, CSFs, theories and models which need to be examined from the stakeholder's perspective (Choudhury and Pattnaik, 2020).

There exists a wide range of CSFs that affect e-learning performance; precisely 92 different CSFs as identified through literature review carried out by Choudhury and Pattnaik (2020). It is therefore crucial to evaluate and prioritize them in terms of e-learning stakeholders, so that HEIs can effectively invest in and govern e-learning infrastructures, as CSFs are vital to the proper implementation of e-learning (Naveed *et al.,* 2020). In the next section, the researcher examines the instructors' perceptions towards e-learning CSFs as outlined by extant literature.

2.7 Instructor perceptions towards e-learning CSFs

Consequently, as extant literature has shown that the instructors' perspective is underrepresented yet significant, the query of what CSFs e-learning instructors place importance on has been addressed by the researcher in the present section. According to Al-Samarraie *et al.* (2018), five factors; information quality, task–technology fit, system quality, utility value, and usefulness, have been found to be the key components for promoting e-learning continuance satisfaction for instructors in the context of HE. Alhabeeb and Rowley (2018) suggest that the perception of CSF of e-learning differs between e-learning instructors and students. The former tend to place more importance on student characteristics, e-learning system, and the experience of the system, whereas for students the most important three CSF's are technology infrastructure, instructor characteristics, and student characteristics in order of

importance. Given the diversity of findings from the different studies into the CSFs for e-learning, there is scope for considerable further research, to ascertain the factors that contribute to this diversity.

Instructors have also been established to hold differing viewpoints on how ICT tools can be best used and what counts as e-learning in HEIs. When asked how e-learning at a HEI may be improved, instructors point to two primary issues: encouraging the use of the Internet and learning technology to embrace more e-learning, as well as improving human-computer interaction to increase individual capabilities in teaching (Almas, Machumu and Zhu, 2021). These are deemed important as technological skills among instructors are crucial in supporting their online teaching (Atim *et al.,* 2021). Aside from technologically related factors, e-learning instructors have also highlighted such CSFs as expertise in the subject matter (Atim *et al.,* 2021), but also "*greater freedom of access, lower prices of training, the possibility of dividing the content of the e-course into modules, the flexibility of training, the ability to keep up-to-date and the ability to determine criteria for assessing knowledge*" (Zi-Yu Liu, Lomovtseva and Korobeynikova, 2020, p.4). In a study conducted by Tanis (2020), instructors regarded course objectives in the e-learning class and syllabus, as well as the usage of templates, exemplars and rubrics, as the most CSFs for their teaching. Instructors have expressed a wish for an appropriately designed class comprising of students who are comfortable using IT and are submitting work on time. The findings show that one of the most significant CSFs for instructors in online education is holding students to high standards of professional conduct, academic integrity and performance.

Alongside course flexibility having been identified as a major CSF from the instructors' perspective, autonomy and customization have also been identified to be the very important. As a result, the efficacy of learning is largely dependent on an interactive, tailored course that fosters student control, while PU and PEUO of the e-learning system are important CSFs for students. It is vital for instructors to be able to put themselves in students' shoes, however it is very challenging for the instructor to comprehend the student's perception of the e-learning system (Choudhury and Pattnaik, 2020), since their perceptions differ considerably as has been demonstrated by Alhabeeb and Rowley (2018). Other instructor-related CSFs critical to e-learning effectiveness identified by extant literature have included components such as instructional design and instructor presence (Cherry and Flora, 2017). One of the ways in which instructors can contribute towards the effectiveness of e-learning, is by being more present and

thus reinforcing students' sense of community within the VLE. Prior studies have shown students' sense of community to be of key importance in terms of engagement and satisfaction in e-learning programs (Berry, 2019).

It can be deduced, that gaining an insight into instructors' perception towards e-learning CSFs would provide a basis for management action in order to satisfy these perceptions. One of the major ways in which HEI management can contribute towards this goal, is by providing adequate training opportunities to instructors, in a cost-effective way. Cost-effectiveness would ensure the sustainability of the training framework, and that is why it should be a key consideration when designing strategy. Instructors believe the e-learning "*would be efficient, particularly with adequate training and support, though they are unable to comment on the cost effectiveness of e-learning systems*" (Farhan *et al.,* 2019, p.1). Therefore, despite the fact that instructors are able to provide insights to management as to what instructor needs are within an e-learning system, the question of how resources should be spent in the most cost-effective way, remains with management. Management can review instructor perspectives in order to improve on the implementation of e-learning for by adopting a constructivist approach towards designing e-learning by including instructors as key stakeholders in this process (Atim *et al.,* 2021).

As has been established, e-learning stakeholders have quite divergent perspectives (Alhabeeb and Rowley, 2018) in terms of ranking the importance of CSFs in e-learning. Therefore, prioritizing the CSFs (Ahmad *et al.,* 2018) from a unified and convergent stakeholder perspective is vital towards achieving a highly effective e-learning system. In order for this to be accomplished, the various stakeholder perspectives need to be addressed individually. Kumar *et al.* (2019) assert that they have surprisingly not come across many studies that examine instructor perceptions and attitudes towards e-learning. San-Martín *et al.* (2020, p.3218) support the "*idea of addressing the instructors' perspective on e-learning development, a perspective that has been neglected in previous academic research, and it has been proven to have central importance*".

Extant literature has shown a disparity between CSFs that are most prominently discussed, as compared to the relevant perceptions obtained through exploration of the instructors' perspective. More precisely, not enough studies exist that shed light on the views of instructors towards the most prominent CSFs debated in extant literature, but instead show instructors'

views towards various CSFs that are more peripheral in terms of the scientific discussion revolving around the subject. It is therefore evident, that in order to carry out a thorough analysis of the instructors' perceptions towards e-learning CSFs', their views on the most prominently discussed CSFs in extant literature, as indicated by the systematic review carried out by the researcher, should be obtained. This gives rise to the following research question:

RQ1a: How do e-learning instructors perceive and evaluate critical success factors for e-learning effectiveness?

It is argued by Naveed *et al* (2020) that after assessing the impact of each CSF, the various stakeholders such as management, students and instructors, will be able to control the negative effects or barriers of each of these e-learning factors and their dimensions in terms of proper e-learning implementation.

Next, the researcher outlines the most prominent barriers to e-learning implementation identified in extant literature which, as perceived by instructors, serve as the second set of preliminary factors within the Thesis' initial conceptual framework.

2.8 Extant literature exploring e-learning barriers to implementation

Instructors and HEIs must develop more inventive teaching approaches to support students throughout the developing crisis generated by COVID-19 due to the fast shift of e-learning. It is important to remember that HEI stakeholders are experiencing a period of large-scale e-learning, in which education is delivered via a number of digital channels on a distant basis. Students and instructors have therefore faced numerous obstacles as a result of recent advancements and demands of e-learning (Al-Karaki *et al.,* 2021) since despite the obvious advantages of e-learning, there are a number of barriers to its effective implementation and integration in HE, which are mostly faced by HEIs themselves and have continued to have a negative impact on its effective use (Barclay, Donalds and Osei-Bryson, 2018). Educators and scholars have given e-learning a lot of attention, with many praising it over conventional learning. In spite of this emphasis, e-learning system implementation typically fails, since HEIs face a complex combination of barriers that restrict the implementation and long-term effectiveness of e-learning results, even if they are embraced across the entire HE system. (Ali, Uppal and Gulliver, 2018). Extant literature explores a variety of barriers impeding the success

of e-learning implementation, with certain key barriers in HE being limited HEI resources, inadequate computer literacy of e-learning, and also several psychological factors affecting users' perceptions (Daniela *et al.,* 2018). Moreover, there is evidence of implementation failures owing to excessive technology costs, insufficient supporting processes, competition and a lack of a defined business strategy, challenges with course acceptance and uptake, and a lack of ability to adjust to the competitive HE market. Low acceptance and success rates have also been linked to insufficient instructor participation and time, higher instructor preparation time, low student comfort levels, and possibly more dissatisfaction, anxiety, and uncertainty for stakeholders (Barclay, Donalds and Osei-Bryson, 2018).

Ali *et al.* (2018) have identified four conceptual categories into which the 68 identified barriers to e-learning implementation fall: technology, individual, pedagogy and enabling conditions. They have presented their findings through a framework outlined below in Figure 2.10:
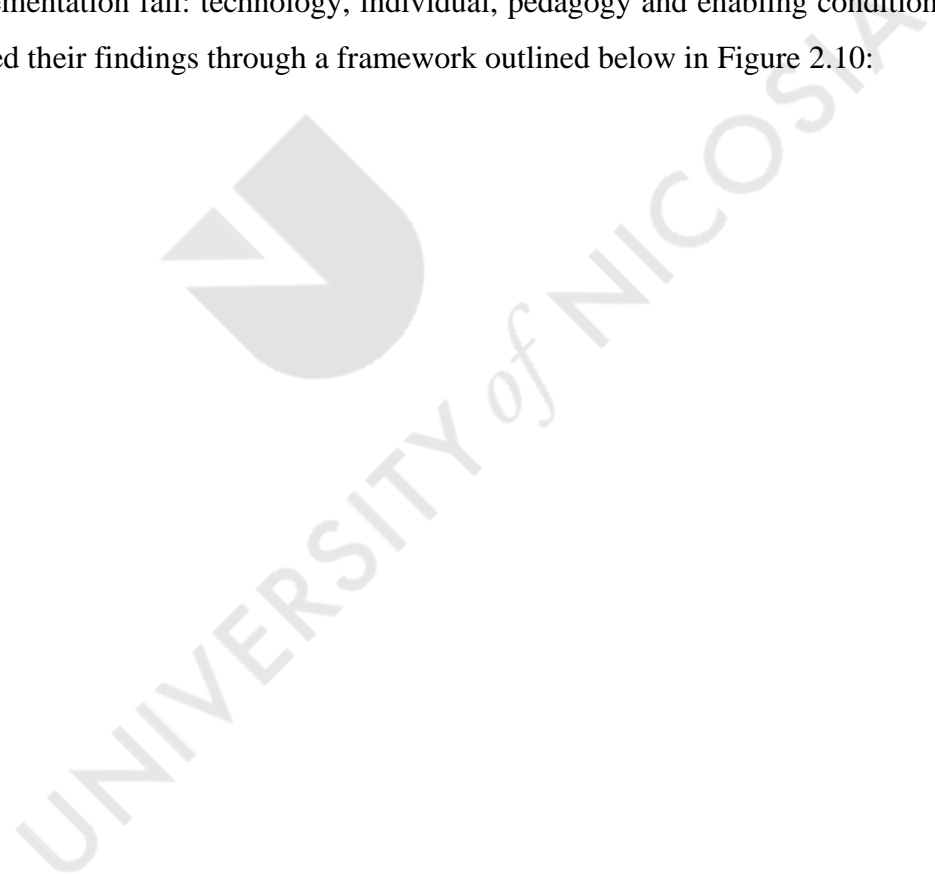
Figure 2.10: 68 barriers in TIPEC framework (Source: Ali, Uppal *et al.*, 2018)
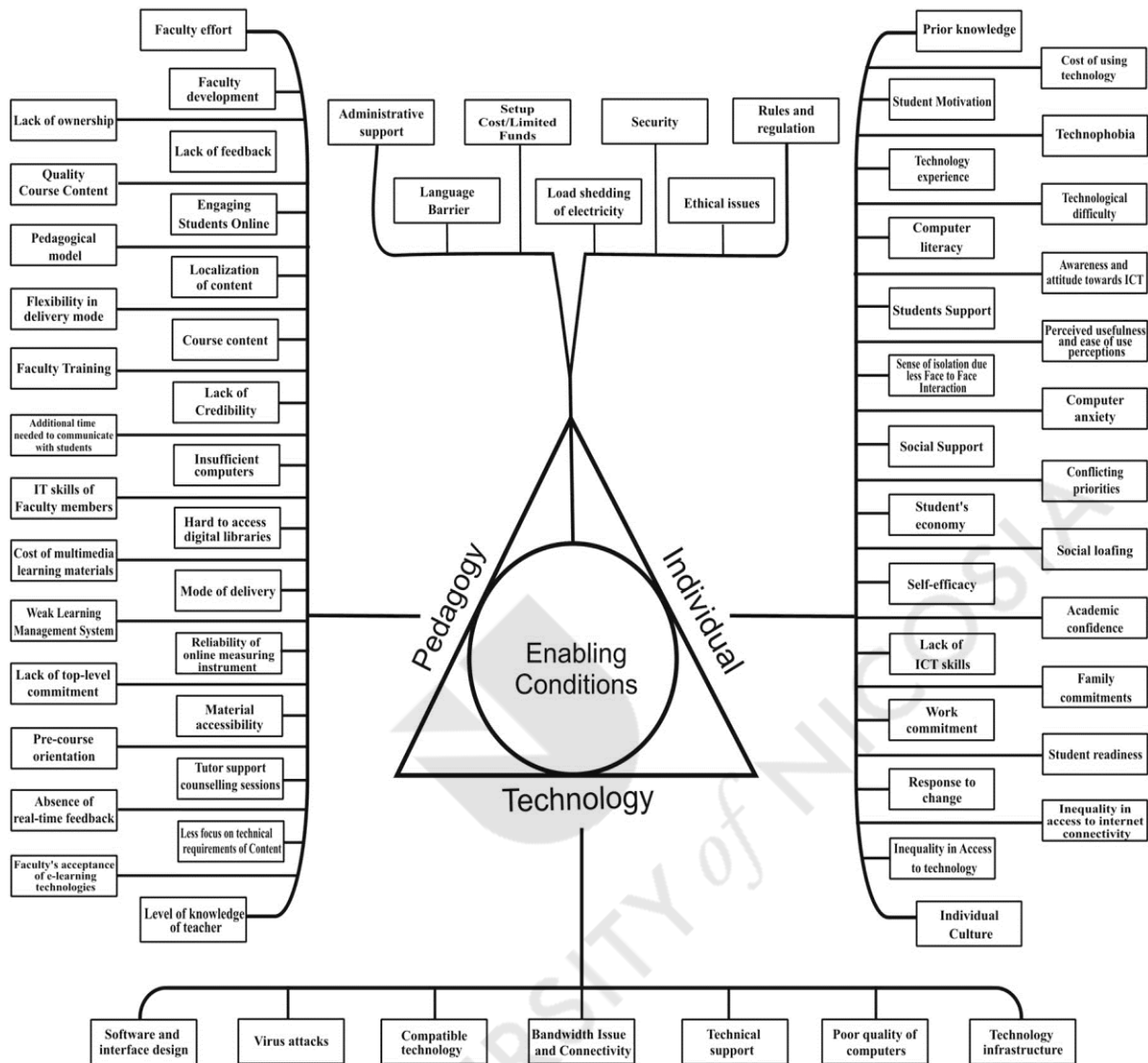
A majority of e-learning barriers pertain to technology and its use (Miranda *et al.,* 2017) with internet connectivity posing a significant obstacle in the adoption of e-learning in HEIs. (Almas, Machumu and Zhu, 2021). E-learning systems also present a number of additional barriers, the most prominent of which is a lack of student motivation to participate in various course activities and to use certain course materials (Hussain *et al.,* 2018). This could be due to the fact that e-learning course providers encounter challenges in terms of recognizing what constitutes excellent teaching practices and providing adequate student support (de Metz and Bezuidenhout, 2018), and "*given the disparity between desired and realized outcomes for online students, identifying and addressing these behavioral barriers to online academic success could provide significant benefits to students*" (Patterson, 2018, p.294). It could be

argued that the lack of motivation to use e-learning systems might be attributable to the fact that their lack of PU is considered as one of the top-most factors hindering the quality of these systems (Farid *et al.,* 2018).

Several other important barriers identified in e-learning environments include *"absence of modern educational process, lack of interactive features, personalized control for students over the learning process and lack of interaction between students and instructors"* (Farhan *et al.,* 2019, p.3). Future research orientations should therefore focus on sustainable HE not only in terms of learning outcomes, ICT use, and the building of a foundation for future innovations, but also in terms of the barriers that e-learning HE itself creates. (Daniela *et al.,* 2018). Research on barriers to distance education has proposed that cultural changes would be needed to fully implement the promise of technology-enhanced, accessible learning and thus overcoming barriers such as resistance to change is critical to the adoption of e-learning (Ives and Walsh, 2021). According to Harrison, Hutt *et al.* (2017), HEIs as a whole have a history of resisting change and promoting a "*culture of conservatism... which needs to change*" (European Commission, 2014, p.11, as cited in Harrison, Hutt *et al.*, 2017). One reason for this is because senior managers at HEIs have paid little attention to the actual or perceived impact on academic instructors' workload. As a result, it is critical to evaluate e-learning instructors' workloads and how they are being handled in the face of conflicting demands on their time, as well as ensuring that the infrastructure to support academics in this role is properly funded (Harrison *et al.,* 2017). Solving these matters requires investment, and there is a need for management action in terms of overcoming the barriers without incurring unnecessary costs which would ultimately drive up the price of e-learning. On the other hand, while achieving HE affordability is a commendable aim, the attempt to minimize student fees frequently has unforeseen repercussions (Bryan, Leeds and Wiley, 2018) such as reduced e-learning quality, so it is a task for HEI management to be able to strike the right balance.

According to Naveed and Ahmad (2019), the most significant barriers or challenges for e-learning can be identified in future studies, and likewise, the relationship between barriers and CSFs could be recognized in order to set management priorities. Aside from human and social barriers, it must be considered that financial barriers of course also play a major part in the eventual acceptance and success of an e-learning system. According to Meinert *et al.* (2019) in terms of e-learning, restricted economic analyses are currently being undertaken most likely because HEIs opt to concentrate on content delivery and educational impact rather than on

generating cost data. However, an increasing evidence base for e-learning cost data may encourage more research into different types of economic evaluations, in order to be able to demonstrate value and thus build potential business cases for future e-learning investment. Using improved cost data available from contemporary studies and by contrasting the experiences of students and educators, further analysis may try to establish perceptions of cost and benefit within a holistic framework. As outlined by Bryan *et al.* (2018), while educational affordability is a worthy objective, the aspiration to minimize student costs might create inadvertent consequences. A topic that should be at the pinnacle of the debate regarding educational affordability is whether high-quality online courses and services could be retained, while at the same time achieving more student affordability.

How e-learning barriers affect instructors

The author has embarked on evaluating the most important barriers and challenges present in the e-learning landscape from the instructors' perspective, in order to more profoundly understand the concept of e-learning acceptance from a holistic stakeholder perspective. The absence of social interaction is a major barrier to a positive e-learning experience (Graham, 2018) and consequently instructors face tensions in creating community in the e-learning classroom. Even though is advisable to use a number of tactics to encourage student interaction, such as discussion groups, peer review, and casual conversations about students' personal and professional life, instructors also have the responsibility of fulfilling the e-learning course's curriculum. Although social interactions are crucial, instructors believe it is the responsibility of students to accomplish the majority of their relationship-making outside the classroom, thus they are hesitant to devote a large amount of time to community-fostering activities (Berry, 2019). Instructors, particularly those in teaching-intensive roles, have said that involvement in extracurricular activities would be difficult for them (Berry, 2019) and that one of the largest barriers is insufficient pay for increased workload (Cherry and Flora, 2017). These notions are supported by Kordrostami and Seitz (2021) who have recognized two of the most important barriers in e-learning education as the perceived or real increase of workload involved in online teaching, as well as a lack of recognition and institutional support for e-learning instructors.

Kryshtanovych *et al.* (2020) while analyzing and condensing the outcomes of methodological and pedagogical studies on the problem of e-learning instructors' level of readiness to use e-learning, have discovered inconsistencies in the practice and theory of e-learning teaching that are created because of the inadequate level of instructors' readiness and lack of competences to

properly utilize an e-learning system. Therefore, *"for successful e-learning implementation to take place, e-learning instructors should be equipped with the necessary infrastructural support services and facilities to enhance the full utilization of their competences"* (Almas, Machumu and Zhu, 2021, p.90).

In the following section, instructors' perceptions towards the major e-learning barriers identified in extant literature are presented.

2.9 Instructor perceptions towards e-learning barriers to implementation

Kumar *et al.* (2019) state that they have:

> *Not come across many studies that examine instructors' perceptions and attitudes towards online education. Several reports over the years have shown that for the past decade instructors' perceptions towards technology and online education haven't changed much and remain negative.* (Kumar *et al.,* 2019, p.34)

This could pose a significant barrier to effective implementation of e-learning. A practical aspiration would be, for this perception to become more positive with the introduction of new literature revolving around the topics of motivation, acceptance and engagement with e-learning. Moreover, some instructors state that the transition to an online approach is fraught with barriers, and this transition impacts other educational activities. Many instructors think that e-learning courses typically lead to an increase in course size and faculty workload, which both have quality implications for course and program delivery, thus undermining instructors' objectives (Al-Karaki *et al.,* 2021). However, instructors' acceptance of e-learning is critical and therefore, in order to more thoroughly understand and accomplish successful implementation and utilization of e-learning systems, an understanding of the barriers faced by these stakeholders is required (Barclay, Donalds and Osei-Bryson, 2018).

A number of scientific publications in extant literature examining the topic of e-learning barriers to implementation, approach the issue from the instructors' point of view. One of the main barriers that e-learning instructors seem to be faced with is their own perceived lack of competency (Kordrostami and Seitz, 2021), which is related to the ability of instructors to be involved in the e-learning process via an e-learning approach (Mahande and Akram, 2021). Improved e-learning instructor competencies would enable instructors to engage with students more effectively through the VLE, and as HEIs aim to boost their support for e-learning

students, they have to strengthen instructor competences to engage outside of the conventional classroom (Berry, 2019). However, distance, time, and lack of financial support negatively affect e-learning instructors' capacity to take part in extracurricular programs. This has had as a result, that e-learning instructors perceive it a challenge to engage students via online medium such as for instance the online forums that are a part of a VLE (de Metz and Bezuidenhout, 2018). HEIs should consider these factors and implement extracurricular programs that satisfy both student and instructor demands (Berry, 2019), however limited HEI financial resources present a significant barrier towards this end (Daniela *et al.,* 2018).

It would appear as the majority of barriers instructors are faced with, stem from the fact that the process of social interaction in the VLE is not the same as interaction in a conventional classroom, and as a result of that, e-learning instructors have had to adapt their approach considerably. If the proper approach is not followed, the result is a perceived and actual lack of interaction between instructors and students in the VLE of e-learning systems. An increased strain has been placed on the social interaction, as e-learning instructors are now required not to spend a larger proportion of their time not on teaching and therefore socially interacting with students, but rather on administrative tasks that are created by the increased demands of the e-learning environment. As Graham (2018, p.17) suggests, *"research continues to reflect the position that the absence of social interaction is a major barrier to a positive on-line learning experience"*. Additionally, it seems to be the case that *"the literature indicates a lack of attention to human and social factors in the e-learning agenda"* (Olasina, 2019, p.373). As indicated in prior literature, varying levels of resistance often associated with the impact on e-learning instructors' workload have been documented, combined with the erosion of face-to-face student interaction, the need to acquire new skills and concerns about reliable technical and administrative support (Pedro and Kumar, 2020). Chery and Flora (2017) also cite the lack of personal interaction between students and instructors as an e-learning barrier, alongside increased preparation time needed by instructors, inexperience with IT and an increase in email communications with students.

Instructor acceptance to e-learning is vital, and overcoming barriers that instructors feel they are faced with, is paramount. Unfortunately, if these barriers are not overcome with the help of management, there is a negative cascading effect on students' perceptions towards the e-learning system as well. The biggest concern about providing e-learning in HEIs from the instructors' perspective has been connected to the effect on students (Harrison *et al.,* 2017). As

outlined in a study by de Metz and Bezuidenhout (2018) which explores the instructor's perceptions, a lack of preparation and engagement by the students is an essential factor that impacts on their effectiveness as an e-learning instructor, followed by factors such as misalignment of expectations and lack of communication with the HEI management as well as non-participation in decision-making (Singh and Hardaker, 2017). Instructors also seem to be "*dissatisfied with the negative effect of online teaching on student evaluations of instruction, the perception that online education does not enhance teaching effectiveness, and the increased workload associated with grading assignments and preparing for an online course*" (Cherry and Flora, 2017, p.260).

If HEI management leave instructor perceived barriers to e-learning unattended, this would bring about dissatisfaction and lack of motivation on the part of instructors to engage in and accept an e-learning system. Luongo (2018) has found that instructors appear to be facing inadequate compensation for their time, insufficient training, higher workload, uncertain promotion and tenure requirements, and inconsistency in technical and administrative support, and these barriers influence instructor satisfaction and dissatisfaction with e-learning. These have also been accentuated as a result of e-learning instructors feeling that there are unclear promotion and career development paths provided by their HEIs. Unless e-learning instructors are satisfied with the e-learning experience, they would not be able to garner the necessary level of motivation to effectively engage in and accept the e-learning process. It has been observed that the level of motivation towards participating within the e-learning framework has a direct impact on meeting the CSFs that validate stakeholder satisfaction and Meriem and Youssef (2020) have attempted to determine the factors that impact the motivation to adopt e-learning by HE instructors. They have identified factors such as institutional incentives and computer self-efficacy, the e-learning system, culture and institutional support, so these are prime areas for HEIs to invest in. Conversely, Meriem and Youssef (2020) propose that barriers such as computer anxiety, lack of experience with e-learning and the time required to prepare courses using technological tools can be overcome with appropriate instructor training and sensitization. As HEIs have faced a disruptive change to learning delivery, it is essential that they embrace the change and attempt to create benefits as a result of the new opportunities presented by the ever-evolving education landscape. However, as identified by Ives and Walsh (2021), HEI management, instructors and students all seem to be resistant to changes required to keep in line with e-learning demands and this presents yet another significant psychological barrier to effective e-learning implementation.

Through review of extant literature, the most prominent barriers to e-learning implementation that affect e-learning instructors have been identified. Since a higher level of consensus exists in terms of the most prominent barriers as compared to CSFs, the researcher did not deem it necessary to perform a systematic literature review on the thematic area of e-learning barriers, but instead consolidated the most prominent ones discussed in extant literature, as they were easily discernible. These serve as preliminary factors in the initial conceptual framework and have been explored by the researcher from the instructors' perspective and are presented in Table 2.7 below:

Table 2.7: E-learning barriers to implementation examined through the Thesis' conceptual framework (Source: Author's own)

E-learning barriers	References
1. Limited HEI financial resources	(Daniela *et al.,* 2018)
2. Lack of administrative support	(Al-Hunaiyyan *et al.*, 2017)**;** (Casanova & Price, 2018)**;** (Pedro & Kumar, 2020)
3. Lack of technical support	(Ali *et al.*, 2018)
4. Lack of student motivation, participation and engagement	(Al-Karaki *et al.,* 2021)**;** (Berry, 2019) **;** (de Metz & Bezuidenhout, 2018)
5. Lack of personal interaction between instructors and students	(Cherry & Flora, 2017)
6. Lack of instructor IT competencies	(Kordrostami & Seitz, 2021)
7. Increased workload	(Cherry & Flora, 2017)
8. Inadequate incentives, compensation and promotion opportunities	(Luongo, 2018); (Meriem & Youssef, 2020)
9. Non-inclusion in decision making	(Singh & Hardaker, 2017)
10. Resistance to change	(Ives & Walsh, 2021)

Upon identification and presentation of the most significant barriers to e-learning implementation that affect instructors, the subsequent research question sought by the present Thesis is:

RQ1b: How do e-learning instructors perceive and evaluate barriers to e-learning implementation?

According to Naveed *et al.* (2020), investigations related to the impact of dimensions and CSFs on learning and teaching are highly recommended. After assessing the impact of each CSF and barrier, the various stakeholders such as HEI management, students and instructors, will be able to control the negative effects of each of these e-learning factors and their dimensions. Taking into account instructors' perspectives is vital, since acceptance of e-learning by instructors will also lead to higher student engagement and retention in terms of e-learning courses provided by HEIs.

The process of identifying and understanding the main CSFs and barriers to e-learning implementation from the instructors' perspective, would enable HEI management to have at their disposal the fundamental information needed to attempt to address these via the utilization of cost-effective management strategies and actions. The present Thesis' author next moves onto exploring extant literature on management actions towards e-learning effectiveness and implementation, which are addressed in the subsequent section.

2.10 Extant literature exploring management actions towards e-learning effectiveness and implementation

Recent advancements in the establishment of e-learning solutions have raised beliefs about the technology's potential. In spite of this predicament, long-term acceptance, implementation and utilization of e-learning solutions have proven to be far less successful than initially anticipated (Ali, Uppal and Gulliver, 2018). This is due to a variety of factors and barriers as discussed in previous sections of this chapter, and proper management strategies to overcome these barriers would ensure e-learning CSFs are achieved. E-learning systems are still in their infancy and they require support, especially in terms of financial resources and instructor training, to move from traditional to more innovative styles of learning in education (Farhan *et al.,* 2019). It is

clear that HEI management must be able to understand, articulate, and communicate, the cost of online education, as well as the methodology for collecting cost data (Bryan, Leeds and Wiley, 2018) in order to be able to assess the costs involved in implementing an e-learning system successfully. Research shows that the HEIs generally lack a clear e-learning strategy and plans (Al-Jedaiah, 2020), however the fundamental role of e-learning management in enhancing the implementation and acceptance of e-learning is to build and manage sustainable structures that offer effective interaction between agency and structure (Singh and Hardaker, 2017). HEIs must spend more fiscal and human resources to support e-learning students, as instructors and students themselves focus on delivering and receiving the e-learning curriculum (Berry, 2019) and to this end, HEI-level task groups to assist in the design, implementation, and assessment of e-learning programs and courses are urgently required (Al-Karaki *et al.,* 2021).

According to Casanova and Price (2018), areas where HEI management should look to divert and invest resources influencing e-learning implementation and sustainability, are financial support, instructional and technical support, institutional ownership, institutional impact and stakeholders' ownership. Areas of cost effectiveness and operational efficiency (Chipere, 2017) are key to proper e-learning implementation, and the proper utilization of the e-learning system necessitates a combined effort from instructors and HEI top management who will influence and enforce its implementation (Almas, Machumu and Zhu, 2021). HEIs management must therefore ensure that instructors are closely involved in the e-learning implementation process (Mahande and Akram, 2021).

How management action towards e-learning effectiveness and implementation affects instructors

HEIs need to take steps towards improving the relationship between e-learning instructors and management (de Metz and Bezuidenhout, 2018) and as a starting point, management should evaluate instructors' prior experience in e-learning and general technology use during the hiring process for new faculty (Al-Karaki *et al.,* 2021). Pedro and Kumar (2020) present a comprehensive idea of how quality instructor support in e-learning teaching can be obtained in HE, which is critical because instructor support for e-learning teaching is a timely topic in light of COVID-19, which has forced instructors to make a sudden shift to numerous forms of remote or technologically enhanced teaching. According to Pedro and Kumar (2020, pp.57-61),

management action is mostly needed towards improving the following areas within an e-learning system:

> *technologies and technical support, online program/course effectiveness or evaluation data, guidelines/standards for online course design, administrative and academic support for online students, professional development for faculty in online course development and teaching, instructional design and technical support, online program management support, online education research support and recognition for engagement in online education.*

Additionally, it has been established by Kryshtanovych *et al.* (2020), that there is a need on the part of HEI management to acquire relevant knowledge more effectively in order to improve the level of quality and competence of instructors. Luongo (2018) suggests that management should focus on the strategy of acceptance, implementation and institutionalization of any technological innovation related to education, so as for e-learning instructors to be able to transition to the phase of adopting the new way of utilizing educational IT in different situations relevant to education if the identified prerequisites for change are present. Instructors may not be able to successfully engage in the world of e-learning if the conditions that allow such change are not present. HEI management should understand why e-learning instructors trust that the use of a specific technology may be able to contribute to their goals in terms of pedagogy and they should concentrate on cultivating HE instructors' epistemological views and perceptions of the possible contributory benefits of utilizing IT in the classroom (Chin *et al.,* 2020).

Since e-learning instructors require ongoing online skills training, mentoring, and coaching, HEIs should consider providing additional support for them by having them work with a group or team of experts such as online facilitators, developers, and instructional designers (de Metz and Bezuidenhout, 2018). Instructors should receive ongoing coaching from an experienced subject head to help them put the requirements of their profession into practice, and by setting an example of how online engagement and assistance should be accomplished, HEI management can inspire teachers to use best practices for e-learning delivery. Furthermore, a distinct request by e-learning instructors towards HEI management, has been for recurring feedback concerning aspects of their role which indicates a clear need for better communication between the instructor and management (de Metz and Bezuidenhout, 2018). Results obtained through research by Luongo (2018) recommends HEI management to encourage instructors to participate in numerous professional development opportunities offered by their institutions as

well as other organizations. Furthermore, the study's findings show that HEIs' attitudes about offering incentives for instructors who create, produce, and deliver e-learning courses might have to change. HEIs should give trainings on professional development and workshops to explain the notion of teaching in an e-learning setting to faculty, since by adopting the right approach, e-learning instructors will be able to reap the benefits from the flexibility and convenience of teaching e-learning classes (Cherry and Flora, 2017). In order to reinforce this approach, instructors should be shown examples of excellent practice from both internally and externally of the HEI by management (Farhan *et al.,* 2019).

The present Thesis explores e-learning instructors' perceptions towards management actions currently being taken by their HEIs in terms of addressing e-learning effectiveness factors and barriers to implementation, as well as what proposed management actions in this regard could help to improve instructors' perceptions towards e-learning. This gives rise to the following RQ explored in the Thesis:

RQ2: What do e-learning instructors think and feel about management actions taken towards e-learning effectiveness factors and barriers to implementation?

Next, the thoughts and feelings of e-learning instructors towards management actions are analyzed distinctively. The findings provide answers to RQ2a and RQ2b through RQ2 comprehensively. Specifically, as is indicated below, RQ2a examines e-learning instructors' thoughts and feelings about management actions taken towards achieving e-learning critical success factors and RQ2b examines what e-learning instructors think and feel about management actions taken towards overcoming e-learning barriers.

2.11 Management actions to achieve e-learning CSFs

Daniela *et al.* (2018) claim that despite the fact that stakeholders such as HEI management are aware of what results could be obtained by achieving e-learning CSFs, a high degree of effort still needs to be invested towards increasing their competence to effectively develop e-learning within the organization with a view to achieve the CSFs. According to Atim *et al.* (2021), more CSFs related to the teaching quality of e-learning should be explored and addressed by HEI management since by performing this action, they will be able to gain better insight and eliminate the pain points during the e-learning teaching process. Therefore, HEIs require

regulations and proper criteria for e-learning course design, either created internally through the establishment of an appropriate framework within the HEI or adopted through working with an external e-learning expert organization. Such frameworks include relevant guidelines and standards ensuring quality and they are not helpful only for instructors who are just moving to e-learning teaching, but also offer assistance for instructors modifying existing e-learning courses. It is important to consider the use of such e-learning frameworks, since they cover the challenging points of areas such as instructional design, which has been identified as a key e-learning CSF as per Ashfaq *et al.* (2017). As discussed in the Thesis' previous section, Pedro and Kumar (2020) have suggested key areas into which HEI management should consider investing as part of the HEI's resource planning strategy in order to meet CSFs, such as technologies and technical support, course effectiveness and evaluation data, guidelines and standards for online course design among others, and these areas could well be included within the e-learning quality framework adopted by management.

How management actions taken to achieve e-learning CSFs affect instructors

In order to be able to support the process of achieving e-learning CSFs, Al-Karaki *et al.* (2021, p.13) suggest that "*instructors must be provided with effective training on online learning tools and instructional design methodologies*" by HEI management. To achieve these aims, it is highly suggested that HEI management consider forming university-level task groups that could assist instructors with e-learning course design, implementation, and assessment of e-learning courses, as well as relevant trainings and programs (Al-Karaki *et al.,* 2021). Instructor training in the e-learning content management system in which they teach improves the direct transfer of information and skills in teaching and gives them a better idea of what their students are going through. Confidence in computer skills and pedagogical qualification are major determinants of training success – both in terms of evaluation and attainment of educational goals, as well as satisfaction and increased motivation to improve e-learning (Kirkova-Bogdanova, 2021). A better understanding of the VLE in which they teach would enable instructors to contribute significantly towards improved e-learning course design. According to Ives and Wash (2021), instructors state that increased emphasis on designing courses for effective learning leads to improving the overall quality of classroom instruction. Moreover, after completing specialized training courses and upon gaining greater e-learning skills, the appreciation for instructors' competence and impact on specialist education design, development methodologies, and online pedagogies increases in the eyes of HEI management. Training aimed at instructors is beneficial when its design is flexible, thus allowing e-learning

instructors to be able to fit it in around their busy schedules. So, training design that allows for independent asynchronous learning that also contains a limited synchronous component is the most recommended format, and in a sense, such trainings should be based on the micro-learning idea, which comprises of a variety of short videos showcasing specific skills that are directly relevant to topic objectives (Kirkova-Bogdanova, 2021). One of the main goals of these trainings needs to be users' computer self-efficacy. HEI management can attempt to ensure this by arranging training sessions aimed at familiarizing instructors with the computer tools used in the particular VLE, raising their awareness concerning the latest ICT trends and inspiring them to accept e-learning as the foremost learning process available. In line with the notion of providing proper training opportunities, in an effort to achieve e-learning CSFs, HEI management could also provide institutional monetary and non-monetary incentives for instructors to attend these training sessions.

In order for HEI management action towards achieving e-learning CSFs to be effective, investment of funds and other resources is necessary. The author of the present Thesis outlines the main areas where funds and efforts are being injected in an attempt to achieve e-learning CSFs. According to Meriem and Youssef (2020) investment by HEIs is currently mostly being made in areas like the e-learning system environment and culture presupposing a high quality and efficient system, with e-learning culture being based on collaborative learning and knowledge sharing. These management actions would improve HEIs' comprehension level of e-learning, and this comprehension has the potential to increase trust in the advantages of e-learning to both students and instructors. Improving institutional support is another e-learning CSF that requires HEI investment, and it takes the shape mainly of "*access to quality resources, technical support and the presence of quality infrastructure*" (Meriem and Youssef, 2020, p.2308). Another CSF area is "*enjoyment and self-efficacy in the use of e-learning*" (Meriem and Youssef, 2020, p.2308) as these are considered to be prerequisites for continuing to use an e-learning platform. The social norm is a dimension that determines the achievement of social CSFs to e-learning and in terms of e-learning instructors, it arises as a result of the influence from instructors' colleagues in terms of e-learning use. Technological factors include things like computer anxiety and lack of experience with e-learning, and this clearly denotes another e-learning CSF dimension that is worth considering when HEI management determines investment spending. Psychological factors include the time required to prepare courses using the technological tool as well as the level of complexity of using the system (Meriem and Youssef, 2020), and it is natural that such factors if left unattended by HEI management, will

bring about resistance to change. A significant investment is required towards this end, and as a result, institutional needs which have to do with lowering costs, should be aligned with individual instructor incentives (Annand and Jensen, 2017).

As can be deduced, there is a plethora of e-learning CSFs and management actions that could be taken, in order to try to achieve these CSFs and reinforce instructors' acceptance and use of e-learning systems. According to Naveed *et al.* (2020), it could be useful to categorize the overall dimensions and individual CSFs of the e-learning system and obtain instructors' views on these, as this categorization of factors would aid management in deciding on a strategic approach for managing financial and time resources in the creation and enhancement of an appropriate infrastructure to boost the teaching and learning processes. Furthermore, instructors' thoughts and feelings concerning the management actions already performed and to-be-performed could be obtained. This would bring about the opportunity for assessing current management actions being taken, taking corrective actions to prevent and remove unnecessary management investment that does not contribute towards achieving any of the e-learning CSFs, as well as proposing future management actions that would assist towards achieving e-learning CSFs from the instructors' perspective. This creates the need for the subsequent RQ of the Thesis:

RQ2a: What do e-learning instructors think and feel about management actions taken towards achieving e-learning critical success factors?

2.12 Management actions to overcome e-learning barriers

While e-learning offers numerous advantages and benefits to stakeholders, these must be evaluated against the barriers, difficulties, and challenges encountered in diverse contexts throughout its implementation and management (Barclay, Donalds and Osei-Bryson, 2018). The successful adoption of such a process would entail involvement of all key stakeholders in HEIs. Instructors, however, disagree with HEI management in charge of e-learning who state that there is widespread collaboration, and that feedback is solicited during the creation of an e-learning strategy to address these issues. According to existing research that explores instructor perspectives, HEI management is establishing e-learning initiatives with only marginal input from other stakeholders. As a result, the findings imply that instructors believe they are being excluded from crucial decision-making concerning the implementation and

acceptance of e-learning in their institutions (Singh and Hardaker, 2017). However, consultation and engagement of instructors would help address resistance and confusion (Ives and Walsh, 2021) especially since prior research highlights gaps in e-tutors' competencies as compared to the tasks they are supposed to fulfill (de Metz and Bezuidenhout, 2018). Involving instructors in the decision-making process concerning e-learning effectiveness and implementation is therefore paramount, in order to ensure that the gap between instructor competencies and the tasks they are supposed to fulfill is narrowed. However, instructors have been found to point out that the perceived absence of institutional support in reinforcing this process of inclusion is a significant barrier (Annand and Jensen, 2017).

It would be useful for HEI management to include e-learning instructors in the decision-making process since this way they can take into account the barriers instructors seem to face most commonly and take appropriate management action towards addressing them. According to research focusing on the e-learning instructors' perspective by Daniela *et al.* (2018), it has been found that they are unaware of what means they could utilize to better their teaching delivery and have stated that they do not have time to explore ways to do so in class; they are moreover unsure of how to approach this, and there is no effective institutional support to assist them in this regard. Furthermore, when it comes to transitioning to online teaching, instructors seem to lack the necessary technical and pedagogical skills required to cope with the radical change in the e-learning environment. There is also a noted lack in proper incentives and resources to compensate instructors for the extra time invested in designing and delivering e-learning courses, and also a lack of additional support necessary for the proper academic and administrative processes to be followed (Pedro and Kumar, 2020). From prior academic research focusing on direct contact with e-learning instructors to obtain their views, it may be argued that this is, at least to some extent, because of "*the lack of teacher training, lack of technical support, lack of specific tools and lack of institutional support policies*" (Vaza *et al.,* 2020, p.3). Prior literature additionally suggests that these barriers are further accentuated by the increased workload instructors face in the new e-learning landscape (Al-Karaki *et al.,* 2021). Therefore, it would appear that instructor support is critical for e-learning education to be able flourish at a HEI, particularly when considering support for instructors who have little or no prior experience in e-learning teaching. (Pedro and Kumar, 2020).

Aside from being expected to obtain the necessary competencies to teach in a completely new paradigm of e-learning, instructors are still expected to not divert their attention from the main

pedagogical issues involved in the learning process; mainly course content delivery and student engagement. In terms of ensuring proper student engagement however, instructors have cited barriers such as "*time, distance, and lack of financial support that all impair e-learning instructors' ability to participate in extracurricular programs*" (Berry, 2019, p.189). It therefore seems apparent that management can address barriers to e-learning by providing instructors with proper training, compensation and realistic workload requirements. Instructors must be compensated for their training time and only a reduction in teaching load, accompanied by appropriate other incentives, can guarantee quality instruction in larger e-learning classes (Al-Karaki *et al.,* 2021). Consultation with instructors based on student feedback and their experiences (Serrano *et al.,* 2019) is vital and the process could be improved by having dedicated staff working as academic developer-mediator (van de Heyde and Siebrits, 2019). This process should be further reinforced by providing appropriately structured financial incentives to e-learning instructors (Annand and Jensen, 2017) which must be incorporated into the strategic policy for resource management adopted by each HEI (Naveed *et al.,* 2020).

Since HEI management is shown to play an instrumental role in assisting e-learning instructors in overcoming the barriers to e-learning that they face, the subsequent RQ of the present Thesis is as follows:

RQ2b: What do e-learning instructors think and feel about management actions taken towards overcoming e-learning barriers?

The barriers to e-learning implementation and management that have been identified highlight the need to create solutions that are tailored to specific settings, particularly within HEIs that are less advantaged in terms of geographical location or financial resources. It is believed that enhanced understanding of barriers reduction may lead to more appropriate pedagogy approach, curriculum content and HEI policies, all resulting in increased instructor acceptance of e-learning (Barclay, Donalds and Osei-Bryson, 2018).

2.13 Exploring extant literature on instructors' acceptance of e-learning

A major step towards the effective implementation of a new system or technology, is its acceptance (Davis, 1989) and e-learning acceptance or rejection varies greatly from one type of HEI to the next and from one academic field to another (Meriem and Youssef, 2020).

Instructor acceptance and support for e-learning systems is a timely topic in light of COVID-19, which has forced faculty to make a quick shift to different types of online or remote instruction. (Pedro and Kumar, 2020). To cause a shift in researchers' knowledge of the e-learning complexity involved, the idea of e-learning acceptance being utilized as a transformative culture is required (Olasina, 2019) and as a result, important factors influencing instructor acceptance of e-learning may be investigated more thoroughly by assessing their impact on e-learning acceptance (Chavoshi and Hamidi, 2019).

Instructors' role in e-learning education has already been shown to be very important, since they are one of the key stakeholder groups that influence the outcome of e-learning. Therefore, their acceptance of the e-learning system and process is vital to ensure positive outcomes. Provision of resources towards instructors and proper management action are argued to be important factors for acceptance of e-learning technologies (Hanif, Jamal and Ahmed, 2018). "*E-learning systems typically represent a major infrastructure investment for HEIs*" (Stoffregen, Pawlowski, and Pirkkalainen, 2015, as cited in Barclay, Donaldson *et al.*, 2018, p.583)*,* and "*this significant investment has made user acceptance an increasingly critical issue for technology implementation and management*" (Ong, Lai, and Wang, 2004 as cited in Barclay, Donaldson *et al.* 2018, p.583) since without stakeholder acceptance, proper implementation and achievement of CSFs would not be possible. Instructors must be satisfied with what they have achieved during the e-learning process (Mahande and Akram, 2021) however research results indicate that e-learning instructors devote the majority of their time towards accomplishing informative and administrative tasks (de Metz and Bezuidenhout, 2018) rather than actually focusing on the teaching process. Due to this and according to current estimates, even though one-third to one-quarter of all academic HE faculty are involved in some sort of e-learning instruction., the level of skepticism and doubt concerning the merit of e-learning remains high (Luongo, 2018). This indicates that HEI management still need to place significant effort towards instructors' acceptance of e-learning. If instructors believe that e-learning education is a useful tool, they will actively encourage students to utilize it (Farhan *et al.,* 2019) and this will definitely have a positive impact on e-learning students. Kordrostami and Seitz (2021) argue that instructors have a significant role in increasing students' affective engagement with their peers and with the instructor in an e-learning class, and deeper knowledge of the acceptance and implementation of instructors' assigned duties should help HEIs make students feel more at ease in the e-learning environment and increase student participation. The ultimate purpose of HEIs, namely increased student intake and course

success, should profit from such knowledge (de Metz and Bezuidenhout, 2018) and it is e-learning instructors themselves that emphasize that there is a strong link between instructor acceptance and course success (Al-Karaki *et al.,* 2021). Student engagement is a complicated issue that is influenced by a variety of factors, including the instructors' expertise and approach to teaching (Hussain *et al.,* 2018) and interactions with instructors show the behavioral engagement in which the student communicates effectively with the instructor, are more conducive towards the creation of a successful e-learning process (Lee, Song and Hong, 2019).

Therefore, in order to improve the likelihood of increasing acceptance amongst e-learning stakeholders, student-instructor interaction is a very important component that must be acknowledged. The classic concept of "interaction" in e-learning courses can be resolved into a set of concepts following a particular instructional structure that itself is embedded in a social/institutional context that explains the relationships among them. The researcher has examined the context of interaction in distance education, which mainly consists of institutional and departmental policies, technologies employed, the teacher, number of students enrolled in a program and course content (Vrasidas and Glass, 2002). In order to conform to today's ever-evolving needs of learners and further explore the concept of how to improve the vital component of interaction, we need to consider not only rapid developments in technology, but also socio-cultural factors. The needs of learners are evolving, since nowadays it is much easier to gain access to multiple sources of information instantaneously, therefore the whole teaching paradigm is experiencing a shift (Christou, Ktoridou and Zafar, 2016). These ideas are further supported by Nortvig *et al.* (2018) who show that among the many factors determining the quality of online education, some seem more salient than others, mainly educator presence in online settings and interactions between students, teachers and content. The researcher notes that in order to ensure effective interaction between learners and educators, there must be adequate levels of motivation to communicate effectively throughout the delivery process, displayed on both sides. This is significant because online interaction between students and teachers is one of the main ways through which CSFs are expressed within e-learning. It is therefore imperative that instructors' perceptions be positive in order for this two-way communication process to be successful. In a study carried out by Nieuwoudt (2020) it is stated that online interaction and online learner participation have been measured mostly in terms of quantity rather than the quality of the interaction. Future studies can explore the quality of interactions and bring further understanding of how, when, and why students interact in an online learning environment.

One of the major models used to analyze e-learning user acceptance is the Technology Acceptance Model (TAM). "*The TAM is a major research theory that explains user acceptance of information systems (IS) through a series of causal relationships, i.e., antecedents–beliefs–attitude–behavioral intention–actual behavior, within an organizational context*" (Venkatesh and Davis, 2000, as cited in Chin, Puong *et al.* 2020, p.138). Reviews of extant TAM literature are useful in relation to developing a more thorough justification of HEI instructors' acceptance of e-learning systems (Chin *et al.,* 2020) since TAM has been extensively used to test the acceptance of e-learning and to explain the concept of technology acceptance in general through extensive empirical research (Farhan *et al.,* 2019). The central variables of the TAM are PEU and PU and these are applied to examine the effect of new IT on users, which, in combination with the attitude that drives behavioral intention toward technology, determines the actual acceptance and use of IT. (Davis, 1989). The original TAM is displayed in Figure 2.11 below.

Figure 2.11: The original Technology Acceptance Model TAM (Source: Davis, 1989)
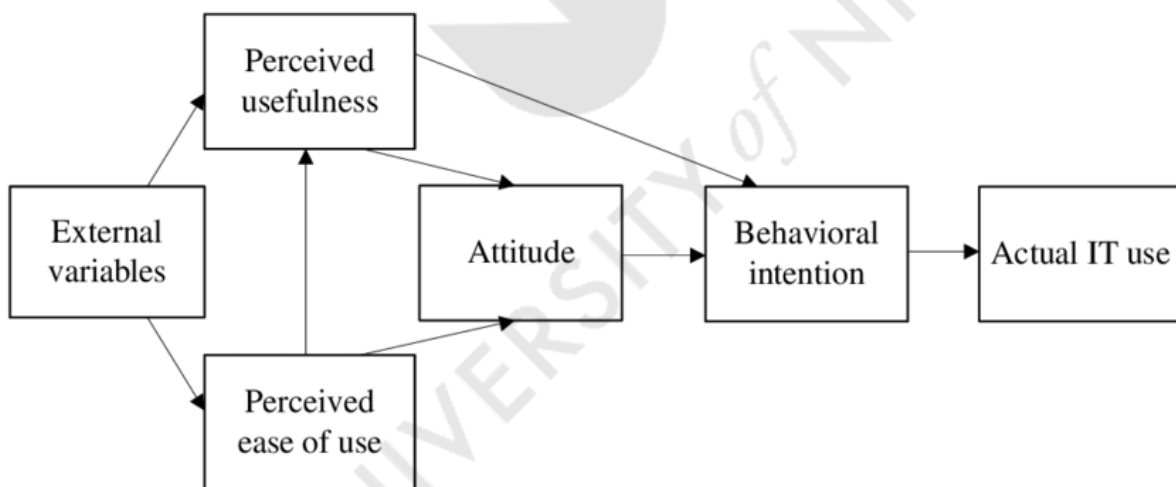
The TAM refers to PU and PEOU as significant factors that affect the use of IT systems (Davis, 1989, as cited in Vululleh, 2018, p.142). TAM has been commonly utilized in studies on technology acceptance. According to TAM research, e-learning has been shown to provide a platform for flexible learning, as it supports students' learning styles, by encouraging acceptance of new technology. (Vululleh, 2018). Furthermore, subsequent studies have revealed that PEUO and PU of online technology are shown to be related directly to e-learning technology acceptance (Cherry and Flora, 2017). The TAM has been used as a framework in

various instances in subsequent scientific literature in order to measure technology acceptance of e-learning stakeholders by also introducing additional variables.

Using the TAM, Chavoshi and Hamidi (2019) have investigated the role of social, individual, technological, and pedagogical factors impacting e-learning acceptance in HE. As far as pedagogical factors are concerned, results show that e-learning system users view course content to be more beneficial if they believe it is up to date, sufficient, and complete, and the presentation format is correctly suited. Students have expressed a desire to be able to communicate with their instructors more effectively and quickly using e-learning platforms, as well as receive personalized feedback on their projects, assignments, and test results. Concerning technological variables, the findings show that a decent user interface leads to less complex use, and thus less effort is required to access various parts of the VLE. As a result, if the learning environment, menus, navigation, page and text design are more user-friendly, users will find the system more convenient to use. In terms of social factors, the PU and PEOU can be influenced politically, socially and culturally. If an instructor uses PCs, cellphones, tablets, and laptops adeptly for specialized jobs in addition to everyday duties, they may be considered a professional with a high social standing. As a result, this social image that is generated for instructors is valued, resulting in an increase in BI. In terms of individual factors, it may be simple to utilize technology for an instructor in some circumstances, but it is not advantageous to them. Individuals' prospective features can be used by e-learning system makers from the beginning and early phases of e-learning technology implementation to encourage more instructors to accept and use these systems.

Choudhury and Pattnaik (2020) through their research on emerging themes in e-learning, examine stakeholder perspectives as well as TAM. They conclude that technology implementation and acceptance come with their barriers and the chief one involved in building an e-learning HEI relates to the necessity for a continued effort. It is fairly straightforward to entice instructors with new concepts, but tougher to encourage them to accept and implement the ideas on a regular basis by engaging in sustainable use of the system. Instructors therefore need to be motivated and ready to accept a new e-learning system, through "*strategically aligned course content and organizational policies that work together in leveraging the existing talent to achieve organizational goals*" (Capece and Campisi, 2013, as cited in Choudhury and Pattnaik, 2020, p.6). in the new digital landscape. It has been deduced that "*course customization and flexibility are identified to be the major advantages, autonomy and*

customization are identified to be the most critical success factors" (Choudhury and Pattnaik, 2020, p.8) to enable such institutional change that leads to acceptance of new e-learning technologies.

In terms of reinforcing instructors' acceptance of an e-learning system, integrating the emotional components of motivational factors to better understand intentions of academic staff to use e-learning (Chin *et al.,* 2020) is a practice that should be prioritized by HEI management. Social factors governed by stakeholder motivation affect the eventual acceptance of e-learning from a unified stakeholder view, which leads to successful implementation of e-learning. Human and social factors in online education, as identified by Chavoshi and Hamidi (2019), are determinants that need to be addressed in terms of encouraging acceptance of e-learning. To this end, Chin *et al.* (2020) based on the TAM, have developed the E-Learning Systems Research Model. The study analyzes causal mediating effects to offer a more thorough understanding of what drives BI among university teachers and the supported hypotheses that were developed augment the technology acceptance literature by including the concept of motivation for instrumental use by instructors and identifying its dual roles, as both cause and mediator for e-learning acceptance. Users that are motivated are more likely to engage with the technology they have chosen to meet their needs. In HE, incentive for instrumental use is a key factor in persuading university instructors to adopt and employ technology. Based on previous research, it can be deduced that HE e-learning instructors with instrumental motivations are more likely to regard a technology as valuable and simple to use. (Chin *et al.,* 2020). According to further studies on the topic, instructors would be motivated to use e-learning systems regardless of e-learning barriers if they were used to encourage constant interaction, promote resource sharing, and deliver assessments and suitable feedback to users within the HEI, regardless of where they are situated. (Almas, Machumu and Zhu, 2021).

It is therefore indicative that since instructors are intrinsically motivated, if they perceive that there is worthy effort on the part of HEI management to meet e-learning CSFs and overcome barriers, this will likely increase their propensity to accept e-learning. Studies by Chin *et al.* (2020) recommend that by incorporating the emotional or affective elements of motivation factors into the TAM, researchers would obtain a better understand instructor acceptance, and in this vein, Kordrostami and Seitz (2021) suggest that investigations into whether any additional elements might be present in an expanded TAM are worthwhile. Based on these findings in extant literature, the author of the present Thesis explores how supportive

management action to address achievement of e-learning CSFs and overcome barriers to their implementation could contribute toward positive behavioral intention, and therefore acceptance and actual sustainable use of the e-learning system as illustrated in Figure 2.12.

Figure 2.12: Technology Acceptance Model TAM adapted (Source: Davis, 1989, Author's Own)
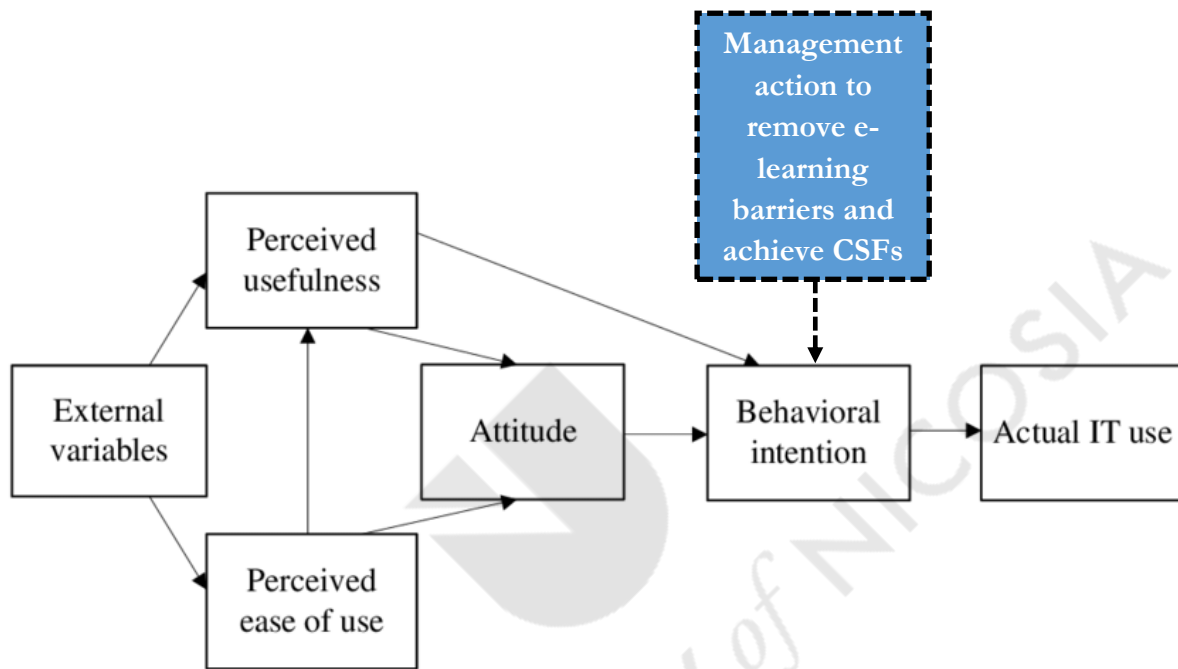
HEI management should really consider investing in achieving e-learning CSFs as well as overcoming barriers, since this creates a setting where instructors are likely to be more motivated towards the idea of accepting e-learning. Increased instructor acceptance would enable instructors to be more effective in their primary role, namely ensuring student engagement and positive learning outcomes. To be highly successful, an e-learning instructor should be organized, energetic, and communicative with students, as well as maintain a continuous presence in the e-learning classroom in order to deliver an active, high-quality learning experience through student, instructor and content engagement (Tanis, 2020). This finding in prior literature implicates instructors to focus on stimulating qualitative interactions with students and find effective alternatives to support them. Instructor presence in e-learning contexts, interactions between students, instructors, and content, and intentional links between online and offline events, and also among campus-related and practice-related activities point in the direction of some significant factors towards successful e-learning outcomes (Nortvig, Petersen and Balle, 2018). The level of interaction should be considered a facilitator of how

instructors motivate their students and this consequently requires modifying the e-learning instructor's academic role from a knowledge conveyer to a learning motivator (Thanasi-Boçe, 2021) thus enriching the scope of their work with the hope of providing them with a higher degree of job satisfaction. To this end, it has been further shown by Cherry and Flora (2017) that instructor satisfaction with e-learning course interaction increases moderately as the number of years teaching e-learning courses increases. It should be noted that, the number of years teaching e-learning courses is not actually directly linked to the level of instructor satisfaction with delivering e-learning courses or with how they perceive institutional support (Cherry and Flora, 2017).

Satisfied e-learning instructors would contribute positively towards the achievement of e-learning's goals and for this reason HEI management should pay attention to ways through which to sufficiently motivate instructors. Therefore, understanding how e-learning technology acceptance functions is very important. Previous research has found a moderately positive relationship between e-learning technology acceptance and PEU, as well as a strong positive relationship between PU of e-learning technology. Furthermore, technological self-efficacy is strongly linked to the utilization of a wider variety of technology-enhanced learning approaches (Cherry and Flora, 2017). E-learning instructors have indicated that the most important factor influencing both organizational impact and, to a lesser extent, continuous commitment and therefore acceptance, is system quality (San-Martín *et al.,* 2020). Additionally, flexibility has been cited by e-learning instructors as the utmost motivational factor to make them accept delivering e-learning courses. Other such factors cited by e-learning instructors are things like the opportunities to learn new technologies and the availability of increased access for students all across the world (Cherry and Flora, 2017).

Findings by Almas *et al.* (2021) suggest that instructors are more innately driven to use e-learning, with their conviction in the robustness of an e-learning system and individual interest being the key factors contributing to their motivation. As it is clear that instructors' motivation and acceptance to use e-learning is largely perception-based, investment in improving human and social behavior to impact intention can drive up instructors' acceptance of e-learning concurrently with the changes in the human and social landscape (Olasina, 2019). This supports the notion that if instructors perceive and believe that HEI management takes appropriate actions to achieve e-learning's CSFs and overcome associated barriers, thus making

instructors' job easier and more fulfilling, it would be more likely that they accept e-learning. This gives rise to the third and final RQ of the present Thesis, namely:

RQ3: How do management actions taken to achieve e-learning effectiveness factors and to overcome barriers to implementation, influence instructors' acceptance of e-learning?

Table 2.8 summarizes the Thesis' preliminary factors, originating from the literature, and includes the applicable references and the research questions that examine them.

<div align="center">

Table 2.8: Thesis' preliminary factors (Source: Author's own)

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Preliminary factors	References	Research Questions
A. E-learning effectiveness/CSFs	(Graham, 2018); (Miranda *et al.*, 2017); (Naveed & Ahmad, 2019); (Naveed *et al.,* 2020); (Van Wart *et al.*, 2020)	**RQ1a**
1. Learning quality and environment (LQE)	(Almas *et al.*, 2021); (Choudhury & Pattnaik, 2020); (Muller *et al.,* 2020)	**RQ1a**
2. Support and training conditions (STC)	(Lee *et al.*, 2019); (Pedro & Kumar, 2020)	**RQ1a**
3. Instructional design (ID)	(Alhabeeb & Rowley, 2017); (Ashfaq *et al.,* 2017)	**RQ1a**
4. Perceived usefulness and ease of use (PUEU)	(Chavoshi & Hamidi, 2019); (Cherry & Flora, 2017); (Choudhury & Pattnaik, 2020)	**RQ1a**
5. Technology infrastructure (TI)	(Gupta *et al.*, 2020); (Uppal *et al.*, 2018)	**RQ1a**
6. Instructor characteristics (IC)	(Alhabeeb & Rowley, 2017); (Farid *et al.,* 2018); (Kordrostami & Seitz, 2021)	**RQ1a**
7. Student characteristics (SC)	(Alhabeeb & Rowley, 2017); (Thanasi-Boçe, 2021)	**RQ1a**
8. Course content (CC)	(Ahmad *et al.,* 2018); (Jeong *et al.*, 2019); (Naveed *et al.,* 2020)	**RQ1a**

9. Ease of system access (ESA)	(Ahmad *et al.,* 2018); (Barclay *et al.*, 2018); (Orozco-Messana *et al.*, 2020)	**RQ1a**
10. Social factors (SF)	(Olasina, 2019); (Chavoshi & Hamidi, 2019)	**RQ1a**
B. Barriers to e-learning implementation	(Ahmad *et al.,* 2018); (Ali *et al.*, 2018); (Almas *et al.*, 2021); (Msomi & Hoque, 2018)	**RQ1b**
1. Limited HEI financial resources	(Daniela *et al.,* 2018)	**RQ1b**
2. Lack of administrative support	(Al-Hunaiyyan *et al.*, 2017); (Casanova & Price, 2018); (Pedro & Kumar, 2020)	**RQ1b**
3. Lack of technical support	(Ali *et al.*, 2018)	**RQ1b**
4. Lack of student motivation, participation and engagement	(Al-Karaki *et al.,* 2021); (Berry, 2019); (de Metz & Bezuidenhout, 2018)	**RQ1b**
5. Lack of personal interaction between instructors and students	(Cherry & Flora, 2017)	**RQ1b**
6. Lack of instructor IT competencies	(Kordrostami & Seitz, 2021)	**RQ1b**
7. Increased workload	(Cherry & Flora, 2017)	**RQ1b**
8. Inadequate incentives, compensation and promotion opportunities	(Luongo, 2018); (Meriem & Youssef, 2020)	**RQ1b**
9. Non-inclusion in decision making	(Singh & Hardaker, 2017)	**RQ1b**
10. Resistance to change	(Ives & Walsh, 2021)	**RQ1b**
C. Management actions towards CSFs and barriers	(Al-Jedaiah, 2020); (Al-Karaki *et al.,* 2021); (Bryan *et al.*, 2018); (Singh & Hardaker, 2017)	**RQ2**

D. Instructor acceptance of e-learning	(Barclay *et al.*, 2018); (Chavoshi & Hamidi, 2019); (Choudhury & Pattnaik, 2020)	RQ3

2.14 The potential impact of the COVID-19 pandemic period on instructor acceptance of e-learning

Due to the sudden need for a shift in approach to e-learning imposed by the pandemic, the extant literature post 2020 evolved and focused to a higher degree on the implications of the COVID-19 pandemic on management actions to address CSFs and barriers, as well as the resultant effects on instructor acceptance. Abrupt changes in daily life and work routine of people can inevitably impact physical and mental wellbeing (Tsangari *et al.,* 2022). Therefore, one of the most significant success factors influencing e-learning success and effectiveness during the COVID-19 pandemic according to Alqahtani and Rajkhan (2020) became support from management, and an increased teacher and student awareness of utilizing e-learning systems. Receiving the appropriate institutional support would also assist teachers in adjusting the proper level of difficulty and format of the curriculum which could be argued to drive up student acceptance of e-learning (Muljana and Luo, 2019). Alqahtani and Raijkan (2020) indicate that adequate management support has been one of the most influential factors for e-learning during COVID-19. This has been effectively reflected in the current Thesis, as support from management is one of the main thematic areas that originated within the Thesis.

Relevant literature post-pandemic indicated that certain areas had garnered more importance in terms of where management actions should focus. It has been demonstrated that institutional management service has been of utmost importance during the COVID-19 pandemic. More precisely, Pedro and Kumar (2020) present a comprehensive idea of how quality teacher support in e-learning teaching can be achieved in HE, mainly by pinpointing individual teacher needs, which is critical because teacher support for online teaching is a timely topic in light of COVID-19, which has forced teachers to make a sudden shift to numerous types of remote or technologically enhanced teaching formats.

In further efforts to support instructors' acceptance of e-learning, HEI management can arrange training sessions aimed at familiarizing teachers with the computer tools used in the particular virtual learning environment, raising their awareness concerning the latest information and communication technology trends, and inspiring them to accept e-learning as one of the

foremost learning processes available in light of the rapid advances in technology, and the COVID-19 pandemic (Thanasi-Boçe, 2021).

Investing in learning quality and environment has remained an important component for management action. Atim *et al.* (2021) state that more success factors related to the teaching quality of e-learning should be explored and addressed by HEI management to gain better insight and eliminate the pain points during the online teaching process in an emergency e-learning environment necessitated by conditions such as the pandemic. Investing in good instructional design has also remained a significant criterion, since HEIs require regulations and proper criteria for e-learning course design, in a post-COVID environment. Such frameworks include relevant guidelines and standards ensuring quality, and they are not helpful only to teachers who are just moving to e-learning but also offer assistance for teachers modifying existing e-learning courses. It is important to consider the use of such e-learning frameworks since they cover the challenging points of areas such as instructional design, which has been identified as a key e-learning success factor especially when sudden shifts to the teaching methods are necessary(Al-Karaki *et al.*, 2021).

Improving institutional support is therefore a significant e-learning success factor that requires HEI investment, and it takes the shape mainly of technical assistance, availability of quality infrastructure, and access to high-quality resources to support the feelings of enjoyment and self-efficacy in the use of e-learning on the part of teachers (Meriem and Youssef, 2020), and this is of great importance especially while reflecting on the implications that the COVID-19 pandemic has had on the provision of higher education. The pandemic period has revealed that HEIs should make educated, evidence-based decisions regarding faculty mental health in order to ensure their wellbeing and safeguard against potential future barriers that might be caused by similar crises (Tsangari *et al.,* 2023).

2.15 Research gap identification

Examination of e-learning stakeholders' perspectives towards effectiveness, implementation and acceptance of e-learning remains an extremely relevant academic topic in contemporary times due to the fact that HEIs are forced to change their operational learning delivery models in order to stay in line with current technological and social developments. Future research should investigate the requirements to build an efficient and effective e-learning system that can preserve the integrity of teaching quality, student engagement and involvement. Farhan *et*

al. (2019) call upon future studies towards the creation of a more effective e-learning environment by using interdisciplinary approaches to improve current e-learning systems by investing in new designs, platforms and interactive features in order to reinforce teaching quality and to address key CSFs. To enhance the teaching quality, research should be conducted on how e-learning instructors may be able to restructure their strategies to broaden their perspectives and connection with students. Future studies may also investigate more factors related to the teaching quality of online learning and such studies would be able to provide more insight and reduce barriers during the e-learning teaching process (Atim *et al.,* 2021). According to Gupta *et al.* (2020), while HEIs have understood the significance of CSFs such as expected instructors' competence, this has not been fully aligned with students' and industry expectations from academia and further research into the topic can help bridge the gap and bring about a more complete digital transformation for HEIs. Future studies that explore the perspectives of instructors could ensure the needs of students and instructors are considered as education progressively becomes more online-based, and consequently there is a need for further exploratory research on HEIs leadership initiatives, management actions and processes required to support these disruptive academic changes in the HE industry (Ives and Walsh, 2021).

Extant research has shown that the key stakeholders of e-learning such as students, instructors, management and experts, have divergent perspectives in terms of what CSFs are needed to achieve e-learning effectiveness, and what barriers they themselves face as distinct stakeholder groups. This predicament, in turn, affects what supportive management actions should be taken to ensure that the various stakeholder groups such as students and instructors accept e-learning systems that are being implemented by HEIs. Review of extant literature has shown that there is a lack of scientific effort in examining the reasons for the diversity in perceptions of e-learning stakeholders (Alhabeeb and Rowley, 2018), as well as a lack of literature that focuses on sufficiently prioritizing e-learning CSFs while also understanding the various stakeholder perceptions. Farid *et al.* (2018) further argue that extant research on the effectiveness and quality of e-learning could be greatly enhanced by categorizing the potential CSFs with respect to the stakeholders' role in the e-learning system (Farid *et al.,* 2018). The majority of the studies exploring e-learning effectiveness and implementation, focus on examining the perspectives of students, while Kumar *et al.* (2019) also state that they have not come across many studies examining instructors' perceptions. However, even though students are intuitively the key e-learning stakeholder considered in extant research, examination of instructors' perceptions is

also crucial since this would give more insight into how their acceptance of e-learning could be reinforced (Barclay, Donalds and Osei-Bryson, 2018). Obtaining a deeper understanding of the e-learning instructors' perspective would contribute towards achieving their motivation and acceptance, and this would have a positive knock-on effect on the e-learning students' experiences as well. Instructors play a key role in increasing student engagement in e-learning courses, and motivated instructors would definitely achieve this purpose better. Students' behavioral engagement with e-learning is greatly strengthened through an effective relationship and communication with the instructor, and this is more conducive towards the creation of a successful e-learning process whose benefits instructors perceive and therefore accept (Lee, Song and Hong, 2019). Alhabeeb and Rowley (2018) state that given the diversity of findings from extant studies into the CSFs for e-learning effectiveness from students' and instructors' perspectives, there is scope for considerable further research, to ascertain the factors that contribute to this diversity.

There are even less studies exploring expert and HEI management views and gathering the perceptions of e-learning experts in a wide range of universities with recent experience in e-learning implementation would benefit the prioritization of CSFs (Alhabeeb and Rowley, 2017). Aside from this gap in extant literature, Singh and Hardaker (2017) have also identified that whilst management is generally developing strategies concerning effective e-learning implementation, the practice occurs with only notional contributions from instructors, so this clearly calls for further stakeholder involvement in the process of CSFs prioritization. These findings indicate that further research is needed towards the exploration of CSFs from the perspective of instructors to further explore their perceptions and the reasoning behind why they place value on specific CSF dimensions. Exploratory qualitative research in the form of in-depth interviews could shed more light on the subject, thus enabling more meaningful prioritization and convergence of e-learning CSFs from the instructors' perspective. Furthermore, qualitative research has the potential to generate a more profound understanding of the e-learning experience (Alhabeeb and Rowley, 2018). This notion is supported by Cherry and Flora (2017), according to whom, with the use of focus groups or interviews, further qualitative research might be undertaken to obtain extra information from e-learning instructors, allowing for further investigation into variables that serve to increase online course effectiveness.

To be able to reap the benefits of an effective e-learning system that satisfies the stated CSFs, HEIs need to ensure that the system is properly implemented within the organization. According to Ali *et al.* (2018) however, there exists a contradiction between increasing public demand, but failed e-learning implementation by HEIs and acceptance by instructors. This "*has resulted in researchers and practitioners focusing on e-learning implementation failure barriers*" (Lee *et al.*, 2009, as cited in Ali, Uppal *et al.*, 2018, p.2) and "*although extensive work has been done to understand these e-learning implementation barriers*" (Kwofie and Henten, 2011, as cited in Ali, Uppal *et al.*, 2018, p.2), not enough effort has been expended to strengthen this knowledge. The consolidation of understanding in terms of e-learning implementation barriers could be achieved by examining these barriers from instructors' and students' perspectives, since the barriers are perceived and faced by the stakeholder groups themselves, and a deeper understanding of the issue would be obtained by examining these stakeholders' perspectives. Naveed and Ahmad (2019) propose that the most significant barriers or challenges to e-learning can be discovered in future studies, and the relationship between CSFs and barriers can be investigated to prioritize and understand their impact. This view is supported by Daniela *et al.* (2018) who clearly acknowledge the fact that currently, there are significant barriers to successful e-learning implementation that HEIs are faced with, and that these definitely need further analysis by means of focused qualitative studies to be performed in the future. Barclay *et al.* (2018) propose that while students are the most important e-learning stakeholders from whose perspective current research on e-learning implementation barriers is directed, instructors' acceptance is also crucial. To comprehend and accomplish efficacious implementation and utilization of e-learning systems, an understanding of the barriers faced by instructors is required. Consequently, further research should focus on the sustainable implementation of HE not only in terms of learning outcomes, ICT use, and the creation of a fertile ground for new innovations, but also in terms of the barriers posed by stakeholder perceptions of HE. According to Daniela *et al.* (2018), the problem of how HE can be implemented to support sustainable e-learning practices should be prioritized highly in current research focus, and Luongo (2018) additionally reinforces this notion by indicating that the area of analyzing and measuring e-learning instructors' self-perceived barriers and resultant satisfaction levels are areas much in need of further research.

Successful implementation of e-learning goes hand-in-hand with stakeholder acceptance of e-learning; therefore, it is a topic that has garnered increased research interest in recent years. The key components influencing e-learning acceptance include a wide range of factors that can

be examined more thoroughly by analyzing their impact on e-learning acceptance in order to observe its implementation more successfully and safely by reducing associated barriers (Chavoshi and Hamidi, 2019). Further research could therefore be beneficial as per Alhabeeb and Rowley (2017) in examining and comparing the perspectives of various stakeholder groups, such as e-learning instructors, and addressing these factors from their perspectives. The categorization of these factors might reinforce existing studies, as well as future studies involving gathering the perspectives of e-learning experts in HEIs, and instructors with recent e-learning experiences. Further research into the elements that impact instructors' acceptance and sustained use of e-learning in various systems, learning, and cultural contexts, as well as a better knowledge of both the benefits and barriers of different e-learning approaches, is needed (Alhabeeb and Rowley, 2017). According to de Metz and Bezuidenhout (2018), instructors' attitudes about their practices and barriers during e-learning instruction have seldom been addressed but understanding what is lacking in e-learning instruction is crucial for researchers and HEI management to design online support programmes for e-learning instructors in higher education. To acquire a better knowledge of the perspectives, motives, and competences to apply e-learning in HE teaching-learning practices, future studies should include more instructors and employ both the survey approach with questionnaires and interviews (Almas, Machumu and Zhu, 2021). Kumar *et al.* (2019) upon performing a systematic review of extant e-learning education literature, state that they have not come across many studies that examine instructor perceptions and attitudes towards online education. What is more, is that several reports over the years have shown that in recent times instructor perceptions towards technology and online education haven't changed much and remain negative. Kumar *et al.* (2019) additionally state that researchers should be asking what the potential factors influencing these perceptions are, how instructor acceptance of online education can be facilitated and furthermore, what the management actions that enable the implementation of innovative e-learning delivery approaches and models are. Further research is desirable on the different forms of support that are desirable to facilitate such an abrupt transition, where instructors find themselves having to emergently engage in e-learning teaching, and having in mind the longer term, on instructor support for remote or blended teaching where instructors, while in their classrooms, would also need to teach students who are at a distance (Pedro and Kumar, 2020).

E-learning instructors need to feel that these additional efforts on their part contribute meaningfully to the effectiveness and implementation of the learning delivery process, and

therefore, according to Chin *et al.* (2020) future studies may consider going beyond the classical TAM and including the affective or emotional components of motivational elements to more thoroughly comprehend instructor acceptance of e-learning and whether discipline variations influence HEI instructors' ability to incorporate technology into their teaching. Kordrostami and Seitz (2021) further suggest that future research may look at instructor perceptions of e-learning and engagement in order to investigate whether any additional elements might be present, that could mediate instructors' acceptance of e-learning as defined in the TAM. For instance, San-Martín *et al.* (2020) point out that existing research does not provide a reliable explanation for the impact of instructors' self-assessment, which needs to be investigated further in conjunction with other dimensions like professional experience, autonomy support, organizational structure, and control in future studies, which are all goals to work towards in order to achieve CSFs and overcome barriers towards instructors' acceptance of e-learning, with the help of supportive HEI management actions. In terms of the TAM and more precisely the examination of instructors' acceptance of e-learning, technological complexity, motivation for instrumental use, constructivist beliefs, and subjective norms, are the four primary antecedents that explain instructors' technology acceptance in the educational context, according to previous research. Despite the abundance of research on instructors' technology acceptance, most studies have focused on the direct effects of antecedents to TAM variables, such as PU, PEOU, and BI, and most studies have viewed these antecedents as acting independently in educational technology acceptance without other influences (Chin *et al.,* 2020). The present Thesis therefore aims to explore the potential effect that other variables such as instructors' perceptions towards HEI management action to achieve CSFs and overcome barriers, could have on instructors' acceptance of e-learning.

2.16 Preliminary conceptual framework

Following the presentation of the current study's conceptual dimensions as they have been gleaned through extant literature, these conceptual dimensions and their interrelationships are now laid out in order to construct a preliminary conceptual framework that will serve as a basis to be tested through primary research and thus contribute towards reaching the final version of the framework.

The initial conceptual framework strives to expand the knowledge of instructors' perceptions towards e-learning effectiveness and implementation issues by considering them holistically rather than individually as separate notions. Kumar *et al.* (2019) argue that researchers should adopt a holistic approach towards studying e-learning in order to be able to gain a thorough understanding of this complex topic. The framework arises as a result of the main aim of this research which is to explore and understand the effect of instructor perceptions of e-learning CSFs, associated barriers and management actions on instructors' acceptance of e-learning. To this end, the framework examines three interrelated concepts within e-learning:

    A. Instructor perceptions towards e-learning effectiveness factors and implementation barriers.

    B. Instructor perceptions towards HEI management actions to address effectiveness and implementation issues, and

    C. Instructor acceptance of the e-learning system.

More precisely, by studying extant literature carefully, the author has discerned that within the concept of effectiveness, achievement of CSFs is a key determinant, whereas in terms of implementation, extant literature discusses the problems posed by barriers to e-learning and the importance of overcoming these barriers in order to implement e-learning successfully. Both of these dimensions necessitate apt HEI management supporting action if their requirements are to be met successfully, and what is more, it is proposed that proper HEI management action towards these demands has a profound effect on e-learning instructors' acceptance and utilization of e-learning.

In order to achieve the Thesis' aim and objectives, the author has divided the conceptual framework into three distinct parts which are each addressed by the relevant RQ's as they are stipulated through the framework. The first part examines e-learning instructors' perceptions towards e-learning CSFs and barriers. The fact that the exploration of this connection was not arbitrarily chosen, is supported by the plethora of articles in extant literature that urge future researchers to gain a better insight on the topic of instructors' views towards e-learning CSFs and barriers due to the lack of extant literature that examines these issues thoroughly (Ahmad *et al.,* 2018; Ali, Uppal and Gulliver, 2018; Almas, Machumu and Zhu, 2021; Berry, 2019; Graham, 2018; Kumar *et al.,* 2019; Miranda *et al.,* 2017; Naveed and Ahmad, 2019; Naveed *et al.,* 2020; Van Wart *et al.,* 2020). The exploration of this connection is specified through RQ1 which is answered comprehensively through RQ1a and RQ1b as stated below:

RQ1: How do e-learning instructors perceive and evaluate factors for e-learning effectiveness and barriers to e-learning implementation?

RQ1a: How do e-learning instructors perceive and evaluate critical success factors for e-learning effectiveness?

RQ1b: How do e-learning instructors perceive and evaluate barriers to e-learning implementation?

The second part of the conceptual framework arises as a result of extant literature indicating the lack of representation of the instructors' views and the fact that they are usually excluded from decision-making affecting the type of e-learning support they receive from HEI management (Al-Jedaiah, 2020; Al-Karaki *et al.,* 2021; Annand and Jensen, 2017; Bryan, Leeds and Wiley, 2018; Daniela *et al.,* 2018; de Metz and Bezuidenhout, 2018; Singh and Hardaker, 2017). The researcher, however, has demonstrated the importance of the instructors' perspective as key stakeholders in the e-learning process through the literature review on the relevant topic (Alhabeeb and Rowley, 2017; Alhabeeb and Rowley, 2018; Almas, Machumu and Zhu, 2021; Cherry and Flora, 2017; Kumar *et al.,* 2019; San-Martín *et al.,* 2020). Therefore, at this stage the author examines instructors' thoughts and feelings concerning HEI management actions taken towards satisfying the needs posed by achieving e-learning CSFs and reducing barriers to e-learning implementation. This objective is carried out by posing RQ2 which is answered thoroughly by RQ2a and RQ2b, as outlined below:

RQ2: What do e-learning instructors think and feel about management actions taken towards e-learning effectiveness factors and barriers to implementation?

RQ2a: What do e-learning instructors think and feel about management actions taken towards achieving e-learning critical success factors?

RQ2b: What do e-learning instructors think and feel about management actions taken towards overcoming e-learning barriers?

Finally, the last part of the framework aims to study the effect that HEI management actions could have on instructors' willingness to accept the e-learning system adopted by a HEI and thus engage in a sustainable e-learning teaching process, by taking into account the aforementioned views of instructors towards e-learning CSFs and barriers to implementation. This connection has been established by drawing upon extant literature which indicates that

further research is needed into the antecedents of e-learning acceptance, by suggesting expansion of the traditional TAM by including more variables that may have an effect on instructors' acceptance of e-learning (Barclay, Donalds and Osei-Bryson, 2018; Chavoshi and Hamidi, 2019; Chin *et al.,* 2020; Choudhury and Pattnaik, 2020; Kordrostami and Seitz, 2021; San-Martín *et al.,* 2020). The author has thus proposed the testing of a new relationship between supportive management action and instructors' acceptance of e-learning. The final part of the framework is addressed by posing RQ3 as shown below:

RQ3: How do management actions taken to achieve e-learning effectiveness factors and to overcome barriers to implementation, influence instructors' acceptance of e-learning?

The researcher supports the view that the present study contributes to knowledge significantly and could be utilized by researchers and HEI management to improve existing understanding on the topics of e-learning implementation and effectiveness, since it aims to integrate e-learning instructors' views into these core topics in e-learning. HEI management would be able, by applying the model that emerges through the conceptual framework, to support their efforts to increase e-learning instructors' satisfaction in adopting teaching through the e-learning system, by reinforcing their acceptance of the system through addressing key CSFs and barriers that they are perceiving. This conceptual framework can offer a great degree of assistance in motivating e-learning instructors to take on an active role in supporting the processes involved in attaining e-learning systems implementation and effectiveness.

By converging the above concepts as outlined within the conceptual framework of the current study, the author aspires to examine the interrelationships between instructors' perceptions, e-learning effectiveness, implementation, management actions and the effect these have on eventual acceptance of e-learning by instructors. The author has adopted a holistic outlook on the subject area, with a view to the development of a framework for an appropriate management approach to e-learning that will be acceptable to e-learning instructors. It is arguable that if instructors accept the e-learning system adopted by their HEI, this in effect will lead to them implementing a more effective e-learning teaching process with positive outcomes for all stakeholders involved. The preliminary conceptual framework is shown in Figure 2.13.

Figure 2.13: Preliminary conceptual framework (Source: Author's own)
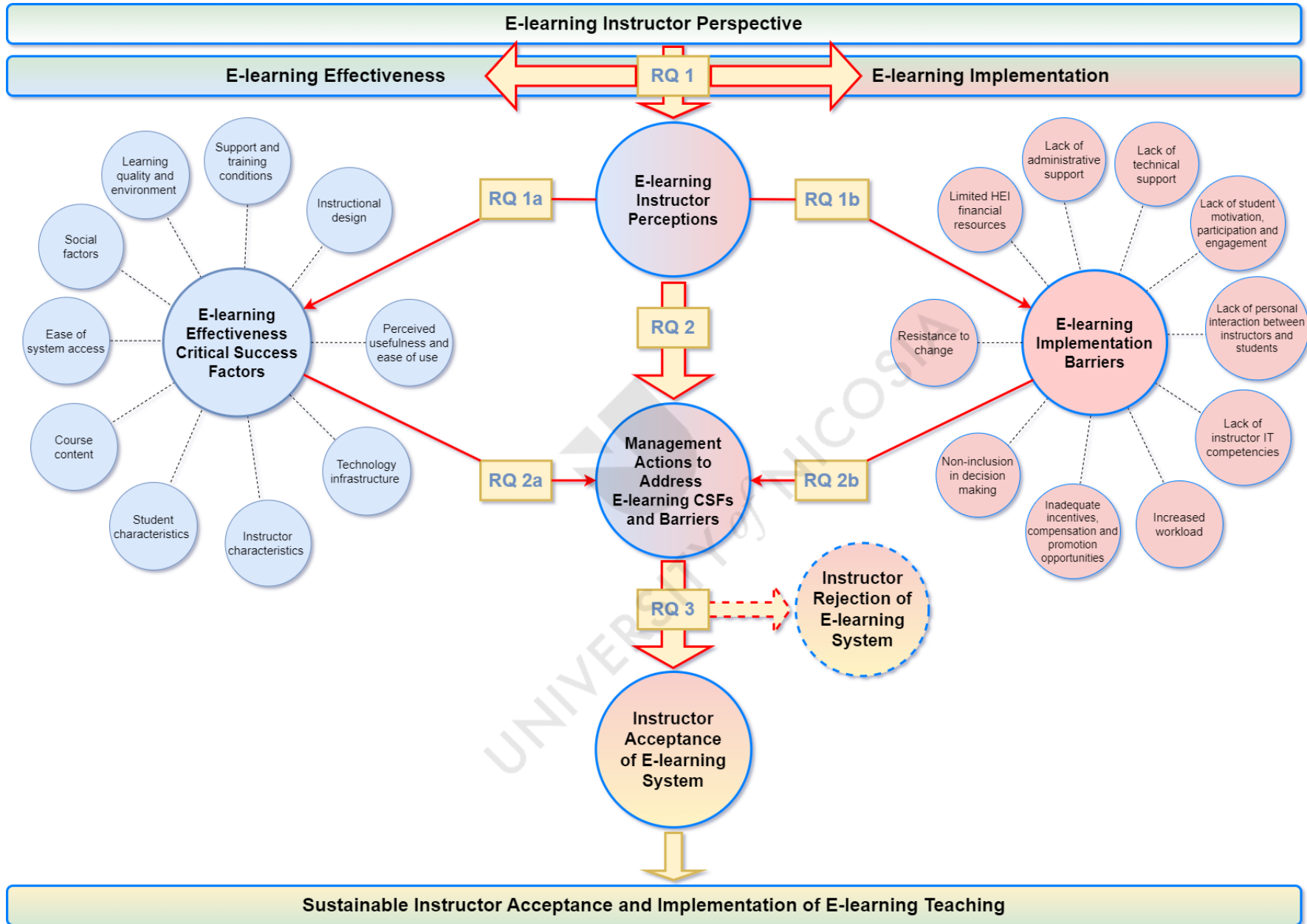
2.17 Conclusion

In the current Chapter the author carried out a literature review of the extant research related to the Thesis' topic, through which the key theoretical concepts were presented and discussed. Initially, the researcher performed a scoping study of extant literature and identified the thematic areas of instructor perceptions, e-learning effectiveness, implementation, and acceptance as being key to the focus of the study.

The Chapter set out with an explanation of the importance of examining the instructors' perspective to e-learning. Specifically, the scope was narrowed down by examining extant literature on the concept of e-learning effectiveness as perceived by e-learning instructors. Through extant literature it was identified that the concept of e-learning effectiveness is exemplified through CSFs. Since extant literature on CSFs showed disparate results and the identified CSFs amounted to a very large number, the researcher embarked on performing a systematic literature review of extant research on e-learning CSFs in order to determine the most recurrent dimensions and thus determine the precise elements towards which instructor perceptions needed to be examined. The systematic literature review review was presented, and the most recurrent CSFs discussed in extant literature were identified.

Next the Chapter examined the concept of e-learning implementation and extant literature pointed out that barriers to implementation faced by e-learning instructors were a research topic that merits further research. The author discussed the main e-learning implementation barriers faced by instructors and outlined the importance of understanding instructors' perceptions towards these.

Subsequently, the Chapter explored the topic of management actions towards addressing e-learning CSFs and barriers, and the significance of obtaining further instructors' views on these actions. Finally, the Chapter presented the topic of e-learning instructors' acceptance of e-learning and discussed the exploration of how this is influenced by supportive management actions. This was followed by a presentation of the research gap and the preliminary conceptual framework as it arose from the concepts in existing theory.

In the following chapter the researcher will explain how the relationships that exist between the conceptual dimensions will be examined qualitatively, and will elaborate on the relevant

methodology and tools employed in the primary research, in order to empirically validate the proposed preliminary framework.

CHAPTER 3 RESEARCH PHILOSOPHY, METHODOLOGY AND METHODS

3.0 Introduction

The selection, planning, and application of the different methodological processes required for the performance of this research are covered in Chapter three and the author discusses the methodology and methods utilized to carry out the research study. The chapter starts with a statement concerning the philosophical positioning adopted within the present research, then moves on to discuss the research design, which includes the study's purpose and methodology. Following that, this chapter discusses the data gathering technique utilized in this study, which is in-depth semi-structured interviews along with a justification of the chosen technique, as well as the research approach to sampling and the interview protocol that was followed. Lastly, the data analysis process is outlined, followed by issues concerning data quality, with specific reference to data credibility, validity, reliability, and ethical considerations.

3.1 Philosophical positioning

Research philosophy dictates the set of beliefs about how data concerning an issue should be collected, analyzed, and utilized, and it is underpinned by a researcher's philosophical positioning. All researchers must be aware of their philosophical positioning and be able to explain and justify it (Bryman, 2004). Researchers are guided and driven towards their philosophical approach by the philosophical stance they take, which enables them to select the most appropriate research method for their investigation, and thus to determine the data gathering and analysis methods to be adopted (Brönnimann, 2021). This establishes the research paradigm within which to operate, and the researcher is guided by a variety of considerations while deciding which research paradigm to utilize and which research method to employ, with a focus on the aim, research objectives, and research questions posed by the study. Prior to undertaking data collection, adopting a philosophical stance guides the theoretical understanding of the social environment, which inevitably enriches research endeavors during the point of data collection (McLachlan and Garcia, 2015). The research philosophy is comprised of the essential components of ontology and epistemology. The researcher, therefore, examines the research paradigm with reference to the concepts of ontology and epistemology in the next section.

3.1.1 Ontology and epistemology

Ontology is a discipline of philosophy that is involved with the essence of reality, i.e., what entities if any exist, and if reality is actually a creation of the beholder's imagination (Burrell and Morgan, 1979, as cited in Holden and Lynch, 2004). More precisely, ontology examines the "*what is, of the kinds and structures of objects, properties, events, processes and relations in every area of reality*" (Smith, 2012, p.47). A strong understanding of the principles of ontology is vital for the conducting of any type of research, as the perception of these principles affects the researcher's view and approach to studying the social world around them (McLachlan and Garcia, 2015). Moreover, the underlying assumptions while conducting a study are predicated on the researcher's view of reality, which is what defining ontology in terms of research work is particularly concerned with (Holden and Lynch, 2004).

Objectivism and subjectivism are two essential features of ontology, in terms of how phenomena are viewed in the social world. Objectivism and subjectivism have been depicted as the very opposites on a spectrum with a variety of philosophical viewpoints in between. The objectivist approach to social research has arisen from the natural sciences according to Holden and Lynch (2004), through the process of scientists choosing to examine social science concerns using the scientific disciplines' very effective and already established methodologies. Rand (1961) developed objectivism as a philosophical framework, with the key ideas of Rand's philosophy being that reality and consciousness are independent of each other, and with objective knowledge being derived from observation through the use of inductive logic and idea creation (Rand, 1961, as cited in Wang and Peyvandi, 2018). Conversely, subjectivism arose as critics have been asserting that these two sciences are incompatible. Proponents of subjectivism claim that reality is shaped by social actors and that social phenomena are shaped by these social actors' views. In this regard, social constructivism defines reality as socially produced, with several actors and points of view (Saunders, Lewis and Thornhill, 2019). Therefore, the philosophical perspective of subjectivism purports that reality is a social construct that can only be perceived subjectively and is dependent on the point of view of the observer.

Continuing with epistemology, it relates to what creates adequate knowledge in an area of study (Saunders, Lewis and Thornhill, 2019). The goal of epistemology, or knowledge theory, is to explain what the concept of knowledge entails, how it is applied, and why it has the

characteristics it does. The concept of knowledge itself, in its most basic sense, may be perceived to include aspects such as beliefs, questions, and hypotheses (Rescher, 2003). The various research paradigms dominating science and research, emerge as a result of scholarly discussions concerning ontological and epistemological philosophies.

Research Paradigms

A research paradigm is defined by Denzin and Lincoln (2011) as an interpretative framework, and it is further discussed by scholars as the beliefs and ideologies that give rise to the principles and criteria for conducting research (Guba and Lincoln, 1994; Becker, 1996; Saunders *et al.*, 2009). Positivism, constructivism/interpretivism, and critical realism are three research paradigms that predominantly entail epistemology throughout contemporary academic discussions (Lawani, 2021).

Positivism is an epistemological position that promotes dealing with social reality that can be observed. According to Saunders *et al.* (2019), the knowledge generation promoted by positivism focus is on highly structured approaches that encourage replication, with the end result potentially being rigid generalizations comparable to those created by natural and physical researchers. Positivism additionally approaches research methodologies in an organized, standardized manner in order to elicit accurate, trustworthy, and valid 'facts' about the social world (Silverman, 2011, as cited in McLachlan and Garcia, 2015). On the other hand, approaches that highlight the importance of individuals' personalities and engagement in cultural and societal spheres are tackled through the lens of interpretivism or constructivism (Elster, 2007; Walsham, 1995, as cited in Chowdhury, 2014). This research paradigm denotes research methods that presume individuals' comprehension of the real world as being socially constructed by anthropological agents, and hence expressly exclude natural science methodologies (Eliaeson, 2002; McIntosh, 1997, as cited in Chowdhury, 2014). Through an analogical and self-referent exchange, constructivist techniques emphasize the interactive element of contact with study informants in order to generate research data. Only through jointly constructed, two-way, and meaning-generating procedures between the researcher and the research participants can this be accomplished (Cunliffe, 2011, as cited in McLachlan and Garcia, 2015). The third research paradigm is critical realism, which is also the chosen approach for the present research and is outlined in more detail in the following section.

3.1.2 Research philosophy - definition and application of critical realism

The research philosophy chosen for this study is Critical Realism. CR represents an all-encompassing scientific philosophy as it employs the constructivist as well as the positivist approach in order to produce a comprehensive take of both ontology and epistemology (Fleetwood *et al.*, 2002; Gorski, 2013, as cited in Lawani, 2021). This research paradigm aims to determine the fundamental causal relationships between social occasions so as to obtain an improved knowledge of arising matters and, as a consequence, produce calculated suggestions to deal with social difficulties (Fletcher, 2017, as cited in Lawani, 2021). One of the most important tenets of critical realism is that "*ontology (i.e., what is real, the nature of reality) is not reducible to epistemology (i.e., our knowledge of reality). Human knowledge captures only a small part of a deeper and vaster reality*" (Fletcher, 2017, p.182). Consequently, the concepts of critical realism dictate that there are two spheres of existence: the natural world and the social world, which are different from one another in the sense that universal laws exist within the natural world, however, the social world can be deemed to change and evolve constantly due to human dynamics. Therefore, as proposed by Saunders *et al.* (2019), humans' perceptions of the natural world and its universal laws also change and evolve constantly. The main strength of the CR research paradigm thus lies in its ability to handle both natural and social sciences, which provides a platform for a wide range of approaches to be used. As a result, it can take a realistic perspective by highlighting the flaws in positivism and interpretivism separately, by encompassing the critical theory of society (Mingers, 2004; Wikgren, 2004, as cited in Mkansi and Acheampong, 2012).

Application of critical realism

Practically speaking, CR has gained popularity in recent years as a potential and plausible middle ground between two contradictory extremities of the philosophical continuum: radical positivism and radical constructionism. Because of its involvement and deliberation towards both ontological pragmatism and epistemological relativism, CR poses idealistically as a research philosophy that is applicable through both extremities: positivism, which proposes a reality that is independent of the mind, and constructionism, which proposes that our comprehension of this reality is subjective. The critical realist ontology, therefore, seems to be more in line with modern-day common sense rather than being opposed to it (McLachlan and Garcia, 2015). It would be extremely useful to recognize the distinction between the two spheres comprising the natural and social world in the context of the present thesis, as it aims

to investigate two seemingly distant conceptual areas; that of effective implementation of e-learning and that of human perception which would lead to the acceptance of an e-learning system, as observed through the lens of the e-learning instructors' view. In order to establish the connections and potential mechanisms that cause shifts between these seemingly distant areas, the philosophy of critical realism has been chosen to approach the subject matter. Addressing the natural world concept, the researcher attempts to gain an understanding of the concepts of management science that guide the effectiveness and implementation of e-learning. In order to achieve this goal, the researcher examines issues such as management actions, strategies, policies, and underlying factors and barriers that have an effect on the cost-effective implementation of e-learning, and these are arguably observable and guided by universal natural laws. Conversely, the social world concept would be used to explore precisely how these factors and barriers are perceived by the e-learning instructors' stakeholder group so as to obtain an in-depth understanding of their innate perspective. The views of instructors towards these factors and barriers would be driven by instructors' perceptions, attitudes, values, and experiences, and so are generally unobservable and intrinsically generated.

Delving further into the topic, the realism dimension of the adopted research philosophy underlines the fact that there are real existing mechanisms causing an event and by applying the theory one accepts that there is no predictive but explanatory power, as one attempts to understand the otherwise unobservable mechanisms through the use of qualitative and quantitative research methods. The observable mechanisms in the present study are the effectiveness and implementation of e-learning reinforced by proper management actions. The unobservable mechanisms are the e-learning instructors' perceptions of these observable realities. It is by understanding these unobservable mechanisms, that one can truly comprehend the observable reality, as there are underlying mechanisms that create observable conditions necessary for an event to take place. Therefore, the reality surrounding the present Thesis' research focus cannot be effectively measured by artificially constructed experiments and it could be claimed that e-learning instructors' experiences with an e-learning system represent precisely the social phenomenon whose understanding would be able to shed more light on the research problem being explored. Having said this, language, decisions, perceptions, disputes and hierarchies are all examples of social phenomena as defined by Dobson (2001), that exist objectively in the world and have strong influences on human actions because people interpret them in similar ways to one another. In this way, things that are believed become real and can be investigated as a result.

Following this vein of thought, the research philosophy of CR lends itself to theoretical frameworks that support us in approaching reality and uncover causal mechanisms that produce phenomena, activities, or social proceedings that are picked and constructed based on rational viewing of the said social proceedings (Fletcher, 2017). In this particular case, CR is beneficial for assessing the social issues and offering answers leading towards social advancement arising as a result of instructors' interaction with e-learning, because of its aptitude to provide an explanation and causal analysis of instructor experiences and perceptions rather than presenting a lengthy empirical description of the specific situation (ibid.). This is due to the fact that a researcher would be able to comprehend the complexities of the social world, only if they also grasp the social structures that bring about the phenomena that the researcher is attempting to understand (Saunders, Lewis and Thornhill, 2019).

These concepts will therefore be practically applied to examine the subject matter of the study. While approaching the subject matter from the realism dimension, the researcher would pose questions such as: *What are the most prominent CSFs and barriers to e-learning effectiveness and implementation from existing literature?* In parallel, while taking into account the existence of unobservable reality, the researcher attempts to determine: *What do instructors within the e-learning environment consider as important CSFs, barriers, and corresponding management actions?* The ability to approach the subject matter in such a way is very valuable since according to Saunders *et al.* (2019), critical realists argue that what humans perceive are emotions, or depictions of objects in the physical world, instead of the objects themselves. Therefore, within the realm of CR and for the purposes of the present Thesis, this information can be used to understand the underlying unobservable mechanisms (instructors' perceptions) through which the observable events (achievement of CSFs, and reduction of barriers) are viewed, and thus establish the causal mechanisms for the achievement of these CSFs and reduction of barriers, which would, in turn, be proposed to lead to instructors' acceptance of the e-learning system applied by their HEIs.

According to Ryan (2018), while conducting a study, a researcher should consider both their own opinions about philosophy as well as the subject under inquiry itself. Additionally, by applying the tenets of CR, the aim and subject of the research study are inexorably linked and for this reason, CR seems to be the appropriate methodology to examine the questions posed by the researcher in the present thesis. What is more, is that Saunders *et al.* (2019) assert that

there are two ways to experience the world, according to CR. There's the object itself, as well as the emotions it elicits. Secondly, when the sensation has been received by our senses, there is a brain processing activity that occurs. It would therefore seem to be the case, that CR is not only representative of the researcher's individual perceptions toward research philosophy but is also exceptionally appropriate for the examination of the relationships posed by the Thesis' RQs. The accompanying concepts arising as a result of examining the Thesis' subject matter from the CR perspective have been fused together within the preliminary conceptual framework of the study. Additionally, it is of great benefit that CR as a research paradigm is *"methodologically pluralistic, thus allowing to source data through different methodologies and methods"* (Wynn and Williams, 2020, as cited in Brönnimann, 2021, p.6). It, therefore, lends itself effectively to the research strategy approach and design as adopted in the present Thesis.

3.1.3 Research strategy approach

Upon considering the researcher's philosophical positioning adopted in the present Thesis, it is crucial to clarify the research strategy approach which has been applied, as necessitated by the essence of the research questions that have been posed, and by the methodology espoused towards obtaining the desired results from the field study. There are different research strategy approaches, and researchers typically employ the approach that best matches the requirements of their research, but they also tend to utilize the approach that best suits them personally (Ali, H. and Birley, 1999). In order to assist with the comprehension and explanation of the research strategy approaches available, the researcher has thoroughly studied the Research 'Onion' as proposed and updated by Saunders *et al.* (2018), which is a diagram that depicts the challenges that underpin the selection of data gathering methodologies and analytic procedures.

Figure 3.1: The research 'onion' (Source: Saunders, Lewis and Thornhill, 2018)
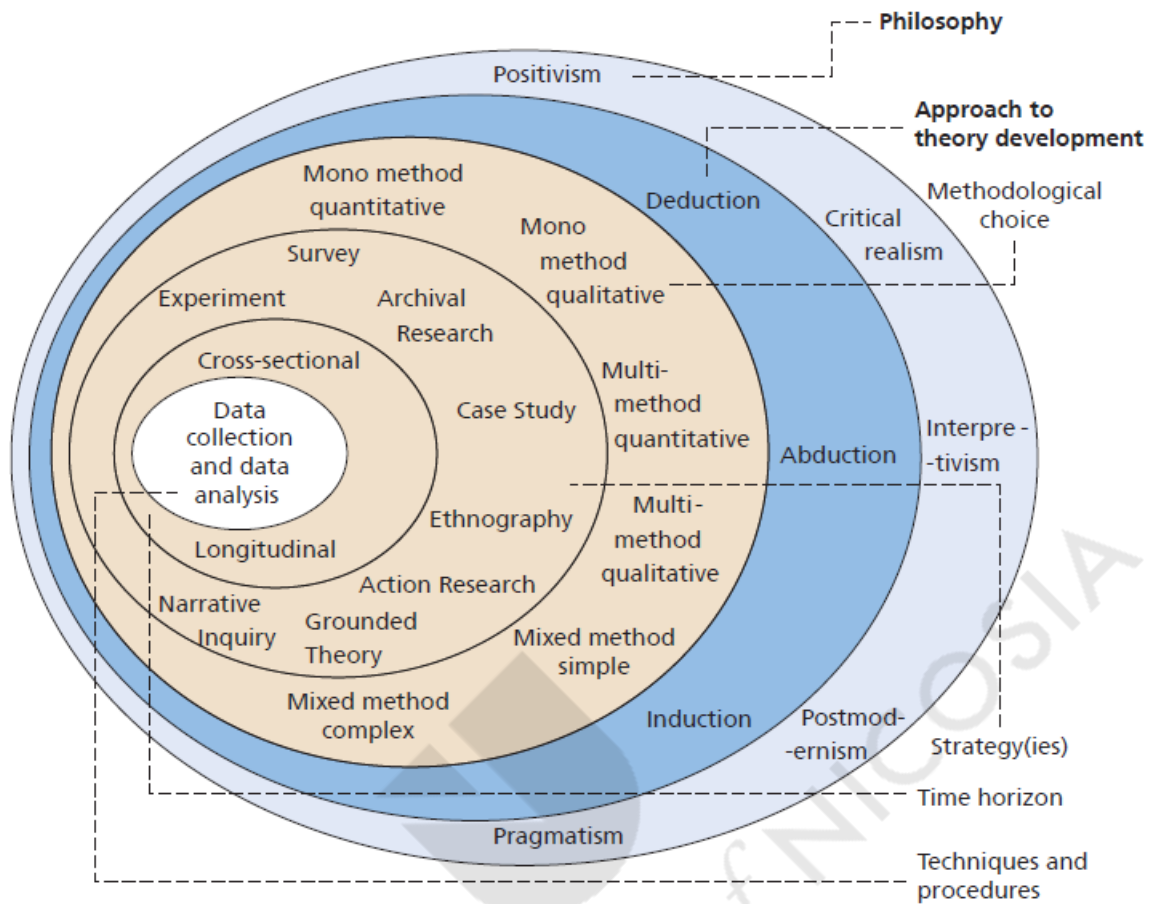
The method by which a researcher approaches data gathering should be at the heart of the research 'onion' and when a researcher reaches this fundamental core, they must explain why they have made the research decisions they did, so that others may realize the reasoning that makes the research important. As a result, important outer layers of the onion must be first understood and explained rather than simply peeled away and discarded. The outermost layer, which is the philosophy has been fully understood and explained rather than just peeled away and discarded in the previous section with the choice explanation of the CR philosophy. Subsequently, moving inwards through the 'onion', there are two foremost research strategy approaches that can be observed; the deductive one, and the inductive one as depicted in Figure 3.1 above. However, in order to represent the prevailing approaches within the business and sociology fields, the abductive approach as proposed by Tsanis (2013), has also been examined and all of these three approaches are explored further down.

According to Graziano and Raulin (2010), the more traditional approach is the deductive theory, and it emphasizes on deductions from constructs, with the deductions being hypotheses which can be tested empirically. The deductive approach thus centers around present theories and hypotheses as their basic starting point (Galitsky, 2006) and further to that, according to Saunders *et al.* (2019), a researcher can develop theory and hypotheses using the deductive research approach, and then construct a research strategy in order to test the theory or hypotheses. As stated by Mason (2002) researchers can test a theory using a research strategy based on academic literature using the deductive technique as it is founded on crucial elements of extant theoretical foundations, the formulation of hypotheses, and the quantitative testing of these assumptions. Deductive reasoning is therefore defined as the process of identifying a theory, formulating predictions based on the theory, and then putting the theory to the test through observation or experiment (Bryman, 2008) and this type of approach aims to utilize a deductive procedure in order to generalize results from large sample sizes. This procedure comprises the development of hypotheses based on the scientist's interpretation of an occurrence. Objectivists support these views, and they trust in causality, which means that *"there are independent causes that lead to the observed consequences"* (Remenyi *et al.,* 1998, p.32), and that a hypothesis can be confirmed or disproved by reviewing examined results. The deductive method further entails the quantitative operationalization of notions, which implies reductionism, or the reduction of the issue to its simplest components, as objectivists consider that simplifying a topic makes it easier to understand. The deductive approach identifies itself with the philosophical theory of positivism, which upholds the view that in terms of epistemology, the scholar and the biosphere are epistemologically separate, with the biosphere being present despite the researcher's existence (Savin-Baden and Howell-Major, 2013). Objectivists also assert that just one external reality exists on a metaphysical level, which can be revealed by deductive reasoning as well as a hypothesis and investigational testing. Therefore, we can go back to see what caused something to happen only if we know what caused it to begin with, and so this naive type of realism claims that what we see through our senses is a perfect reflection of the real world (Howell, 2013, as cited in Ryan, 2018).

On the other hand, inductive analysis refers to approaches that primarily use detailed readings of raw data to derive concepts, themes, or a model through interpretations made from the raw data by an evaluator or researcher. The primary purpose of the inductive approach is to allow research findings to emerge from the frequent, dominant, or significant themes inherent in raw data, without the restraints imposed by structured methodologies (Thomas, 2006).

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Additionally, in relation to this, Rand (1961) suggests that reality exists independently of awareness, and through the process of concept development and inductive logic, one can gain objective knowledge from their perception. As asserted by Bell and Bryman (2007), researchers that use the inductive approach are frequently looking for novel phenomena that either have not been studied previously or have only been studied to a partial extent. Consequently, they employ the inductive approach in order to develop a new notion or to work on a previously unexplored area so as to provide a strong theoretical foundation for it (Tsanis, 2013). According to Ryan (2018), observation, experimentation, and measurement are the starting points for inductive reasoning, which are then succeeded by the generalization and discernment of data patterns. This is then concluded with the formulation of a theory to encompass and represent the situation that has been encountered. According to Bryman (2004), inductive reasoning is commonly referred to as a trait of qualitative research, and furthermore it is consistent with studies that are founded on the idea of theory development subsequently to the empirical data having been gathered (Saunders, Lewis and Thornhill, 2019). Successfully employing an inductive research approach can take a long time and might require a lot of resources since, in actuality, the inductive method is a method for developing theories (Hyde, 2000) which is quite a challenging undertaking. This is because the goal of inductive research is to develop a theory on a little-studied issue or to examine the phenomenon under investigation from another angle in order for additional variables or components to be discovered and addressed (Goldkuhl, 2012; Mingers, 2012). Figure 3.2 outlines the fundamental differences between the deductive and inductive approaches.

Figure 3.2: Distinction between deductive and inductive approach (Source: Othman and Ibrahim 2013, adapted from Burney, 2008)
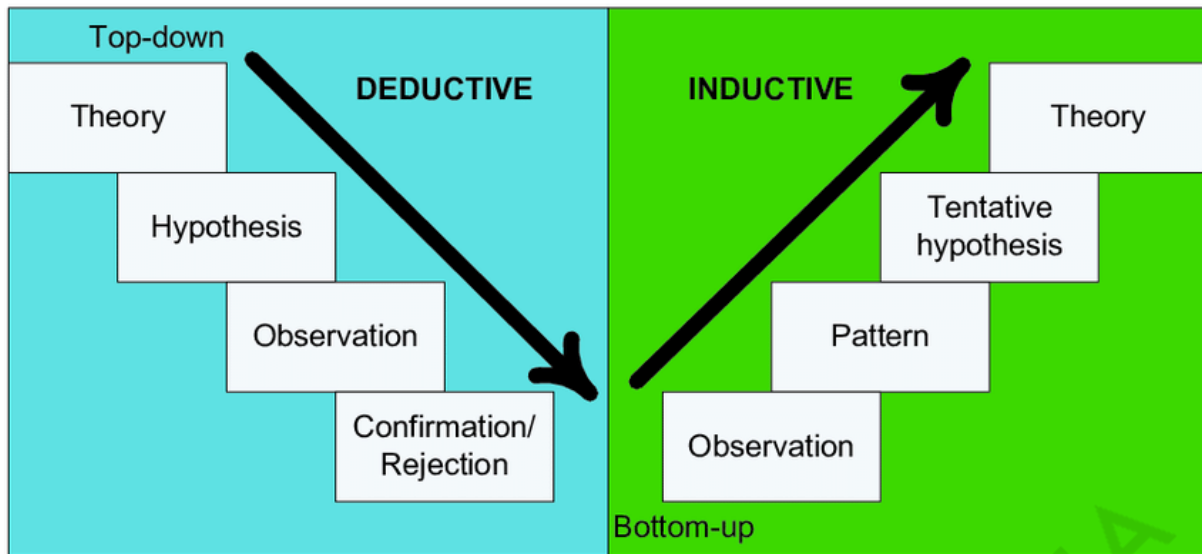
As can be seen in Figure 3.2 above, the first and most essential contrast between deductive and inductive research is that in the deductive approach, existing, established theory plays a substantial role in the formation of hypotheses and selection of variables used in the research, and also in deriving the end-result measurements employed in the specific research which arise through observation and testing (Ali, H. and Birley, 1999). Through the inductive method, a bottom-up approach to theory generation is followed, whereby the researcher through analyzing raw data, tries to establish certain patterns which could then formulate the basis for tentative hypotheses leading to the crafting of a new theory, that may subsequently be tested (Ryan, 2018). So, in essence, through deductive reasoning, the researcher is using existing theory as a starting point and tests it, whereas, in the case of inductive reasoning, the formulation of the theory itself constitutes the end goal.

As the researcher strives to create a theoretical stance and then evaluate its pertinency by means of further data collecting and analysis, the current Thesis' strategy arguably combines various components of both the deductive and inductive approaches. As a result, while researchers can start with an inductive or deductive method, most studies are likely to incorporate components of both (Saunders, Lewis and Thornhill, 2019). CR researchers typically use an abduction-based research logic, which is a middle-of-the-road method to knowledge development that falls somewhere between deduction and induction (Järvensivu and Törnroos, 2010). The following figure serves to provide an understanding of the cyclical nature of inductive and

deductive reasoning, and how these approaches affect the extent to which a research study will have an exploratory versus an explanatory nature.

Figure 3.3: The wheel of science (Source: Eikebrokk and Busch, 2016, adapted from Wallace, 1971)
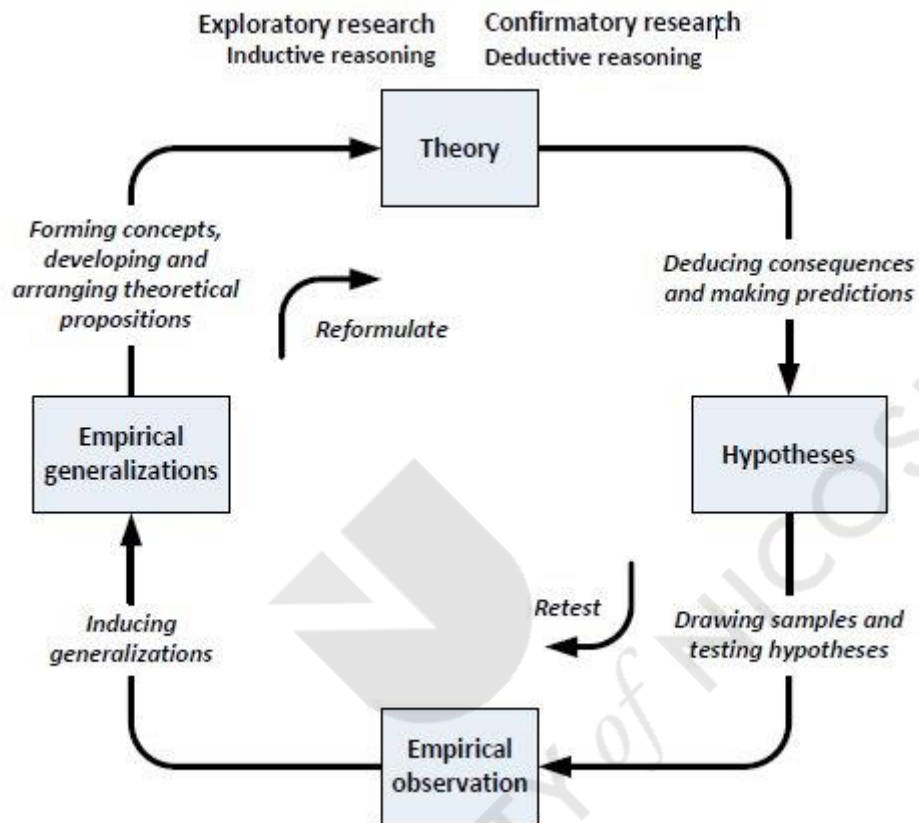
It can be observed through the Wheel of Science that depending on the type of research a scholar would like to pursue (exploratory vs confirmatory), this will also determine the approach to philosophical reasoning that will need to be adopted (inductive vs deductive reasoning). This in effect will also determine the research methods deployed, as well as the data collection tools that will need to be implemented. As mentioned, in addition to the inductive and deductive approaches to study, there is also the abductive approach which is a hybrid method of deductive and inductive thinking (Tsanis, 2013), and critical realists have been the main proponents of the abductive theory (Kovács and Spens, 2005). This strategy, according to Kovács and Spens (2005), combines creativity with intuition to arrive at a novel hypothesis through abduction, which is the process of analyzing and examining extant phenomena before looking at them from a new angle (Danermark, Ekstrom and Jakobsen, 2005). As a result, in contrast to inductive theory, abductive theory accepts current theoretical conclusions derived from the literature and believes that such results can aid in the analysis of

emergent ones (Andreewsky and Bourcier, 2000). The key point of divergence between the abductive and deductive or inductive approaches is that the abductive approach's theoretical and conceptual frameworks would be edited either in part or even completely in response to empirical study findings and unanticipated results that may arise from empirical research and from additional theory encountered throughout the course of the research process (Taylor and Callahan, 2005).

CR strives to uncover the most appropriate explanation of reality via engaging with current imperfect hypotheses concerning the real world, and it states that active thinking investigation is required prior to the research ever beginning (Hart, New and Freeman, 2004). However, where existing hypotheses might be completely lacking, an approach called grounded theory could be a viable way to probe a research topic. This approach differentiates itself from the tenets of CR, since grounded theory's inferential methods are essentially inductive, whereas CR employs abduction and retroduction or more precisely a method of conceptualization in which the researcher must determine the conditions under which the notion itself would not be able to exist (Danermark *et al.,* 1997). What is more, grounded theory is driven by data, whereas CR's analytical approach is more driven by theory and the researcher themselves. Even though grounded theory is not always entirely pragmatist, it does entail the abstraction of theory from evidence, and its connection to data is more pragmatic than CR (Suddaby, 2006). Because extant theory is such a crucial element of CR analysis, it's hard to justify using a method such as grounded theory, that has been established on the deliberate circumvention of extant theory to construct novel theories (Fletcher, 2017). Despite this, it should be noted that according to Oliver (2012), thanks to current improvements in the field of grounded theory like Charmaz's (2008) "concepts of sensitization", the ideas behind grounded theory are now able to manage the predetermined analytical classifications appreciated by critical realists. Subsequently, Table 3.1 below outlines the process that is followed from reason to research, and it is utilized to explain the research approach adopted by the researcher.

Table 3.1: Deduction, induction and abduction: from reason to research (Source: Saunders *et al.*, 2019)

	Deduction	Induction	Abduction
Logic	In a deductive inference, when the premises are true, the conclusion must also be true	In an inductive inference, known premises are used to generate untested conclusions	In an abductive inference, known premises are used to generate testable conclusions
Generalisability	Generalising from the general to the specific	Generalising from the specific to the general	Generalising from the interactions between the specific and the general
Use of data	Data collection is used to evaluate propositions or hypotheses related to an existing theory	Data collection is used to explore a phenomenon, identify themes and patterns and create a conceptual framework	Data collection is used to explore a phenomenon, identify themes and patterns, locate these in a conceptual framework and test this through subsequent data collection and so forth
Theory	Theory falsification or verification	Theory generation and building	Theory generation or modification; incorporating existing theory where appropriate, to build new theory or modify existing theory

Studying Table 3.1 above, since the researcher has adopted the CR research philosophy, this research applies a combination of both inductive and deductive approaches in order to be able to answer the RQs as posed by the study. This is mostly due to the fact that the researcher aims to gather data for the examination of a novel phenomenon, while at the same time it is sought to alter extant theory through further data gathering. More precisely, the researcher is interested to assess CSFs and barriers to implementation of e-learning, and for this purpose, a deductive approach needs to be adopted. The researcher is also interested to examine an emergent and novel phenomenon, which focuses precisely on the process through which e-learning instructors perceive management actions taken to address CSFs and barriers. Through postulating these relationships, the researcher also seeks to examine the resultant effect on instructors' acceptance of an e-learning system, and since this is a totally new relationship that has not been explored before, an inductive approach needs to be followed in this part. The research will thus examine various factors contributing to the success and effectiveness of online education and will subsequently determine whether they are key for the design of an online education system from the instructors' perspective. Hence, both the deductive and inductive approaches will be employed for analyzing the data, leading the researcher to choose the abductive approach to explore the subject matter of the present Thesis.

One of the most telling facts gleaned from Table 3.1 that has nudged the researcher to approach the topic with an abductive stance, is that through adopting this position, the researcher is looking to integrate existing theory, where appropriate, to create new theory or alter existing ones (Saunders, Lewis and Thornhill, 2019). As indicated by the literature review that was carried out, there is a clear need to alter existing theory concerning instructors' technology acceptance within e-learning (Barclay, Donalds and Osei-Bryson, 2018); (Chavoshi and Hamidi, 2019); (Choudhury and Pattnaik, 2020). The researcher seeks to utilize extant theory focusing on e-learning effectiveness/CSFs (Graham, 2018); (Miranda *et al.,* 2017); (Naveed and Ahmad, 2019); (Naveed *et al.,* 2020); (Van Wart *et al.,* 2020), e-learning barriers to implementation (Ahmad *et al.,* 2018); (Ali, S., Uppal and Gulliver, 2018); (Almas, Machumu and Zhu, 2021); (Msomi and Hoque, 2018), and associated supporting management actions (Al-Jedaiah, 2020); (Al-Karaki *et al.,* 2021); (Bryan, Leeds and Wiley, 2018); (Singh and Hardaker, 2017). Aiming to integrate these concepts into the conceptual framework of this study, the researcher strives to alter existing theory on e-learning instructors' technology acceptance by proposing a novel relationship between the perceptions of instructors towards e-learning CSFs, barriers and associated management actions, and the instructors' propensity to accept the e-learning system adopted by their HEIs.

For the reasons outlined above, the abductive approach appears to be the most appropriate for the criteria of this investigation. To begin explaining this to a further level of depth, the abductive theory is mostly used to investigate new relationships based on new components, which results in the creation of understanding of a particular topic under inquiry (Andreewsky and Bourcier, 2000). As stated, the present research looks into emerging and relatively new phenomena: the realm of instructors' perspectives towards how well HEI management achieve e-learning CSFs and remove barriers to e-learning, and what is more, whether these perceptions affect the likelihood that instructors would accept and embrace an e-learning system. Examining this new relationship is strongly encouraged by extant theory, especially as exemplified by San-Martín, Jiménez *et al.* (2020), through their research work studying the determinants of instructors' continuance commitment to e-learning in HE. These authors support the concept of addressing the viewpoint of instructors on the development of e-learning, a viewpoint that has been generally overlooked in previous academic studies but has been shown to be of central importance (ibid.). As a result, the abductive approach appears to be a better fit for investigating this novel link and furthermore, this study uses both primary and secondary data to provide answers to its research questions and achieve its objectives,

which is also in accordance with the abductive approach. More precisely, the study begins with analyzing and discussing current theory and knowledge on linked issues and subjects, as well as collecting data from primary research. The analysis section then draws comparisons between and combines both primary and secondary data in a manner which moreover propels extant understanding of e-learning CSFs and barriers by designing a newly developed framework which supplements the understanding of instructors' perspectives since they are important stakeholders whose view could also contribute to the better management of e-learning systems through CSFs achievement and barriers reduction.

The abductive research strategy approach also coincides with the researcher's individual philosophical approach, mainly due to the fact that CR researchers' most common choice of approach is the abductive one. This, combined with the fact that the abductive approach is also the most fit one to examine the present RQs as posed by the Thesis, makes it the ideal choice in terms of the research approach to be implemented in the current body of work.

3.2 Research design

Research design may be described as the roadmap that the researcher creates in order to be able to establish the proper approach that will place them in the best position to attempt to effectively answer the RQs posed by a study (Saunders, Lewis and Thornhill, 2019). As such, creating a proper research design is of great importance for the success of a study, since this is the part where both the purpose of the research as well as the precise research approach are described.

3.2.1 Research purpose

Moving onto the explanation of the research purpose, it has been identified by Saunders *et al.* (2019) that three main kinds of research purposes exist: the exploratory, descriptive and explanatory one. It is acceptable for a researcher to utilize one or combine all, depending on the needs of the study (Adams *et al.,* 2007).

The purpose of exploratory research is to figure out what is actually going on in the world; to search for new ideas; to raise questions; and to look at things from a different angle (Moran-Ellis, 1994). It is especially important if the researcher needs to clarify their comprehension of a concept, such as if they are having trouble understanding a particular facet of the concept involved (Saunders, Lewis and Thornhill, 2019). Thus, this represents a method that calls for

in-depth research into further explanations towards the understanding of a phenomenon, and due to this quality, it sheds light on novel interpretations and therefore new relationships that might be emerging (Moran-Ellis, 1994).

The descriptive approach is used mostly in natural settings, and it quite aptly outlines and depicts a situation, an individual, or an occurrence (Sefiani, 2013). The aim of descriptive research is to deliver a detailed account and an explanation of the participants' perceptions, thoughts, opinions, and general perspectives on the phenomena under examination (Adams *et al.,* 2007). Therefore, descriptive research lends itself very well to situations where the researcher is interested in obtaining an in-depth knowledge of the personal views, perspectives, and perceptions of the informants of a study.

Finally, the third type of research intent, the explanatory type, focuses on investigating scenarios or issues with the purpose of elucidating the relationships between factors comprising these scenarios and issues. The goal of explanatory research is furthermore to discover the causal relationships among the factors involved (Johnson and Yip, 2010), and consequently, this goal translates into attempting to establish cause-and-effect linkages as stated by Slack and Parent (2006). Explanatory investigations accordingly aim to look closely into the relationships between various components of the event being studied as per Babbie (2012), and it can be said that for these reasons explanatory research goes further than just a description to try to explicate the tendencies and patterns that have been discerned (Gray, 2017).

Examining the context of the present study, the researcher has deemed that it satisfies both descriptive and exploratory purposes. The descriptive nature of the study arises due to the fact that the researcher is interested to recognize, comprehend and understand e-learning instructor perceptions towards e-learning CSFs, barriers to implementation, and management actions to address both of these aspects of e-learning systems. As these aspects are in existence currently within e-learning systems, and as instructors are significant stakeholders in e-learning systems, naturally they have their own views and opinions concerning e-learning CSFs, barriers to implementation, and management actions to address these. As per the present literature, e-learning instructors' views are currently underrepresented but have also been shown to be very important (San-Martín *et al.,* 2020). Due to this fact, the need for future research to attempt to describe instructors' views regarding these components of e-learning systems has been clearly outlined as per Almas, Machumu *et al.* (2021) who state that an understanding of the e-learning

stakeholder perspective toward what makes an e-learning system successful, would lead to more value being added towards the efforts for the improvement of e-learning systems and processes by instructors themselves.

Probing further into these pathways of the realm of e-learning, the author has a keen interest to examine instructors' views towards e-learning CSFs since the systematic literature review performed by the researcher has indicated that the main CSFs identified by extant literature are not being discussed nearly enough from the perspective of instructors (Kumar *et al.,* 2019). Additionally, in terms of barriers to implementation, Kumar, Kumar *et al.* (2019) have pointed out that as per extant literature, quite a large part of e-learning instructors continue to maintain an apprehensive stance towards e-learning, and this leads to the formation of barriers that affect e-learning instructors' effective use of the e-learning system. Finally, the researcher is interested to explore and understand instructors' views on whether the management actions at the most prominent HEIs in Cyprus and globally address CSFs and barriers, building on the ideas of de Metz and Bezuidenhout (2018), who invoke HEIs to take steps towards improving the relationship between e-learning instructors and management. Having outlined these points, since descriptive research's purpose is to aid researchers in gaining a precise image of people and settings according to Saunders *et al.* (2019), it also aids the author towards completing the present Thesis, by descriptively investigating the phenomenon of instructors' perceptions of the e-learning system components as explained above. It should also be noted that the majority of qualitative studies are descriptive in character (Babbie, 2012), and the current study's methodological approach, which will be outlined in the following section, is also qualitative.

Additionally, the purpose of the current study may also be considered to be exploratory in nature, as the researcher is interested in the exploration and understanding of a new potential relationship that has not been examined previously. More precisely, this is the relationship between the instructors' views on the effective HEI management actions towards CSFs and barriers of an e-learning system, and the positive acceptance and implementation of the said system by instructors. This is a phenomenon that has remained uninvestigated in the extant literature, even though the founding theories on which the researcher has based it, have been largely examined in prior literature. While thoroughly inspecting the existing theories, the researcher has focused on the widely used TAM and has proposed a new relationship leading towards the technological acceptance of e-learning systems by instructors, as this relationship could be established by adding a supplementary factor to the model, namely the **"Management**

action to remove e-learning barriers and achieve CSFs". The proposal of this new relationship is strongly supported by extant literature since the most common denominator within existing studies on the TAM is to urge future researchers to explore ways in which the model can be expanded, as for instance Kordrostami and Seitz (2021) suggest that investigations into whether any additional elements might be present in an expanded TAM are worthwhile.

Framing things into the practical context of the present research, the author starts out with a descriptive approach and then follows up with the exploratory component since this is the best way to shed light on the research problem. Initially, the researcher will approach the examination of the perspectives of e-learning instructors in a descriptive manner, which will then enable the researcher to build on the data gleaned through the descriptive purpose of the research. While moving to the exploratory part of the framework, the researcher, having already described instructors' perceptions towards e-learning CSFs and barriers, will be able to fortify the proposal of the new relationship by outlining how e-learning system acceptance by instructors is affected by their perceptions towards supportive management actions. The results are expected to lead to the development of new management concepts and theory in the specific context of the administration of e-learning systems and processes at HEIs.

3.2.2 Research approach

The research approach is intertwined with the methodology to be utilized in a study, and what is more, *"Methodology is the philosophical framework within which the research is conducted or the foundation upon which the research is based"* (Brown, 2006, p.15). According to Dawson (2009), research methodology is the philosophy or the general principle which guides research endeavors, and thus it is the overall approach to studying a topic and includes issues that need to be taken into account such as constraints, dilemmas, and ethical choices. Furthermore, through the research approach, the differences between qualitative and quantitative research, as well as primary vs secondary data are clearly defined and understood.

Primary and secondary research introduction

Secondary data is data that is derived from existing literature and is used to formulate the basis of the empirical review. Secondary research, according to Dawson (2009), involves the collection of information from studies that other researchers have made on a subject. Such

research is represented for the purposes of the present Thesis, by existing studies in the field of CSFs, barriers, and instructor perceptions in e-learning, as well as models on the acceptance of the e-learning process. Primary data is original data that comes as a result of empirical research. According to Dawson (2009), primary research involves the study of a subject through firsthand observation. In the case of the current study, this type of research is represented by in-depth semi-structured interviews with e-learning instructors in the most prominent HEIs in Cyprus.

Quantitative research approach

Quantitative research is explanatory and deductive in nature. As discussed by Muijs (2004), quantitative research entails the collection of numerical data and its analysis through the application of methodologies based on mathematics, and chiefly statistics, to explain phenomena. An example of a quantitative research method is that of a survey, for which the goal is to collect information about a group of people by asking them questions and collecting their responses to analyze their attributes, beliefs, attitudes, or experiences (Leedy and Ormrod, 2019). Questionnaires or survey research is one of the most popular quantitative research designs. A questionnaire is a sequence of enquiries designed to gather data from respondents so that the researcher may compare the data while removing prejudice, and drawing key inferences (Saris and Gallhofer, 2014). This type of research is quite flexible and can appear in a variety of forms, but all are characterized by the collection of data using standard questionnaire forms. It is one of the easiest forms of research, but the researcher must be careful to decide what information precisely is needed, and what the population that this information would be collected from should be (Muijs, 2004).

Qualitative research approach

Qualitative study analyzes knowledge from direct observations of fieldwork, in-depth, open-ended interviews and written documents (Patton, 2005). Qualitative research is a positioned act where the beholder is specifically situated in relation to the circumstances of the situation that encircles the research purpose, and as such it is a list of explanatory and substantial undertakings that attempts to focus on the world (Denzin and Lincoln, 2011). Notes, talks, interviews, audio, video recordings, photographs and memos are just some of the ways these tools turn the world into a list of depictions. In cases like this, qualitative research demands an interpretative, true-to-life world approach. This indicates that qualitative scientists study items in their natural settings in order to understand or explain events through the perceptions of

meanings assigned to them by human beings (ibid.). Qualitative research strives to deliver a thorough approach to the extant procedures and patterns within the world that are thoroughly described, by bringing afloat a reality constructed through the respondents' point of view. Interested parties in the research activity carried out, are able in this way to peer into the informants' experiences, and additionally into their thought processes, deliberations and awareness of these experiences (Bluhm *et al.,* 2011).

Differences between quantitative and qualitative research approaches

Qualitative research's main goal is to describe and analyze functioning in everyday settings, ranging from informal conversations among friends all the way to courtroom proceedings. The method includes naturalistic and participant observation, questionnaires and analyses of conversations and social networks (Graziano and Raulin, 2010). The advantage of this method is that it allows the researcher to investigate participants' attitudes, behaviors, and experiences (Dawson, 2009), which is something that can offer a viewpoint not possibly capable of being expressed by the use of mere numbers as in the case of quantitative research. Qualitative research tries to uncover the underlying procedures in persons, groups, and organizations as social constructs, whereas quantitative research aims to maintain the generalizability of findings and methods to explain relationships within these constructs (Bluhm *et al.,* 2011). As per McCracken (2001), the qualitative approach, as opposed to the quantitative one, does not survey the top of the landscape but instead excavates it to uncover the deep meanings hidden beneath the surface. Qualitative and quantitative research methods are different according to (Mack, 2005, p.2), mainly because of:

> *their analytical objectives, the types of questions they pose, the types of data collection instruments they use, the forms of data they produce, and the degree of flexibility built into study design.*

Table 3.2 below summarizes these key differences in brief.

Table 3.2: Comparison of quantitative and qualitative research approaches (Source: Mack, 2005)

	Quantitative	Qualitative
General framework	Seek to confirm hypotheses about phenomena	Seek to explore phenomena
	Instruments use more rigid style of eliciting and categorizing responses to questions	Instruments use more flexible, iterative style of eliciting and categorizing responses to questions
	Use highly structured methods such as questionnaires, surveys, and structured observation	Use semi-structured methods such as in-depth interviews, focus groups, and participant observation
Analytical objectives	To quantify variation	To describe variation
	To predict causal relationships	To describe and explain relationships
	To describe characteristics of a population	To describe individual experiences
		To describe group norms
Question format	Closed-ended	Open-ended
Data format	Numerical (obtained by assigning numerical values to responses)	Textual (obtained from audiotapes, videotapes, and field notes)
Flexibility in study design	Study design is stable from beginning to end	Some aspects of the study are flexible (for example, the addition, exclusion, or wording of particular interview questions)
	Participant responses do not influence or determine how and which questions researchers ask next	Participant responses affect how and which questions researchers ask next
	Study design is subject to statistical assumptions and conditions	Study design is iterative, that is, data collection and research questions are adjusted according to what is learned

The adopted methodology to which a researcher arrives as a result of determining whether to take a qualitative or quantitative approach to the research topic, indicates "how" the author attempts to discover the answers to the questions posed by the undertaken study (Guba and Lincoln,1994).

Methodological choice

The researcher should not fall into the trap of thinking that one form of research is better than another. They are just different and have their strengths and weaknesses (Dawson, 2009). In reality, a careful selection of methods would lead to the best results overall, as each method is useful in shedding particular light on the research topic. The chosen research philosophy for this study is critical realism and it supports qualitative methodologies of research.

A researcher must pick from a variety of research techniques or methodologies, such as trials, case studies, field research, interviews or surveys which are equally apt at meeting research objectives. However, making such a selection should not be taken lightly, since the chosen research method needs to result in satisfying the research questions as well as achievement of the research aim and objectives. Furthermore, considerations such as time, finances, and extant literature available should influence the decision as prescribed by Saunders *et al.* (2019). Following that, researchers usually choose their technique based on the nature of their research. However, a researcher can blend approaches and use quantitative as well as qualitative procedures (Greene, 2008), or use distinct quantitative or qualitative methodologies (Saunders, Lewis and Thornhill, 2019). In essence, researchers have the option of using a single method (quantitative or qualitative) or a combination of methodologies, and thus a mono-method study employs only one method, whereas a multiple-approaches study uses numerous methods (Azorín and Cameron, 2010). Even though the mixed approach method of research is a flexible technique in which the research design is defined by the researcher's goals rather than any preconceived epistemological positions (Muijs, 2004), the researcher has opted for a mono-method approach due to the specificity of the RQs and the interview informants being a homogeneous group.

Selecting the research method

As outlined in Table 3.2 the qualitative research approach ascribes to explore phenomena, utilize semi-structured interviews, describe experiences, and collect field data in the form of recorded audio or video (Mack, 2005). Having this in mind, the overall research approach of the present Thesis will constitute qualitative research that is inductive and exploratory in nature, the main reason for this being that a qualitative researcher considers social reality as the result of social connections. Qualitative analysis is exploratory in the sense that it aims to pose research questions, and it is inductive in the sense that it tries to infer answers to these questions through examining social interactions. Several meanings and conceptions are

produced throughout social contact, which are construed while having in mind the context, the surroundings, and the participants in these interactions. Therefore, the initial implication of using qualitative approach in the present Thesis represents the endeavour to disclose these subjective viewpoints of e-learning instructors that are being created as a result of them engaging in social contact through the medium of e-learning courses. As a consequence, due to these important reasons, this study adheres to a qualitative technique. The researcher's philosophical stance is CR, and combining the use of abduction, as well as the essence of the RQs and the research's main goal, make this study more easily approached in a qualitative manner. Abductive research is a good strategy that complements CR since it provides for a more detailed image of the experience, which is normally difficult to accomplish with qualitative approaches (Ryan *et al.*, 2012). CR is made up from several methodologies, and the precise one to be used in a study must be selected with care, based on the type of the investigation, as per Easton (2010).

Following this, the applied research method will adopt an abductive qualitative approach towards examining instructors' views on the e-learning industry, and the associated research technique will be in the form of qualitative research interviews. Therefore, this study uses a mono-qualitative method, having stated that it is a qualitative study based on interviews.

Justification of using the selected research method

The selected research method for the present Thesis entails empirical investigation of extant phenomena in real life, including data gathered from multiple sources. A qualitative research approach is useful for research strategies, which as defined by Robson (2002, p. 178) *"incorporate an empirical investigation of a particular current event within its real-life setting employing several sources of data"*. If a researcher is looking to attain a detailed comprehension of the research setting, the utilization of qualitative research methods such as interviews represent an excellent research technique. Furthermore, the selected strategy will be of particular relevance to utilize if the researcher wants to have a complete understanding of the research background and methodology (Morris and Wood, 1991). The selected method can also provide answers to 'how?', as well as 'what?' and 'why?' inquiries, though the survey strategy conversely is primarily concerned with the 'how?' and 'what?' questions. In management research, studies based on the CR methodology are particularly beneficial (Ryan *et al.*, 2012), and as a result of the foregoing, the selected research methods are entirely compatible with the CR philosophy paradigm adopted by the researcher in the present study.

Additionally, inductive reasoning is often acceptable for such research methodologies (ibid.), and similarly, because this study is largely based on inductive research reasoning, this provides yet another reason for the selected study method to be clearly suited for the purposes of the present Thesis. Qualitative studies represent a fine research approach since they offer important research opportunities (Mack, 2005) and they have been a great option in terms of qualitative techniques in the area of management in particular as these studies are commonly used by researchers because the method's inherent elasticity is well suited to the investigation and discovery of complex phenomena. The chosen study method aids in the development of a thorough comprehension of qualitative research findings, and explaining this further, Robert K. Yin (2015) has emphasized the necessity of employing a qualitative approach because it is the foundation for any examination into a current scenario in order to gain an improved comprehension of the issue and the respondents' perceptions towards it. In actuality, a thorough exploration and description of the perceptions of e-learning instructors in HEIs are precisely the present study's primary goals.

Therefore, a qualitative research approach is required due to the essence of the themes covered by this study. The current Thesis engages in examining the perceptions of e-learning instructors towards the management of e-learning CSFs and barriers and also the eventual acceptance or rejection of an e-learning system by instructors. The researcher is not a supporter of the view that, while exploring perceptions, an absolute truth exists since perceptions are subjective in nature. People's feelings are frequently mixed and ambivalent, even if one emotion dominates their experience (Pratt and Doucet, 2000) and as such, perceptions are socially created, include an extensive range of life experiences, and are flexible as well as interpretive. To put it another way, perceptions need not be predetermined, frozen, or coerced within precise structures that researchers find useful (Fineman, 2004). As a result, the author does not use a quantitative technique, preferring instead to be more dynamic and to interact closely with the informants, while subsequently interpreting and describing in detail the findings in order to construct the resultant theory.

Consequently, as Chapter two "Literature Review" has shown, there is more need for qualitative research in the area of e-learning. Exploratory qualitative research in the form of in-depth interviews could shed more light on the subject, thus enabling more meaningful prioritization and convergence of e-learning CSFs from the instructors' perspective. Furthermore, qualitative research has the potential to generate a more profound understanding

of the e-learning experience (Alhabeeb and Rowley, 2018). This notion is supported by Cherry and Flora (2017), according to whom, with the use of focus groups or interviews, further qualitative research might be undertaken to obtain extra information from e-learning instructors, allowing for further investigation into variables that serve to increase online course effectiveness. Examining things from the perspective of e-learning implementation, Daniela, Visvizi *et al.* (2018) clearly acknowledge the fact that currently, there are significant barriers to successful e-learning implementation that HEIs are faced with, and that these definitely need further analysis by means of focused qualitative studies to be performed in the future. This extant need, combined with the fact that the researcher is not attempting to test a hypothesis through the present research, as well as with the arguments in favor of qualitative research laid out earlier in this section, has led the researcher to opt for the methodological choice of in-depth semi-structured interviews. The researcher will have the opportunity to shed more in-depth understanding of the phenomena that shape up the perceptions and opinions that instructors in Cypriot HEIs have concerning e-learning systems by the application of in-depth semi-structured interviews. The choice of qualitative research data gathering technique is considered within the following section of the Thesis, after the researcher outlines the unit of analysis chosen for the present study, as well as the time horizon of the research.

Unit of analysis

A unit of analysis, according to Yin (2015), is the first stage in determining the single unit within a research study, that might represent a person, an organization, a part of the public, a culture, or a process specified by the investigator of the research study. More specifically, in qualitative research, the unit of study is an experience or process, rather than groups or individuals. Qualitative studies therefore explore a variety of experiences; nonetheless, they are interested in the core essence of the experience itself, and not its generalization to a population. Certain research studies concentrate on demonstrating the integral and interpersonal facets of an experience, while others emphasize on demonstrating the experienced event (Polkinghorne, 2005). The main aims of this research are to initially add to existing literature on the detailed comprehension of how individual e-learning instructors perceive the CSFs and barriers towards a successful e-learning process, and subsequently, to explore how these perceptions and associated management support could affect the instructors' willingness to accept using an e-learning system that is adopted by a HEI. Thus, for the aforementioned reasons, the present research employs an analysis unit that represents the process through which individual full-time faculty members build up and shape their

perceptions of e-learning quality. In order for the obtained data to be meaningful, the instructors in the sample should be employed in the largest universities in Cyprus, which has been chosen as the research setting, and should also be teaching online courses on a regular basis. Therefore, the unit of analysis is the individual e-learning instructor's perspective and resultant experience, and this is precisely the vital data that the researcher needs to obtain in order to shed light on the RQs posed by this study.

Time horizon of the research study

A researcher needs to ask themselves whether they want a study to be more comparable to a journal of a collection of pictures depicting events over a span of time, or if it is closer to a precise snapshot depicting events taking place at a specific point in time (Saunders, Lewis and Thornhill, 2019). This is a crucial question to ponder while planning the research and this choice is dependent on the nature of the RQs. In this respect, the term cross-sectional refers to the picture taken at a specific timeframe, whereas longitudinal refers to the journal style of recording events over time (ibid.). Studies therefore differ in how they handle the aspect of time, which is commonly done as per the above categorizations (Hair, Page and Brunsveld, 2019). In business research, the type of studies that are prevalent mostly follow the cross-sectional denomination (Bajpai, 2011) and these gather data from a small group of people at a single time juncture (Gray, 2017). Longitudinal studies, on the other hand, collect data over a lengthy period of time as outlined by Hair *et al.* (2019) and as a result, such study is better suited when the RQs and hypotheses concern the way processes change through time. Considering the above, due to time and resource constraints, the mainstream part of research projects are characterized as cross-sectional, however it could be possible for an investigator to undertake a longitudinal research time approach to analyze progress and variation throughout the course of time, if the funding resources and the available timeframe are more generous (Gray, 2017).

The present study belongs to the cross-sectional type of research studies with all interviews taking place between May 2022 and October 2022. This is because the setting focuses on capturing contemporary perceptions of e-learning instructors within the current global cultural dimension where the onset of the COVID-19 pandemic has put on a lot more pressure on HEI's to offer most of their courses online, and all stakeholders such as students, instructors and management have all had to adapt to the new status quo very quickly (Alqahtani and Rajkhan, 2020; Thanasi-Boçe, 2021). Also, because the present research study does not focus on

investigating alterations in e-learning systems users' perceptions over an extended period of time, it has been determined that a longitudinal study could not be able to add value. Furthermore, the RQs in the study are cross-sectional by definition and are not attempting to look at how the phenomena under inquiry develop and change over time. Finally, because this is a thesis that must be finished within a specific timeframe, as well as taking into account the researcher's financial limits, a cross-sectional study time horizon was determined to be the most appropriate.

3.3 Research data gathering technique

Several data gathering techniques that can be employed in research studies, as per Eisenhardt and Graebner (2007), include surveys, archive data, interviews, records, ethnography, Delphi studies and observations. It is vital to state, however, that a specific technique is not always superior to a different one (Li, 2014). The present study's aims, as well as the benefits and drawbacks of each strategy, are used to determine which data gathering technique to use (ibid.), and the author outlines the key data gathering techniques used in qualitative research below:

Qualitative research data gathering techniques

- **Interview data gathering technique:** An interview is a conversation conducted between two people, the interviewer and the interviewee and the purpose is to obtain information and understand issues relevant to the research project (Gillham, 2005). Semi-structured interviews will be conducted as they allow a degree of compliance with the collection of data from all participants, while allowing individual participants to raise unique issues (Adekola, Dale and Gardiner, 2017).
- **Focus group data gathering technique:** Focus groups are group discussions exploring a specific set of issues. The group is 'focused' in that it involves some kind of collective activity. Crucially, focus groups are distinguished from the broader category of group interviews by the explicit use of group interaction to generate data (Barbour and Kitzinger, 1999).
- **Delphi method data gathering technique:** Delphi inquiries are group processes that could explore two sides of the negotiation of reality with regard to a specific occurrence (Linstone and Turoff, 2002).

To obtain an improved knowledge of the situation and to gather the pertinent information to satisfy the RQs, the researcher must pick which approach or methods to use. To obtain trustworthy and accurate information for this study, the researcher has chosen semi-structured interviews as a qualitative technique for acquiring the primary data. The key rationale for choosing this particular technique, is to obtain more relevant and detailed data and furthermore, this technique appears to be appropriate for analyzing the RQs as well as achieving the study's ROs, as it offers numerous advantages in the particular context. The author will address these advantages in the next section of the Thesis and will subsequently outline the rationale for selecting the specific data gathering technique of semi-structured interviews, the interview protocol that was designed, the study's sample selection method, and the pilot studies that were carried out.

3.3.1 Semi-structured interviews

Interviews may be described as the process of asking questions to people who have expertise concerning the topic under investigation (Snow and Thomas, 1994). In comparison to survey type questionnaires, qualitative research interviews allow for greater flexibility through their format and are more receptive towards comprehending what the interviewee considers to be more important and pertinent to the research topic (Alvesson, 2003). As a result, the process of interviewing respondents often necessitates less engagement with the environment as compared to observations, allowing for greater objectivity and efficiency in acquiring empirical data whilst ensuring the broadest possible knowledge is obtained (ibid.).

According to Mack (2005, p.29) *"in-depth interviews are one of the most common qualitative methods. One reason for their popularity is that they are very effective in giving a human face to research problems"*. In-depth interviews can be described as a qualitative data gathering technique that entails performing thorough personal discussions with a limited sample of informants with the goal to gain an understanding concerning their perceptions on a certain subject, system, or issue (Boyce and Neale, 2006). Having said this, the researcher's goal to blend structure and flexibility should be the first and foremost crucial aspect for consideration, towards conducting an effective in-depth interview. This would ensure that the main benefit of in-depth interviews, which is their ability to deliver more thorough information than remaining data gathering techniques like surveys, will be truly obtained by the researcher. In this manner, the researcher is also assisted with answering the specific RQs of the present study, because

in-depth interviews could have the capacity of creating a more casual setting in which to gather data as people might feel more comfortable having a chat than filling out a detailed survey about a particular issue (Le, Janssen and Wubbels, 2018).

In most cases, interviews could be either structured, unstructured, or somewhere along this spectrum, and these are termed as semi-structured. Structured interviews are simpler to analyze, but the data they generate isn't always as "rich" as unstructured ones. According to Lewis *et al.* (2003), while conducting unstructured interviews, investigators will mostly have a general idea of the topics they want to study, and interviews will typically be driven by an interview guide or schedule that outlines the main themes and areas to be discussed in the course of the interview. In-depth interviews that are semi-structured or unstructured allow the researcher to "probe" replies by requiring informants to further develop their replies in greater depth. This is advantageous since the researcher follows an interpretivist epistemology, which emphasizes the importance of realizing the interpretations that participants assign to various features (Saunders, Lewis and Thornhill, 2019). In-depth semi-structured interviews are therefore instrumental towards gaining insights about individual perceptions, conversely to, say, obtaining an understanding of certain group communal norms, where focus groups might be more applicable. They provide a viable tactic to encourage respondents to share their personal feelings, beliefs, and past encounters in a way that predisposes a qualitative approach. They too provide researchers with a chance to learn about how people understand and manage the world around them (Mack, 2005), which is a very appropriate methodology for the study's selected research setting. This is the main initial reasoning why the researcher chose to conduct semi-structured interviews rather than focus groups. The relevant advantages of conducting in-depth interviews for the particular research setting of the present study, are outlined in Table 3.3 below.

Table 3.3: Strengths of in-depth interviews versus focus groups (Source: Mack, 2005)

	Appropriate for	Strength of method
Interviews	Eliciting individual experiences, opinions, feelings	Elicits in-depth responses, with nuances and contradictions
	Addressing sensitive topics	Gets at interpretive perspective, i.e., the connections and relationships a person sees between particular events, phenomena, and beliefs
Focus groups	Identifying group norms	Elicits information on a range of norms and opinions in a short time
	Eliciting opinions about group norms	Group dynamic stimulates conversation, reactions
	Discovering variety within a population	

As a result, the interviews in this study are one-to-one, conducted online, and semi-structured, and these have been picked as the appropriate data-gathering technique for a variety of reasons. For starters, interviews have been selected since they enable the investigator to probe the phenomenon in greater depth by allowing immediate contact and dialogue with the informants (Snow and Thomas, 1994). This method allows the subjects to more easily consider and externalize their opinions, feelings, and past encounters (Yin, 2015), and the researcher can duly access raw data in a highly communicative manner rather than through a faceless and cold method like closed surveys. Accordingly, as stated by Snow and Thomas (1994), should a researcher wish to access more private and delicate information, face-to-face semi-structured interviews are an apt method that may be used. The researcher normally ascribes to a list of questions and themes to cover and analyze when performing a semi-structured interview to obtain data. The questions' order and themes may differ from one interview to the next, and additional questions may appear in the process (Saunders, Lewis and Thornhill, 2019). A semi-structured interview research is thus classified as a qualitative research interview (King, L. A., 2004) and is thereafter an appropriate technique for the present study, while Saunders *et al.* (2019) have asserted that it can also be employed in quantitative studies.

The present study therefore benefits significantly from the use of in-depth semi-structured interviews. Because this style of interview allows the researcher to address certain subjects and to utilize further questioning throughout the interviewing process, vital and detailed data for studying the topic can be gathered. It is possible that with semi-structured interviews, the conversation might lead to certain topics or places that the researcher hadn't considered

previously, but that turn out to be important in the setting of the investigation (Saunders, Lewis and Thornhill, 2019). In a similar vein, these authors point out that in exploratory studies, a semi-structured interview is beneficial because it adds context to the data. Finally, and perhaps most crucially, semi-structured interviews could serve to reinforce research carried out in a localist setting according to Sandy and Dumay (2011), and this classification is useful to the researcher since the study is focused on the local Cypriot HE e-learning market.

Subsequently, since the present research looks at the perceptions of HEI instructors regarding the effect of management actions in handling e-learning CSFs and barriers to implementation, a topic which could affect instructors' eventual acceptance or rejection of an e-learning system, the chosen technique of data gathering appears to be the most suitable. Thereafter, interviews conducted within the present study are carried out by applying a semi-structured format that enables subjects to freely open up concerning their views and sentiments. The interview questions have been tailored around the precise study topic as well as its main aim, and the researcher will carry out semi structured interviews with individual informants representing the e-learning instructors stakeholder group in Cypriot HEIs. The interviews will serve to go through the research topic in greater depth and to urge them to describe what they hope to get out of a well-designed online education system. To achieve this end, the interviews should include a sufficient number of open-ended questions to facilitate a constructive discussion, and the researcher will ensure to record and transcribe them after informants have given their consent.

A data collection technique that employs semi-structured interviews fulfills the demands of the current research, and the researcher will aim to fully comprehend interview results while having in mind that these are being attained through a socially constructed environment. Adopting this stance would enable the researcher to effectively attempt to comprehend the pertinent social events and phenomena that are being created as a result of university faculty teaching in an online setting. A key goal of the present research is to better understand the phenomenon of instructors' perspectives within the HEI e-learning education setting and as such, the adopted strategy and viewpoint would allow the researcher to investigate the more difficult situations within this social setting, from several theoretical angles. In order to assist with the process of thoroughly grasping the information received by the researcher, each participant is viewed as a unique instance in this study, with various replies based on his or her

point of view and social environment, allowing crucial conclusions regarding their individual perceptions to be drawn.

It should be noted that there are researchers ascribing to quantitative methodologies who argue that qualitative data obtained through interviews is far too subjective (Qu and Dumay, 2011). As a result, meticulous organizing and planning activities are needed in developing the interview protocol. A well-designed interview with effective interaction between the subjects and the investigator can pinpoint valuable facts (Saunders, Lewis and Thornhill, 2019), and a well-prepared questionnaire is essential for attaining good communication. These are the key driving factors that the researcher has considered while attempting to develop a suitable interview protocol for the study.

Developing the interview protocol

Although group interviews are sometimes used in research, the majority of qualitative interviews happen to be one-on-one or to be attempting to explore interactions between a pair of individuals. Research interviews, contrasting with surveys and official investigative interviews, are frequently not rigidly structured. Despite that, the investigator should be aware beforehand of the experiences, attitudes, beliefs, perspectives and values they would like the informants to be able to describe. Towards achieving this goal, the researcher would frequently have written out questions (or protocols) for the informants to answer (Polkinghorne, 2005). It could be stated that *"a researcher's interview protocol is an instrument of inquiry - asking questions for specific information related to the aims of a study"* (Patton, 2015, as cited in Castillo-Montoya, 2016, p.813) and it is also a tool that predisposes effective discussion concerning a specific issue, that could be a person's life, experiences or ideas (Castillo-Montoya, 2016). It must be taken into account however, that interview protocols mostly describe the exterior nature of the interview format. Time, questions, and participant management are all aided by interview protocols however, the protocols themselves don't help much in terms of connecting realism foundations with the production of rather highly specific and suitable interview questions (Manzano, 2016, as cited in Brönnimann, 2021). When the number of interviewees is not too large, the interviewer should create an interview protocol that ensures among others, that the interviewee's personal information is kept private (Qu and Dumay, 2011).

An interview protocol based on semi-structured interviews commonly comprises by a mix of closed and open-ended questions (Baker and Foy, 2012) and both these types of questions have been adopted for the requirements of the present research. At the outset of the interview process, some basic concepts are addressed mostly to set the scene and break the ice, with an impromptu discussion following as this allows for an initial exploration of the research issue through the adoption an informal human approach with the participants. This strategy is known as the interview guide approach, and it is commonly chosen by investigators as a starting point for an exploratory study (ibid.). Then comes a series of predetermined open-ended in-depth, questions and that is due to the fact that in exploratory and qualitative research investigations, unstructured and open-ended inquiries are recommended (Baker and Foy, 2012; Saunders *et al.*, 2012). Furthermore, open enquiries are recommended since respondents can freely debate and thus externalize and share their thoughts and sentiments as they see fit to express themselves. Because informants are expected to speak about their own perceptions and the quality of support that they feel they receive from HEI e-learning management, which are delicate topics, open-ended types of questions are more suited to the Thesis' ROs and RQs.

The open-ended questions in this study have been pre-planned and come under the guise of a specified agenda of topics that the author must address (Li, 2014). Furthermore, despite the fact that a precise order of questions exists, the researcher is not obligated to rigidly abide by it; the order may shift, and additional questions may be introduced based on the demands of the discussion (ibid.). This occurs because every reply is individual and personalized, making each one of them extremely valuable to a researcher (Saunders, Lewis and Thornhill, 2019). Thus, the researcher would also intend to utilize probing questions throughout the interviews. Probing questions are useful to examine in more detail informants' replies that are substantial to the areas under examination. They could usually be formulated like open-ended questions; however, they are purposefully targeted by having a specific emphasis or direction in mind.

A researcher can draw on study inquiries and materials from prior literature which looks into comparable topics (Baker and Foy, 2012) and as a result, particular sources were employed to structure the interview protocol for this research, as shown in the table below (Table 3.4). It is notable that certain issues have never been explored by other researchers, thus the researcher must develop them. Hence, the interview questions aim to research what the interviewees perceive to be true from their own perspective, however, they were also encouraged to reply

what they believe might be true in general, and what could arise as a result of consensus that might be perceived to exist amongst the key users of e-learning systems.

The open-ended interview questions were selected and prepared precisely to put the above ideas into practice. In addition, based on the responses of the informants, further questions would be asked if appropriate and this was done to give the opportunity to key informants to have a more in-depth discussion on important topics in a more appropriate setting. Furthermore, the researcher believes that it is important to allow the respondents to discuss themes that are pertinent, however that might have not been expressly addressed in the pre-planned layout of the interviews. In addition, because this is an exploratory study besides being a descriptive one as well, such deviations from the interview agenda were permitted. As a result, the researcher has been able to better understand numerous nascent matters related to instructors' perspectives on the more subtle areas of the use of e-learning in the HE industry, thanks to the adopted interview protocol. This is presented in Appendix V.

Table 3.4 below outlines the relevant links between each interview question and the study's ROs and RQs, as well as the literature sources that have been utilized for the formulation of the IQs, being clearly distinguished.

Table 3.4: Interview questions, research objectives, research questions and literature sources (Source: Author's own)

Interview Questions (IQs)		Research Objectives (ROs)	Research Questions (RQs)	Literature Sources of Interview Questions
IQ1	Could you please share some information about yourself such as: your age, nationality, professional background, title, and how long you have been teaching online courses?	Ice-breaker, background and description questions		N/A
IQ2	Share your story of how you began teaching online	RO2	RQ1	N/A

	courses. What do you believe generally about the use of e-learning in higher education?			
IQ3	When was the last time you taught online? What did you do and how would you describe the experience?	RO2	RQ1	N/A
IQ4	Are there any elements that help you to improve your online experience and enable you to teach more effectively?	RO1, RO2, RO5	RQ1	(Graham, 2018); (Miranda *et al.*, 2017); (Naveed & Ahmad, 2019); (Naveed *et al.,* 2020); (Van Wart *et al.,* 2020)
IQ5	Are the following elements important in helping to achieve e-learning effectiveness, what are their positive effects, and how can they be attained?			
	a) learning quality and environment			(Almas *et al.*, 2021); (Choudhury & Pattnaik, 2020); (Muller *et al.,* 2020)
	b) proper support and training conditions for instructors			(Lee *et al.*, 2019); (Pedro & Kumar, 2020)
	c) instructional design			(Alhabeeb & Rowley, 2017); (Ashfaq *et al.,* 2017)
	d) instructors to view the e-learning system as useful and easy to use	RO2	RQ1a	(Chavoshi & Hamidi, 2019); (Cherry & Flora, 2017); (Choudhury & Pattnaik, 2020)
	e) technology infrastructure			(Gupta *et al.*, 2020); (Uppal *et al.*, 2018)
	f) the characteristics of the instructor			(Alhabeeb & Rowley, 2017); (Farid *et al.,* 2018); (Kordrostami & Seitz, 2021)

	g) the characteristics of the students			(Alhabeeb & Rowley, 2017); (Thanasi-Boçe, 2021)
	h) the course content			(Ahmad *et al.,* 2018); (Jeong *et al.,* 2019); (Naveed *et al.,* 2020)
	i) the ease of system access			(Ahmad *et al.,* 2018); (Barclay *et al.*, 2018); (Orozco-Messana *et al.*, 2020)
	j) social factors/interactions			(Olasina, 2019); (Chavoshi & Hamidi, 2019)
IQ6	Have you faced any issues, problems, difficulties or barriers while teaching online? If yes, can you give me some examples and describe them?	RO1, RO2, RO5	RQ1	(Ahmad *et al.,* 2018); (Ali, S. *et al.*, 2018); (Almas *et al.*, 2021); (Msomi & Hoque, 2018)
IQ7	Have you faced any of the following issues, what are their negative effects, and how can they be reduced?			
	a) Limited HEI resources			(Daniela *et al.,* 2018)
	b) Lack of administrative support			(Al-Hunaiyyan *et al.*, 2017); (Casanova & Price, 2018); (Pedro & Kumar, 2020)
	c) Lack of technical support	RO2	RQ1b	(Ali, S. *et al.*, 2018)
	d) Lack of student motivation, participation and engagement			(Al-Karaki *et al.,* 2021); (Berry, 2019); (de Metz & Bezuidenhout, 2018)
	e) Lack of personal interaction between instructors and students			(Cherry & Flora, 2017)

	f) Lack of instructor IT competencies			(Kordrostami & Seitz, 2021)
	g) Increased workload			(Cherry & Flora, 2017)
	h) Inadequate incentives, compensation and promotion opportunities			(Luongo, 2018); (Meriem & Youssef, 2020)
	i) Non-inclusion in decision making			(Singh & Hardaker, 2017)
	j) Resistance to change			(Ives & Walsh, 2021)
IQ8	What does your institution do to help you teach more effectively?	RO3	RQ2a	(Al-Jedaiah, 2020); (Al-Karaki *et al.,* 2021); (Bryan *et al.*, 2018); (Singh & Hardaker, 2017)
IQ9	What does your institution do to help you overcome the issues, problems, difficulties or barriers that you face?	RO3	RQ2b	(Al-Jedaiah, 2020); (Al-Karaki *et al.,* 2021); (Bryan *et al.*, 2018); (Singh & Hardaker, 2017)
IQ10	a) Has management support affected your willingness to teach online courses in the past? For example, in the past were there more barriers or less supporting elements at your institution? b) What happened in cases where the institution took actions to overcome barriers or introduce supporting elements?	RO4	RQ2, RQ3	(Al-Jedaiah, 2020); (Al-Karaki *et al.,* 2021); (Bryan *et al.*, 2018); (Singh & Hardaker, 2017); (Barclay *et al.*, 2018); (Chavoshi & Hamidi, 2019); (Choudhury & Pattnaik, 2020)
IQ11	Do you think that your online teaching experience might be influenced by the amount of effort your institution makes to: • help you teach more effectively and	RO4, RO5	RQ3	(Barclay *et al.*, 2018); (Chavoshi & Hamidi, 2019); (Choudhury & Pattnaik, 2020)

	• to help you overcome barriers that you face? Why or why not? Can you give me some examples from your personal experience?			
IQ12	What else would you want to see done by your institution in order to improve your online teaching experience, and to be more enthusiastic in terms of e-learning?	RO4, RO5	RQ3	(Barclay *et al.*, 2018); (Chavoshi & Hamidi, 2019); (Choudhury & Pattnaik, 2020)
IQ13	Would you like to add anything in conclusion?			

3.3.2 Research sample approach

Prior to conducting the actual interviews, the researcher carefully considered the sampling approach and sample size that would be followed throughout the empirical investigation stage. In doing so, the researcher reviewed extant theory, according to which two key types of sampling approach exist, specifically probability and non-probability sampling, which themselves involve numerous categories of sampling procedures (Reynolds, Simintiras and Diamantopoulos, 2003). In probability samples, the chance, or likelihood, for every item to be selected from the population is clearly acknowledged, and it is typically equal in every circumstance. This suggests that the researcher can address research questions and accomplish objectives that require statistical approximation of population parameters from a subset. As a consequence, surveys and experimental research methodologies are typically associated with probability sampling (Saunders, Lewis and Thornhill, 2019). These methods could include simple random or stratified sampling, and they allow statistical inferences since each instance from the sample has a higher-than-zero opportunity of getting chosen and quantitative research strategies usually fall within this group. Non-probability sampling approaches which involve methodologies such as purposive, judgmental and convenience sampling, on the other hand, have no way of knowing how likely it would be for each unit to be chosen from the whole population (ibid.).

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Only a part of the total population is chosen in a study that adopts qualitative research because, even if it were possible, collecting data from everyone in a community is not necessary to get accurate results (Mack, 2005). The ROs of a study as well as the population's characteristics like size and variety, dictate who and how many persons to choose in situations where a study follows the qualitative research approach (ibid.). Additionally, *"For qualitative researchers, it is theoretical issues and the purposes of the research question that guide the sampling procedure, rather than statistical criteria"* (Glaser and Strauss, 1967, as cited in Bryman, 2004, p.750). In qualitative studies, sampling processes are not as rigidly prescribed as in quantitative ones; however, some researchers may find this sampling flexibility puzzling, and errors may arise; as a result, sample decisions are mostly based on the extent of feasibility they create in terms of developing appropriate and detailed information (Coyne, 1997).

In the case of the present study, and since this method is commonly used in qualitative investigations, the researcher has picked the key informants that will comprise the sample with the use of arguments that are mostly subjective (Saunders, Lewis and Thornhill, 2019). Therefore, whilst selecting the key interview informants, the researcher has adopted the purposive sampling strategy, which falls under the non-probability sampling category. Purposive sampling represents some of the quite frequently encountered sampling methods being utilized, and it categorizes participants based on pre-determined criteria that are connected to the research issues explored through the conceptual framework of the study. The sample size is decided by the available resources and time, and also by referring to the objectives that the research topic hopes to meet, and the exact size may or may not be set before actually gathering the data. Once the interviews have begun taking place and data is in the process of being collected, theoretical saturation would denote the moment in gathering data, when no further facts contributing towards the comprehension of the study problems emerge, and this is the point when the final size of a purposive sample is usually calculated. Purposive sampling is most effectively applied while data review and analysis take place concurrently with the data collection procedures (Mack, 2005) in order to facilitate the actions described above.

The researcher thus acknowledges the fact that the ROs and RQs of the present Thesis will be best satisfied through pursuing the purposive sampling approach (Silverman, 2013), since what the researcher is interested to obtain is detailed information relative to the perceptions of subjects towards a particular process. Working towards this, and according to Patton (2005),

purposive sampling is the process of selecting information-rich examples based on the research goal of a certain study. Consequently, instead of focusing on empirical generalizations, the process of selecting instances based on the purposeful intentions of the sample should lead to choosing respondents through whom deep and meaningful perceptions and considerations may be gathered (Dubois and Araujo, 2007). To put it another way, the purposive sampling reasoning for choosing the participants in qualitative research, involves use of the logic of replication in conjunction with the selection of cases that can provide deep information and primarily arises from the preliminary conceptual framework priorly developed (Perry, 1998). Purposive sampling also contributes to the findings' robustness and applicability (Wagner, 2006) by exploiting its capability to be combined with complementary methodological tools in order to create the context-sensitive sampling agenda required for the present study. Having outlined the above issues, the sampling logic of the research project was pervaded by purposive sampling principles, highlighting the requirement for a basis of selection of key informants which is guided by extant theory as well as deliberation of circumstantial idiosyncrasies (Poulis, Poulis and Plakoyiannaki, 2013). As such, the participants were chosen using a purposive sample strategy that attempted to utilize a set of selection criteria, and using these criteria, the researcher was able to select the specific participants, described as instances, who were able to provide rich, meaningful information needed for the phenomenon being examined, thanks to the use of purposive sampling.

As a result, purposive sampling appears to be appropriate for analyzing the study's research questions and objectives. This method is used since it results in meaningful and in-depth data and, according to Saunders *et al.* (2019), requires a researcher to use their judgment to choose cases that will contribute most effectively towards answering the relevant RQs and thus fulfill the ROs. While it is not representative of the entire population, in the context of the current research topic this type of sample approach allows the researcher to gather detailed information that is necessary for exploring the study's RQs, by using proper judgment. That is why purposive sampling is also referred to as judgemental sampling (Patton, 2005) and the interview participants were chosen initially based on the researcher's judgement, and also by using the following key purposive sampling criterion: their years of experience with teaching online courses in a higher education setting. This was also complemented with further selection criteria, as described below.

Criteria for selection of interview participants

As previously outlined, the framework of the present study involves a thorough exploration of the perceptions of instructors who teach e-learning courses, and the unit of analysis is the individual perceptions of faculty members in universities. The researcher has opted to examine e-learning instructors' perceptions, since it has been outlined in Chapter 2, Literature Review, that the instructors' view and acceptance are deemed to be crucial for successful delivery of online courses in a HE setting, however instructor perspectives seem to be underrepresented in extant literature (Kumar *et al.,* 2019). Following this, the selected faculty members were chosen based on a certain set of criteria. Firstly, each selected faculty member should be a PhD holder, since the researcher is interested to obtain the e-learning instructor views for HE courses that are taught at the highest level of tertiary education and would thus require to be taught by a PhD holder. This is due to the fact that an ever-increasing number of HE students are starting to pursue alternative learning routes and to enjoy a far more varied higher education environment (Volungevičien, Teresevičien and Ehlers, 2020), and this necessitates availability of instructors who hold a PhD title in order to satisfy the increasing demand. Therefore, obtaining the views of instructors who suit this profile is of utmost importance for the purposes of the current study. Secondly, the key informants should be full-time faculty in a Cypriot university due to the fact that full-time faculty members are more closely involved with the management of the delivery of e-learning courses in their respective Schools. Despite this being true, extant literature has shown that HE faculty believe they are being excluded from crucial decision-making concerning the implementation and acceptance of e-learning in their institutions (Singh and Hardaker, 2017). However, consultation and engagement of full-time faculty members would help address resistance and confusion (Ives and Walsh, 2021) in the provision of online courses. Thirdly, the faculty member must have at least three years' experience in teaching online courses as this would grant more validity to the perceptions and views obtained from informants. Instructors with knowledge, skills, competencies in distance education and experience in online learning are essential (Ives and Walsh, 2021) due to the fact that these instructors "*who teach online are at the forefront of implementation and play a critical role in online student success*" (Pedro and Kumar, 2020, p.50). To this end, it has been further shown by Cherry and Flora (2017) that instructor satisfaction with e-learning course interaction increases moderately as the number of years teaching e-learning courses increases. It should be noted that, the number of years teaching e-learning courses is not actually directly linked to the level of instructor satisfaction with delivering e-learning courses or with how they perceive institutional support (Cherry and Flora, 2017). Therefore, the researcher has deemed

it appropriate that faculty members with at least three years of teaching experience with delivering online courses would be in a position to deliver the most reliable replies to the interview questions.

Purposive sampling allows a researcher to gather relevant data, which is very useful in the HE market, which is a very dynamic and fast-paced industry especially after the introduction of e-learning courses due to the increased demands placed on distance learning by COVID-19. HEIs are in dire need of such solutions especially with the demands to keep up with rapid changes in the educational environment, as imposed by the COVID-19 pandemic and the introduction and implementation of e-learning is still a new concept in less developed countries, especially when considering the need to overcome the challenges imposed by the COVID-19 crisis (Thanasi-Boçe, 2021). Researchers aim to discover informants who possess the experience or know-how to supply the essential and appropriate data, which would fulfill the knowledge gap perceived by the researcher in relation to the process being examined (Bernard and Bernard, 2013). For this reason, within the present research, just the HE faculty that fulfill the desired profile requirements and have sufficient experience with teaching online courses can deliver the necessary information and satisfactorily respond to the RQs of the study. As the phenomenon which is being examined within this Thesis is the way that e-learning instructors perceive effectiveness factors, barriers and associated supportive management actions to address these, the faculty members that do not teach online courses are not in a position to deliver rich data for the present research. As a result, the purposive sampling approach and the criteria implemented for choosing the interview participants assisted the researcher in selecting the correct key informants who would be in the best position to assist the researcher with their knowledge and experience, in obtaining answers to the RQs and meeting the study's objectives.

Therefore, the list of the participants' criteria for the present study is depicted below:

1) PhD holder

2) Full-time faculty in one of the six largest Cypriot universities in terms of online student enrolments

3) At least three years' experience in teaching online courses

In addition to the three key selection criteria outlined above, the researcher further addresses the logical flow and rationale of the process that has been followed for the purposive selection and determination of the sample population of the present study. Namely, as showcased in

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Chapter 1, the Cyprus HE market is on the rise in recent years with increasing enrolments due to positive student perceptions, and the decision of HEI's to invest in wider provision of e-learning courses. For this reason, the Cyprus HE sector possesses the favorable conditions and a sufficient number of full-time faculty members who teach e-learning courses, and these conditions would make for a meaningful research setting in which sufficiently rich data could be obtained. Further to that, the researcher has focused on full-time faculty employed in Cypriot universities rather than in the remaining HE institutions, since as shown in Chapter 1, accredited universities in Cyprus account for an overwhelming 76% of student enrolments as per the latest CYSTAT figures available for the 2018/2019 academic period. Additionally, the researcher has opted to approach faculty members who are involved in teaching both undergraduate and postgraduate e-learning courses for the main reason that in the Cyprus HE sector, the majority of the students registered for e-learning courses do so at the postgraduate level. Further to that, such selection enables the researcher to be able to draw comparisons between faculty perceptions of the e-learning courses at the undergraduate as well as at the postgraduate level. Moreover, the vast majority of the faculty members selected as informants for the present study are involved in teaching e-learning courses in Business Management and Education, since as per CYSTAT figures, in 2018/2019 these two fields account for an overwhelming 80% of the total number of enrolled distance learning students. The researcher has further selected faculty members from both public and private universities on the island in order to properly reflect the spread of faculty being employed in both types of institution and to discern whether any differences in faculty perceptions exist between the public and private institutions. Additionally, to the criteria above, the researcher has selected the informants from the largest six universities in Cyprus in terms of distance learning student enrolments and provision of e-learning courses. This has enabled the researcher to determine whether any notable differences exist between faculty perception towards e-learning courses provision within these most prominent institutions.

To summarize, the key participants in the interviews were chosen based on the set of criteria outlined above. Mainly, every participant who has been picked, needs to be full-time faculty with online teaching experience, employed by one of the top six major universities in Cyprus in terms of student numbers and provision of e-learning courses. Those informants should not be administrative HEI employees, from whom no regular contact with students is required. Even though the administrative employees in HEIs could be involved in the administering and management of e-learning courses, the researcher is interested to also explore the social

implications of instructor-student interactions during e-learning courses throughout the current study. Therefore, HEI management, IT support, experts on e-learning and general university administration employees have been excluded from the sample comprising the key informants for this study. Secondly, the selected participants needed to be full-time faculty members in a Cypriot HEI, as part-time faculty have been excluded due to their lower level of involvement with the management and facilitation of the e-learning courses in HEIs. Thirdly, e-learning experts have not been picked as participants in the study's interviews. This is justified by the fact that even though e-learning experts would be able to provide deep insights into the thematic areas examined by the current research, the researcher is interested to obtain the views of faculty as they are the vessel through which the learning delivery process reaches the students, and thus they have an integral part to play in the proper facilitation of e-learning courses. HEI management have also been excluded since they have the responsibility for properly financing and implementing e-learning systems within their respective HEIs and therefore, are anticipated to give more positive views of the e-learning systems within their universities, since in effect they would be self-evaluating. Also, they might be lacking the relevant level of expertise and personal experiences to be able to offer insight into the details of the study. Students were also excluded since they have been the main stakeholder focus of contemporary literature on online education, and future research calls upon other stakeholder viewpoints to be examined more thoroughly. So, the researcher is attempting a different angle of tackling the main issue, which is understanding of the potential room for improvement of the e-learning systems adopted in the HE sector though the instructors' perspective and acceptance. This new knowledge, once obtained, is also expected to have a knock-on positive cascading effect on online students who are a main stakeholder of e-learning systems, especially if new literature sheds light on how instructor engagement within the systems might be maximized.

The researcher communicated with relevant HEI departments and personnel from among the participating universities in order to pinpoint participants who met the aforementioned traits and requirements. Following that, the researcher contacted the participants by email and phone to confirm their desire to take part in the study and, at this point, the researcher would also re-assure himself once again that the selected participants did meet the study's criteria for selection of the interview informants.

Sample size of key informants

Qualitative interviews, in comparison to quantitative methods, are unable to investigate a large or random sample of people due to the time and effort required, as well as access restrictions (Qu and Dumay, 2011). In terms of the number of interviews, when performing the study's research design, the researcher should be able to approximate the number of subjects to interview. To do so effectively, the researcher takes into account Patton's (2005) claims that there are no standards on the number of participants that should contribute towards a research study that adopts the qualitative approach. This notion is reinforced by Marshall *et al.* (2013) who state that there are no precise sample size guidelines for qualitative research projects in terms of what would constitute a correct sample size. More specifically, and in most circumstances, qualitative sampling does not include a high number of informants, as this may prevent deep analysis and data richness from being obtained (Daymon and Holloway, 2010). However, extant research dictates that especially in case of a grounded theory study for instance, 20 to 30 interviews are sufficient, since the data quality is more important than the sample size or further metrics in qualitative investigations (Creswell and Poth, 2016). When performing qualitative research, there are certain authors, who on the other hand provide more accurate estimates for sample size. According to these estimates, a qualitative research study seldom could reach up to 60 participants, as proposed by de Ruyter and Scholl (1998), and smaller samples of 15 to 40 respondents are the most usual. Creswell and Poth (2016) additionally suggest no more than an overall sample of 12 to 25 respondents. Therefore, a large sample size is not necessary for the present qualitative study, since the researcher places a lot of emphasis on the data quality rather than the sample size itself. Furthermore, instead of merely measuring activities, phenomena and events, qualitative research focuses on comprehending them (Bock and Sergeant, 2002), and a large sample size of interviews would not necessarily guarantee that, to the same high extent that the quality of the discussions is expected to. Additionally, the researcher is not seeking to obtain generalizations from the data acquired, therefore an excessively large sample is not explicitly required. Also, having in mind the time and physical resources available and the fact that each one of the semi structured interviews had a duration of 60 to 90 minutes the researcher had to keep a realistic interviews figure in mind in order to be able to properly conduct the research as intended, and within the timeframes posed.

Thus, according to the abovementioned rationale, the researcher needed to determine how many interviews precisely would need to be conducted with key informants who have been

selected based on specific criteria mentioned in the previous section. The decision of the number of interviews to be conducted was based on the fact that it is consistent with the guidance provided by the various prominent scholars who are widely cited throughout academic discussions revolving around qualitative research (Marshall *et al.,* 2013). Following this logic, aside from the three pilot interviews, the total interviews that were conducted therefore were 20, and this exact final number of interviews was determined by whether or not the findings had reached theoretical saturation based on Eisenhardt and Graebner (2007). According to this notion, once a saturation point is achieved, the data collection process must come to a stop (King, N., 2004). More precisely, when no new dimensions, connections, or pieces of information appeared after conducting 18 interviews, the level of saturation had been reached. Subsequently, the researcher proceeded with two more interviews which didn't yield any new information, nodes, or relationships and consequently, 20 interviews were conducted in total. This represents a typical sample size that is suitable for qualitative research (de Ruyter and Scholl, 1998; Creswell, 2007; Marshall *et al.*, 2013). Large informant sizes are typically avoided in qualitative sampling because they may limit its richness and depth. (Sekaran, 2003; Daymon & Holloway, 2010). Although some readers may be sceptical of the limited size of informants, in-depth interviews make up for this with the rich contextual information gathered (Daymon & Holloway, 2010; Lindebaum & Cassell, 2012). Moreover, having followed Edvardsson (1992), the saturation point was attained at 18 interviews, which further confirms the appropriateness of the sample size.

Sample characteristics

Breaking down the sample characteristics further, this study includes six Cypriot universities (four private and two public), with four participants being chosen from the two largest institution each, and three participants being chosen from the four remaining institutions to address the study's research topics. In terms of the sample's characteristics and demographics, it is worth noting that there were no constraints or limitations on participants' nationality, age, gender, culture, or other factors. Though, when it came to the age parameter, the participants who fit the criteria for teaching e-learning courses were between the ages of 31 and 60 and were almost evenly divided between male (nine) and female (11). Consequently, this study included people from different generations and both genders. The following section offers demographic information for the 20 participants in the sample of this research.

Summary of key informants' profiles

Table 3.5 below outlines the demographic information concerning the profiles of the key informants in the current study.

Table 3.5 Participants demographic information (Source: Author's own)

Participant Number	Age	Gender	Professional Title	Years of Online Teaching Experience
Respondent 1	48	Female	Professor	5
Respondent 2	42	Male	Assistant Professor	4
Respondent 3	35	Female	Assistant Professor	7
Respondent 4	36	Female	Lecturer	6
Respondent 5	43	Female	Associate Professor	7
Respondent 6	31	Male	Lecturer	4
Respondent 7	52	Female	Associate Professor	3
Respondent 8	42	Male	Assistant Professor	7
Respondent 9	43	Male	Associate Professor	8
Respondent 10	60	Male	Associate Professor	10
Respondent 11	44	Female	Associate Professor	8
Respondent 12	37	Male	Lecturer	3
Respondent 13	59	Female	Assistant Professor	11
Respondent 14	44	Female	Assistant Professor	4
Respondent 15	50	Male	Professor	7
Respondent 16	32	Female	Lecturer	3
Respondent 17	46	Female	Assistant Professor	6
Respondent 18	47	Female	Assistant Professor	7
Respondent 19	41	Male	Lecturer	3
Respondent 20	44	Male	Assistant Professor	5

The participant characteristics listed in Table 3.5 above show that this research was successful in achieving significant variation within the sample. The respondents' ages ranged consistently from 31 to 60 years old, with a mean of 44, thus they matched the age ranges described earlier in the chapter. There were an almost equal number of men (9) and women (11) among the

respondents. Additionally, the informants were academics who have experience with online teaching in HE, with an average number of length of online teaching experience of six years. Concerning the respondents' education level, they were all PhD holders, and held academic ranks ranging Lecturer (five informants), Assistant Professor (eight informants), Associate Professor (five informants) and Professor (two informants).

3.3.3 Pilot study

An established method of refining the process of data collection in research, is to conduct a pilot study (Tsanis, 2013) prior to delving into the conduction of the actual interviews. Pilot studies are considered to be a test-run for the genuine data collection process utilized in an empirical research study (ibid.). In conjunction with this, interview protocols used in semi-structured interviews need to be pilot tested prior to them being utilized to gather information. The goal of performing the pilot test is to adjust the interview questions so that it is easy for respondents to answer them, thus enabling a simpler and more convenient data gathering process. It further enables the researcher to evaluate the questions' validity as well as the expected reliability of the data obtained. Overall, analyzing the pilot test at a preliminary stage helps to ensure that the information acquired will allow the researcher to satisfactorily answer the study's RQs (Saunders, Lewis and Thornhill, 2019).

Serving as a test-run, the pilot study allows the researcher to enhance several components of the data collection technique, resulting in better data collection quality (Yin, 2015). As such, there are quite a few benefits that can be obtained by carrying out the pilot test. For instance, the researcher would be able to discern if the recommended procedures or strategies are ineffective or overly complicated, or if study protocols aren't being kept. Inherently, a pilot test helps the researcher collect better information (Merriam and Tisdell, 2015). Furthermore, the investigator can perform a pilot study to reveal any potential practical issues with the research technique and this can assist the researcher in gaining an insight as to the extent of suitability of the RQs, thus enhancing the research's validity (Tsanis, 2013).

As a result, pilot studies are a vital component of the research proceedings because they allow the researcher to not only detect potential protocol issues like reliability and validity matters (Saunders, Lewis and Thornhill, 2019), but additionally to receive feedback and review key points, enhance the understanding of the questions that will be posed to participants, and further

sculpt the interview process (Snow and Thomas, 2004). Pilot studies provide various and substantial advantages, as they can notify the researcher of incorrect or complex topics and they can then eliminate or edit some of the questions, reword or rescale them, or possibly make certain additions that might be deemed necessary (Chenail, 2011). The researcher would also be able to determine if the time required to complete an interview is adequate.

It is important to mention that prior to proceeding with the three pilot test interviews, the researcher approached three e-learning experts for advice and guidance, and for this purpose conducted personal meetings with each one of them. In order to ensure the validity of the questions, an academic expert in the field of e-learning observed the areas focusing instructor perceptions and a practicing e-learning expert observed the e-learning terminologies used in the interview questions. Finally, a business management academic reviewed the CSFs, barriers and management areas. Their feedback and opinions were carefully considered in order to refine the questionnaire before the pilot interviews took place. The motive for selecting these three individuals prior to the pilot testing stage, is due to the fact that each one of them had the relevant expertise to contribute towards validating precise themes of the conceptual framework that the researcher would undertake to investigate. The researcher would be interested to deeply explore e-learning instructors' perceptions towards technical, educational and management aspects, therefore it was vital to bring in these three experts in order to ensure that all these three thematic areas were covered properly. The suggestions given by the experts were truly invaluable and the researcher adopted the majority of those. For instance, the practicing e-learning expert advised that some of the terminologies were too complex and provided suggestions on how these could be simplified without losing their academic essence. He also urged the researcher to ensure to ask the informants to give a lot of examples from their personal experiences in order to verify the information received from them, and therefore to improve its validity and reliability. The academic expert in the field of e-learning advised the researcher to humanize and personalize the questions by suggesting how some of them could be re-worded in order for them to become more approachable and understandable to informants. He also advised the researcher to attempt to minimize the number of closed-ended questions while also increasing the number of open-ended questions and to encourage as much discussion and personal storytelling on the part of informants, as this is what provides the foundation for rich, deep and meaningful data for thematic analysis carried out in qualitative research. The business management academic who reviewed the CSFs, barriers and management areas, inquired as to the definition of CSFs and their difference to merely success

factors. The researcher explained that these had arisen as a result of the systematic literature review that had been carried out, and furthermore CSFs is the terminology that has been ascribed to them by extant literature. The business management expert had some reservations about whether the informants would understand some of the CSFs, and to that end the researcher prepared Table 2.6: E-learning effectiveness CSFs examined through the Thesis' conceptual framework (shown in Chapter 2), which would be used and referred to in case any explanations would be needed for the CSFs by informants. The researcher, in such cases, gave brief descriptions and examples of the relevant CSF by using Table 2.6 and the interview was able to proceed smoothly since the informant would quickly grasp the essence of the question.

Following implementation of the alterations proposed by the experts, three pilot interviews were completed, before moving on to the actual interviews. The researcher approached three e-learning instructors in particular who are university faculty and have at least three years' experience with e-learning courses, to evaluate the adequacy of the data collection procedures, revise components of the final study, and confirm the appositeness of the interview questions. Three pilot interviews are regarded necessary in terms of the amount of pilot testing since prior research suggests that a pilot test should ensure to cover at least 10% of the total size of the sample that will be utilized (Hertzog, 2008). As a result, the three semi-structured pilot interviews were conducted based on the selection criteria as outlined previously, i.e.: with e-learning instructors in higher education who are PhD holders, full-time faculty in one of the six largest Cypriot university and have at least three years' experience in teaching online courses. Given that the researcher has conducted 20 in-depth interviews, the number of pilot interviews is adequate, namely three e-learning instructors who are typical of the population.

Conducting the pilot interviews was a valuable experience not only in terms of being able to observe the reactions and responses of the expected interviewees and assessing the quality and wording of the interview questions, but it also offered additional practical benefits. For instance, the researcher was able to practice notetaking during the pilot interviews, as the technique of apt notetaking would be used as an integral method of recording information during the actual interviews. Despite the fact that the interviews would be video recorded, notetaking allows the researcher to jot down their ideas on the spot, while they are still fresh in their minds, based on information divulged by the informants. This therefore enables the researcher to record, interpret and effectively develop the points shared by the informants on the spot.

The primary goal of the pilot study was to improve the quality of the data collection method for this research project (Tsanis, 2013). As a result, the following are the reflection results from the pilot interviews that were conducted.

Reflecting on the pilot study results

As a result of the pilot studies that were carried out it was determined that some of the terminologies used in the preliminary factors of the Thesis are too complex, especially those covering the area of e-learning CSFs. Therefore, the author consulted again with the three experts that had been approached before the pilot interviews, in order to simplify the terminologies used in the interview questions, while at the same time preserving their essence and relatedness to the RQs posed by the Thesis. This proved to be a necessary step, since the Thesis explores the e-learning domain in detail, and as such goes into quite specific terminologies. Having this in mind, the participants' sample consists of faculty who have been teaching online courses, however they are not e-learning experts specifically. Even though faculty with at least three years of e-learning teaching experience were selected for the purposive sample, the terminologies used had to be simplified and better explained, so as to enable the respondents to provide adequate answers to the interview questions most effectively.

It was also observed that a few of the questions were difficult for all of the pilot participants to understand, and as a result, additional clarifications were required for a few specific issues. In this regard, the pilot interviews aided the interviewer in honing his interviewing skills and, consequently, being able to provide additional explanations to help participants understand the questions during the actual interviews. Similarly, while conducting the actual interviews, the researcher noticed that a small number of informants were hesitant to respond to particular queries such as more precise and individual barriers they might have been facing while teaching online courses, and criticisms they might have concerning institutional actions at their universities, and how these affect them. These few participants would be inclined to give accounts of past personal experiences, however, were unwilling to delve too deeply within their more innate views and feelings concerning some of the more sensitive topics. These issues, however, were observed only in a very small number of respondents and were therefore not detrimental in relation to the research results. In this respect, the researcher utilized the advice received from the experts, as well as from the pilot study participants, to humanize the interview questions even further, and to ask them in a more straightforward, personalized manner, which would make them more appealing for the participants. Therefore, the researcher

was able to come up with a strategy to make the questions more accessible and thorough, and as a result, several questions had been reinterpreted, others were eliminated, and new ones had been introduced in their place. Furthermore, a few of the more elaborate questions were broken down into smaller distinct ones to make them more understandable and easily answerable. Finally, and as a result of conducting the pilot study, the researcher was able to determine how much time each interview would require in real time, which was on average 60 to 90 minutes.

In closing, during the three pilot studies, the focus was on both answering the interview questions and getting feedback from the respondents in terms of the clarity of the questions. The pilots also focused on unveiling information about how cautious or hesitant informants would be in answering the questions, because some of the inquiries concern their institutions' management approach and techniques. The researcher was able to finalize the interview questions thanks to the outcomes of these pilot interviews and he also agreed on the final version of the IQs with the Thesis supervisors. After finalizing the interview questions, the researcher was in a position to carry out the actual interviews with the respondents.

3.3.4 Conducting the interviews

A selection of potential participants was initially assembled through the professional network of the researcher using as a foundation the purposive sampling reasoning and the previously mentioned conditions that were adopted for the proper selection of candidates. The participants that were selected from each university, were personally approached by the researcher through a telephone call or email, after which the researcher would send via email to each participant an interview cover letter (see Appendix III). The cover letter served the purpose of informing participants about the focus of the research study, and addressed concerns over confidentiality and anonymity safeguarding. The researcher's identity was shared with respondents, and how the gathered information would be utilized, the purpose of their contribution, the chief topics to be covered, and the approximate amount of time they should set aside from their personal schedule if they chose to participate. They were also advised of their right to receive the study's findings upon its conclusion. The researcher had also produced a pre-interview briefing form (Appendix IV) that he would refer to at the outset of every interview. The purpose of the pre-interview briefing was to outline that informants' participation is voluntary, responses would be maintained strictly confidential, and that the interview would be recorded in video and a transcript would be produced. Furthermore, participants were informed that the transcript of

the interview would be analyzed solely by the researcher, that without their express consent no other use of the video material would be made, and the actual recording would be destroyed once the results had been transcribed. Informants were also told that their anonymous information will be maintained for future research uses, such as publications relating to this study, after the Thesis would be completed. The above measures needed to be taken by the researcher, since all qualitative research approaches, with the exception of participant observation, require specific informed permission irrelevant to the sample technique employed to find possible respondents or the processes adopted to attract them to participate (Mack, 2005).

The interviews were conducted with participants after their review of the cover letter and going over the pre-interview briefing (Appendix IV) which the researcher always had available to refer to, during the preparation stage for conducting the interview. Nevertheless, at the point of beginning each interview, informants were asked again to give their consent to recording the discussions (Miles and Huberman, 1994). During the in-depth discussions, the interview protocol was employed as a guiding mechanism to conduct the sequence of topics being examined. The questions proved to be overall simple to understand since the researcher had made a conscious effort, following the pilot studies and expert assistance, to simplify the terminology used in the interview questions themselves (Patton, 2005). The researcher ensured that the essence of the terminologies used to classify the preliminary factors used in the conceptual framework was preserved, even after some of these terminologies were simplified in order to make them more easily assimilated by informants. Clarifications were also provided in case respondents faced any difficulty in the comprehension of any question. The length of the interviews was intended to be around 60 minutes and no longer than 90 minutes each, since the duration of 60 minutes is considered as the perfect time for an interview as stated by Jarrat (1996). The interviews were conducted online during times that were most convenient for the key informants, having in mind their work commitments. Every interview did indeed take up about one hour to one hour and a half, and the transcription took place later that day, or on the following day, since it is recommended that transcription needs to be completed within 24 hours of finalizing the interview (Eisenhardt and Graebner, 2007). The interviews began with informal discussions with the respondents about their professions as well as their education backgrounds in order to create a comforting ambiance enhancing trust and easy communication. The researcher subsequently followed the Interview Protocol and all throughout encouraged informants to describe their experiences, share stories and give

examples from the practical setting of their involvement with the phenomenon under study. The aim of this was to ensure that rich data was obtained. The interviews took place in English language having in mind the participants were all fluent in practicing this language in casual as well as professional settings (see Appendix VI). All interviews took place between May 2022 and October 2022. Following the choice of semi-structured interviews to be conducted through online one-to-one meetings so as to collect the data for the study, and upon creating the relevant interview protocol and carrying out the pilot interviews, the data gathering procedure and data organization issues are also evaluated below.

Organizing of data

In terms of data organization, key informants gave their permission for the interviews to be video recorded, and contextual data such as the interview location, day and time, were also recorded. The researcher was keeping notes regarding the important points while capturing the video, and these would constitute the interview notes upon which the researcher would refer to during the upcoming data analysis stage. Interviews were recorded using the video recording function of the Microsoft Teams software that was utilized as a medium for the online meetings. Subsequently, the researcher would transcribe the interviews. Transcriptions were finalized in the first twenty-four hours after the interview and additional notes concerning the discussions were prepared straight away upon the conclusion of every interview (Miles and Huberman, 1994) in order for the researcher to have the chance to note down the key points while still having a strong recollection of the information in his mind.

To make data organization and analysis easier, all participants' personal information was preserved anonymous, and informants were denoted by a numeral such as 'Respondent 1 (R.1)', 'Respondent 2 (R.2)', and so on. Following Clark, Braun and Hayfield's (2016) approach, after the primary qualitative data was obtained and the transcription was completed, the researcher utilized a thematic template analysis technique to uncover emerging themes and patterns. In the Data Analysis and Discussion Chapter, there are more explanations on this technique. The researcher utilized NVivo 12 qualitative analysis software to code the data, from which the themes emerged. The important themes and patterns emerged organically and effortlessly throughout the original data collection process through in-depth interview discussions and the author was able to separate the information into clearly identifiable themes as a result. Furthermore, this technique is thought to be relevant for the purposes of the study since it is

suitable for detecting unforeseen themes and documenting ideas within large amounts of qualitative data (Guest, MacQueen and Namey, 2011).

In conclusion, all participants were requested again to allow the researcher to utilize their comments throughout the writing of this dissertation, keeping in mind their personal details were strictly anonymized. As a result, informants' personal information remained private, and anonymity and confidentiality were maintained (Yin, 2015).

3.4 Data analysis and data presentation

Quantitative and qualitative data are analyzed in very different ways. Graphs, charts, and statistics are examples of quantitative analysis tools, whereas qualitative analysis approaches are founded on a dissimilar philosophy. The researcher's approach to qualitative data analysis is far more difficult to characterize (Bryman, 2004), as qualitative data represent meanings communicated through words that are related to beliefs, feelings, thoughts, and so on, and the researcher is expected to interpret and analyze these connotations. In order to accomplish this, data is categorized by using groupings based on common outcomes, and subsequently these groupings are structured accordingly to provide answers to the RQs (Saunders, Lewis and Thornhill, 2019). The analysis process of qualitative data must preferably occur simultaneously with data collection in order for investigators to get a better grasp of the study questions, as such practice has the potential to add further information and update both the sample approach and the interview questions content as the procedures are taking place. Because qualitative research is cyclical in nature, and early data processing is occurring concurrently with data collection, investigators frequently edit their questions along the way as they learn more about the subject (DiCicco-Bloom and Crabtree, 2006). This recurring data collection and analysis process eventually comes to a stage when no further new groupings or themes emerge from the data. This is termed as saturation and, once reached, is an indicator that the data gathering process has been concluded (ibid.), and accordingly the researcher may focus exclusively on data analysis tasks from that point forth.

In terms of the examination of primary data, this study uses thematic analysis, since for the required advanced level of interpretation of the generated data, the researcher has deemed it appropriate to use this approach to develop a suitable analysis technique based on themes and subthemes. Some of these generated topics or categories have arisen as a result from the

literature research, while others have been born through the data analysis, and the researcher has created a template for the thematic analysis in this fashion. Such an approach to thematic analysis of data is highly appropriate for the present Thesis, since it is in line with CR ontology and epistemology (Fletcher, 2017), which the author has opted to use. The recognition of occurrences or observations through an empirical grasp of the world is the first step in data analysis, according to CR ontology, followed by theoretical re-description or abduction, being the process of comparing these events to concepts in the literature in order to gain a solid explanation for them (Lawani, 2021). More precisely, the process of analyzing data, according to CR ontology, begins with the pursuit of finding semi-predictable patterns through obtaining an empirical grasp of the world. Even though CR accepts the fact that societal connotations, thoughts, and judgments can have causal effects on the world, such societal items do not reflect Humean constant conjunction's mechanistic uniformity (Fletcher, 2017). In other words, such causal effects cannot be explained merely in physical or deterministic terms, since Hume believes that ideas and matters of fact are distinct concepts (Lorkowski, 2011). David Hume was one of the British empiricists of the Early Modern Period, and the researcher, in order to truly grasp the concept of effective data analysis in CR, has extensively studied Hume's work, particularly in relation to the concepts of causality and how they affect knowledge generation from collected empirical data, and as a result the quality of the data analysis process itself. According to Hume's perception of causality, when two events consistently occur together, one may say that one event causes the other and therefore these events exhibit constant conjunction (Lorkowski, 2011). That is, every time the first event occurs, the second one is bound to do so as well, and this way the observer feels assured that the same pattern will persist taking place. This leaves a very diminished feeling of necessity, once the observer realizes that the first event bringing about the second is essentially due to their constant conjunction, and the observer thus feels psychologically assured that the second event will always follow the first one. This inadequate understanding of causal efficacy further exacerbates the "induction problem", which asserts that humans are not entitled to make any inductive assumptions about the cosmos (ibid.), due to the inherent limitations of their individual experiences.

As a result, Hume sees cause and effect as both a natural and a philosophical relationship, and he provokes observers of phenomena to think about how their understanding of cause and effect is shaped and limited by their individual experiences (Lorkowski, 2011). For these reasons, and since the researcher adopts the CR philosophical positioning, retroduction has been used to analyze the data obtained from the interviews. According to Bhaskar, (1998), as cited in

Lawani, (2021, p.7), *"retroduction is the fundamental method of inference used in arriving at a theoretical explanation by describing significant characteristics of a possible causal structure at work."* This procedure has been referred to as abduction by certain authors, causing confusion between the two concepts (Mingers, 2006). Retroduction, in contrast with induction, has a more all-encompassing nature because it comprises of two processes. Firstly, through retroduction, the researcher strives to conduct a proposed re-explanation of the evident themes that are preferably shared by research respondents or gleaned through past facts, in order to merge empirical results with prior theoretical ideas found from extant literature. Second, retroduction is concerned with establishing the interrelationships between the identified elements, or in other words the causal mechanisms that might exist between them. This procedure aims to create a level of interconnectivity between observable occurrences (Danemark *et al.*, 2002). As a result, abduction can be considered to be a subcategory of retroduction, and the various critical realism methodological tenets that serve to explain phenomena, composition and substance within research work, are essentially variable versions of retroduction (Lawani, 2021). Empirical verification, along with the help of retroduction are therefore the two distinct components that both comprise data analysis in CR, according to Wynn and Williams (2012), as cited in Brönnimann, (2021). It then follows that natural and philosophical ideas, as well as the apparent characteristics and axioms relevant to the chronological order of event occurrences, can all be used by the critical realist researcher to retroduce causal explanations (Brönnimann, 2021).

Even though there are constantly new and more advanced data analysis solutions coming up, it is argued by DiCicco *et al.* (2006), that the the researcher's experience, individual discipline, and expertise remain critical ingredients for qualitative research analysis success. Additionally, NVivo 12 qualitative analysis software was used to code the data, thus providing a solid structure and framework in which the primary data is organized and adding further validity to the research results. Considering the above, the researcher was able to adopt an apt systematic approach towards taxonomizing the data collected.

In order to assist with the data analysis process, each interview was video recorded and transcribed on the same day, as previously stated. Although transcription of interviews takes time, it improves the quality of the data collected since it allows for precise word recording (Snow and Thomas, 2004). In addition to this, since the interviews took place via video conferencing, the researcher was also able to visually observe respondents, and thus recorded

remarks about body language cues exhibited by individual participants, in order to attempt to glean additional data transmitted through nonverbal communication. As stated by Denham and Onwuegbuzie (2013), it appears that researchers do not give due consideration to documenting nonverbal communication cues of interview respondents, and to the important function this information plays in the meaning-making and knowledge generation processes when collecting and analyzing interview data. To assist with the production of a good transcript, researchers normally also utilize extended interview notes which could either be typed or handwritten. The jotting down of these notes happens while data is still being collected during the interviews, and they are subsequently used during the preparation of the interview transcript, to bring back to the researcher's memory interesting insights offered by a participant. These notes would also be used and expanded upon during the actual transcription process that takes place subsequently, to explain and contribute further context to the things that have been stated by respondents (Mack, 2005). Upon conclusion of transcription, all key informants' transcripted interviews and additional notes taken by the researcher were preserved in a separate file, ensuring secrecy and anonymity of respondents (Saunders, Lewis and Thornhill, 2019). The most common format for interview data is transcripts in typing, and as such the transcripts have been typed and classified throughout the data analysis part of the study, based on respondents' replies to every question and by looking at the most prominent patterns arising throughout the conducted interviews.

Data gathering, proposal construction and validation, as well as data analysis are all interconnected and interactive activities. A data analysis process that is governed by the CR philosophical positioning, takes place both during and after data collection (Kvale, 1996) and proper analysis aids in determining the direction of data collection, particularly when using a more inductive, grounded approach. The researcher in this way, is able to compare the preliminary factors in a study to the propositions that arise from the primary data collection. Furthermore the researcher is also able to determine whether the data gathering begins with a conceptual framework that needs to be developed, as is the case of the present Thesis, or whether it would begin with an already established hypothesis, that the researcher will strive to test (Erlandson *et al.,* 1993), and the main benefit obtained by following such an approach, is that it gives researchers a lot of flexibility (Saunders, Lewis and Thornhill, 2019). The data analysis part of this research study therefore includes a comparison of the key findings with existing theory and related theoretical notions (Ravenswood, 2011). Following this logic, the analysis and discussion section detects certain parallels or inconsistencies, while the primary

goal is that of expanding on current theory and knowledge. As a result, the method for analyzing primary data entails a continuous comparison of primary data, analytical knowledge construction, and extant theory. In Chapter 4, Data Analysis, more relevant and detailed information will be disclosed concerning the precise process that was followed, and it should be noted that carrying it out meticulously serves to substantially increase the quality of the research work performed.

3.5 Data quality

The development and format of the interview questionnaire, the rigor of the pilot testing and the response rate achieved from the intended participants in a purposive sample, all play a role in the internal validity and reliability of data retrieved by an investigator (Saunders, Lewis and Thornhill, 2019). All studies, according to Denzin and Lincoln (2008), should meet a set of common criteria, such as credibility, internal and external validity.

Researchers need to follow and address many criteria for research quality in order to accomplish the desirable level of data quality of their research study (Tracy, 2010). As a result, this component of the research explains how distinct data quality challenges are addressed qualitatively. Credibility, validity, reliability, and ethical considerations are explicitly established as the key data quality issues.

3.5.1 Credibility

This concept mostly relates to the reliability and assessment of a qualitative study's research findings (Tracy, 2010). The credibility of quantitative research is determined by the instrumentation used, whereas credibility in qualitative research, on the other hand, is founded upon the researcher's competence, knowledge, expertise, and documented effort that has been expended (Golafshani, 2003). As a result, it is linked to the researcher's endeavour to demonstrate that they have the necessary competence and knowledge to complete the investigation primarily in the case of interviews, where the researcher's reputation is crucial to the data collection process (Street and Ward, 2012). Even more crucially, if a researcher wants to collect delicate data like emotions, the interviewer's credibility is even more important (Saunders, Lewis and Thornhill, 2019). Additional to the points above, through obtaining the help of experts and by conducting a pilot study, the researcher ensured that the final version of the interview protocol did not include any leading questions and that all of the questions were

impartial. It should be noted that writing leading questions that give rise to specific conclusions before collecting data might skew a study's results and undermine its credibility (Agee, 2009).

Consequently, by conducting telephone discussions with the participants prior to the interviews, the author of the study was capable of developing stronger levels of credibility with the respondents. Through this contact, interviewees were able to identify and recognize the researcher's appropriate expertise and skills, as well as appreciate the fact that their personal and professional details would be treated with confidentiality, and that they may freely discuss their emotions and ideas. The researcher ensured to emphasize these facts, which were shared with respondents before the interviews, and constituted an integral part of the pre-interview briefing sessions that would take place prior to the actual interviews (see Appendix IV).

Finally, in relation to ensuring the study's credibility, the researcher is able to demonstrate his expertise in the field of research as well as the technique and protocol for conducting interviews by his prior practical experience in e-learning delivery both as an instructor and management staff. As an instructor, the researcher has delivered a wide variety of courses via online media such as Articulate Presenter, Webex, MS Teams among others. This allows the researcher to easily put himself in the shoes of the interviewees and to genuinely understand their perspectives, whatever they may be. As a staff member of e-learning management, the researcher has been involved with the setting up, implementation and running of an online course delivery center within a top private university in Cyprus. This allows the researcher to grasp the meaning of highly technical terminologies that interviewees might be using, depending on their level of expertise with online learning systems. The researcher also has a demonstrated academic background, which includes published articles on e-learning management and has presented his work at online education and management conferences, such as the 16th and 17th International Technology, Education and Development Conferences INTED 2022, 2023, and the 15th Annual Conference of the EuroMed Academy of Business, 2022.

3.5.2 Validity

Validity is defined by Vogt (2007) in the context of the dependability of the inferences suggested by a research study, and it is presupposed by the truthfulness or precision of research findings. Since the findings should be closely supported by the primary and secondary data that

has been collected, it must be organized in a strict, consistent manner to ensure the safe-keeping and the validity of the results of a qualitative research study (Mack, 2005). This is necessitated by the notion that "*while interpretive research is recognised for its value in providing contextual depth, results are often criticised in terms of validity, reliability and generalisability*" (Perry, 1998; Eisenhardt, 1989, as cited in Chowdhuri, 2014, p.434). Thus, the process of choosing feasible sources that encourage a deeper conceptualization of the activity or phenomenon in question, is directly related to the reliability and validity of qualitative research (Polkinghorne, 2005).

Validity difficulties must be addressed if a researcher wishes to achieve study quality. However, various scholars have claimed that validity is primarily relevant in quantitative research, whereas in qualitative research, trustworthiness, quality, and vibrancy of the data collection process, are the primary concerns (Golafshani, 2003). To better comprehend these traits, and to ensure they are present in the study, the researcher further explores and breaks down the overarching concept of research validity, which is split into three subtypes as follows: construct validity, internal validity, and external validity (Denzin and Lincoln, 2011). The generalizability of outcomes is what external validity is all about (ibid.), however, because this is a qualitative study, external validity is not a concern since no generalizations are sought. The extent to which research measurements or methodologies analyze what they were designed to assess is referred to as construct validity (Saunders, Lewis and Thornhill, 2019), and internal validity is concerned with the procedures employed to collect data for the phenomenon under investigation to be correct and appropriate, in order for the results reached to be legitimate and genuine (Sinkovics, Penz and Ghauri, 2008). It can be summed up that validity, in general, is the driving force that creates a predisposition towards how reliable the results of a research study are going to be (Golafshani, 2003).

The researcher has further to the above, also examined how the issue of validity has been handled in prior qualitative studies that involve e-learning instructors, students and experts as interview respondents. For example, in a prior study examining e-learning sustainability through the perspective of students, conducted by Lee, Song and Hong (2019), the measurement instrument had been assessed by five experts in educational technology and e-learning to determine the validity of the parameters created in the preliminary research, thus contributing in this way towards improving the construct validity of that study.

Construct validity

Explaining this denomination of validity further, the extent to which one can implement adequate operational measurements for the process or phenomenon on which the research focuses, is referred to as construct validity (Yin, 2015). There are several methods for increasing construct validity, according to numerous experts (Sinkovics, Penz and Ghauri, 2008) and to begin with, the research study needs to include a detailed account of how data was gathered originating from observations, interviews, or questionnaires (Stuart *et al.,* 2002). Second, during the data collection stage, the research must also establish an evidence trail, such as verbatim interview transcripts, field notes, and so on (Sinkovics, Penz and Ghauri, 2008), to ensure a rational and serial procedure that can be recreated and reperformed by future researchers, so that they could use the same gathered data as a starting point and arrive at replicable conclusions as the original body of academic work (ibid.). The third technique to improve construct validity is the examination of the study's report drafts arising as a result of information shared by the key informants during the reporting preparation process (Stuart *et al.,* 2002). Construct validity is improved by pilot testing the interview guideline with key informants before the real data collection stage (Sinkovics, Penz and Ghauri, 2008). Lastly, construct validity can be obtained by utilizing qualitative data analysis computer software such as NVivo, which can add a further level of replicability to methods that have been used (ibid.). The final option to improve construct validity is to use the triangulation technique (Riege, 2003) and it is noteworthy that within a qualitative research strategy, there are various forms of triangulation that can be accomplished (Patton, 2005), such as for instance perspective triangulation, which was sought by the researcher for the purposes of the present study.

The researcher in this study has improved construct validity through a series of processes. To begin with, the researcher has produced and presented a detailed account of how data was acquired throughout the research process, from the beginning to the end (Stuart *et al.,* 2002). He has outlined the data collecting procedure, which includes in-depth interviews, in detail. Furthermore, efforts have been made towards retaining all the relevant facts from the information gathering procedures, such as the video footage of the interviews, as proof of this. As previously stated, pilot testing was used prior to conducting the semi-structured interviews, and this procedure notably improved the research's construct validity. This has been achieved since all of the difficulties and shortcomings discovered during the pilot study were resolved prior to conducting the actual interviews; something which enhanced both the information gathering technique as well as the validity of the interview protocol which has been used.

Before beginning the actual data gathering procedure, the researcher carried out three interviews in the form of a pilot test to determine the viability of the study strategy, the suitability of the research questions, and the data gathering and analysis methodologies. Furthermore, the researcher's supervisory team double-checked the wording and terminologies used for the complete questionnaire to ensure construct validity is maintained (Chang and Cheng, 2015).

As a result of the researcher liaising with and obtaining advice from academics with substantial experience in the process of employing interviews as a data collection approach in comparable study disciplines, the procedure of conducting the interviews was enhanced. The researcher has been able to obtain convenient access to such expert advice due to the fact that throughout the course of conducting and completing the study, the researcher has been employed in a multidisciplinary comprehensive university with a vibrant academic community. In this way, perspective triangulation improved construct validity by allowing the investigator to have an all-inclusive expert view of the topic under inquiry (Yin, 2015). Furthermore, as proposed by Sinkovics *et al.* (2008) and employed by a variety of academics, this present work has utilized the NVivo software to aid the data analysis process, which can also give replicability of the techniques performed within the present research, thus boosting construct validity. Furthermore, by enabling the RQs to constantly direct the flow of the information gathering techniques, the present study established a clear evidence trail (Yin, 2015) and, all throughout, special attention was paid to following the guidelines and processes outlined in the interview protocol (ibid.).

Internal validity

Internal validity is usually sought when a study attempts to show an underlying connection among two variables, and it is typically used in quantitative investigations (Saunders, Lewis and Thornhill, 2019). The extent to which researchers can discover and support such causal relationships is referred to as internal validity, i.e., how specific situations cause other conditions, and how they are clarified through analyzing results of a research study (Stuart *et al.,* 2002). There are a variety of ways to enhance internal validity, such as for instance the "pattern matching" data analysis technique, according to Yin (2015). Through this technique, it may be demonstrated that the empirical data reveals patterns that are consistent with the postulated patterns of the overall population.

Within the present Thesis, the researcher employs the in-depth semi-structured interview technique, and it should be noted that certain studies adopting qualitative research interviews utilize an extant theory to frame the research, while others instead opt to analyze a phenomenon that has not been too extensively observed in the literature (Barratt, Choi and Li, 2011). In relation to this, researchers should keep in mind that when building theory through qualitative interview-based research, internal validity and conceptual essence are boosted when extant theory, is also used (Ravenswood, 2011). Hence, there was also a descriptive component comprising the research purpose of the present study, whereby the researcher strived to obtain e-learning instructors' views concerning extant theories relating to the effectiveness and implementation of e-learning courses. Additionally, the researcher examined prior models on e-learning acceptance and through the final conceptual framework, has attempted to propose how the existing and widely recognized TAM model could be expanded to also include additional potential factors that might be influencing HE instructors' acceptance of an e-learning system. Therefore, extant theories served as the foundation for describing the concepts encompassed within the present study, as stated by several academics (Barratt, Choi and Li, 2011).

What is more, Eisenhardt and Graebner (2007) have stated that using qualitative research to relate emerging hypothetical ideas to current works improves the internal validity of theory construction, and in this sense, Stenbacka (2001) claims that generating a high qualitative research validity is straightforward. Hence, relating emerging hypothetical ideas to extant theory in order to fill theoretical gaps, is precisely what has been carried out through the thematic analysis performed throughout the data analysis section of the present research. Following the analysis of the data, the results were connected and related to extant literature, when relevant and appropriate, strengthening the research study's internal validity. Throughout the course of performing the data analysis, the researcher ensured to group the emerging themes and subthemes into headings which are based on and easily relatable to the RQs as well as to the preliminary factors of the study, that had been identified during the literature review which had been carried out. In addition, the data was analyzed using the thematic analysis technique, which was implemented with NVivo qualitative data analysis software as previously stated, while also using other transcribing and analysis tools, such as the Microsoft Office suite.

Perhaps most crucially, the internal validity of this study was increased by ensuring the proper preselection procedure of interview respondents and including only those who are full time

university faculty, possess dependable online teaching experience and also satisfy the remaining secondary preselection criteria. After receiving consent from the participants, the present research study used semi-structured interviews with open-ended questions, as prescribed by Stenbacka (2001). The informants have been picked based on predescribed selection criteria so as to fit the profile of insiders to the process being examined, and thus offer valuable insight towards understanding the research issue. The particular selection criteria have already been clearly stated in the study, and this boosts validity, according to Sobh and Perry (2006), as more detailed and rich data about the issue is gathered if the proper selection criteria are used to select the appropriate interview participants. Therefore, as a result of the purposive sampling strategy that was followed in selecting the interview sample, the researcher was capable of collecting vital primary data and thus improve the research validity.

The processes of the thematic analysis and the resultant theory crafting have been reinforced by the fact that the researcher has a keen interest in understanding e-learning instructors' experiences, within the specific problem area being studied, in order to better appreciate the social phenomenon of their experience with the e-learning system. Parallel to this, the participants that made up the study sample, have a genuine comprehension of this phenomenon as they are direct stakeholders within the problem areas being explored. They have been given the freedom to externalize their viewpoint founded on their individual knowledge constructions through the semi-structured interviews that were carried out. As a result, when using the non-forcing interview method with carefully selected key informants, validity is also established and reinforced (Healy and Perry, 2000). As per Sobh and Perry (2006), respondents in qualitative investigations have to be free to share their ideas in whichever manner they desire without being forced to participate in the interviews. This was taken under consideration in this study, as respondents were only requested to participate in the research proceedings only in the event that they chose themselves to do so. Furthermore, because the majority of the questions in the interviews were open-ended as per the protocol that was followed, respondents had the opportunity to openly express their ideas and feelings as a result of their own volition. Because the interviews were semi-structured, they also had the chance to discuss a subject or topic that was not mentioned in the interview procedure and as a result, the researcher advocated for meaningful dialogues, discussions and extensive storytelling to take place, thus further validating the study's findings.

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External validity

Researchers must clearly explain the sample frame, population, persons, contexts, activities, and domains to which generalizations are meant to apply when generalizations extend beyond a given case (external validity). It is necessary to explain the logic behind such broad generalizations (Denzin and Lincoln, 2011).

The extent to which the findings of a research study may be replicated and the fact of whether there is traceability with current theories is referred to as external validity (Stuart *et al.,* 2002). A common criticism of research based on qualitative studies is that the sample size might be too insignificant to be able to generalize the findings from it (Olkkonen and Tuominen, 2008). This critique, however, is unfounded since it stems from a distinction between qualitative interview research and survey research, resulting in a misinterpretation between the two categories of generalization. Statistical generalization is the goal of survey research, whereas analytical and contextual generalization is the goal of qualitative interview study research. To put it another way, generalization implies that we generalize from each case leading up towards a generalized theory, rather than from sampling to populations (ibid.). External validity can be improved in a variety of ways, such as for example by recognizing research concerns prior to data collection and, as a result, developing an interview technique that will generate data which is sufficient for accepting or rejecting the research study's proposed theories (Healy and Perry, 2000).

Contextualization, or specifying the setting in which the research results take place, can also improve external validity since it gives a legitimate analytical generalization instead of statistics-based generalizations for the research study (Christensen and Carlile, 2009). In order to obtain external validity, various actions were taken by the author in this research investigation. To begin with, this study defined the research geographical setting and market, which is the higher education domain of Cyprus, as well as the precise industry within this market, namely online learning delivery in HE. The researcher also thoroughly explained the reasoning, rationale and preselection criteria that had been adopted in order to identify and recruit the most appropriate key informants for the interviews from within the setting and context in which the research was based. Additionally, according to Healy and Perry (2000), an interview methodology was designed and pilot-tested prior to the data collection stage. Finally, the findings were also encapsulated within extant literature and academic theories during the data analysis phase, by use of the thematic analysis technique.

3.5.3 Reliability

As per Golafshani (2003) a research method is deemed trustworthy if the research findings may be duplicated using a comparable methodology, and reliability is defined as the degree to which outcomes are consistent across the board and are an apt portrayal of the general population being investigated. In other words, it refers to the amount to which a study's research process, including data gathering methods, has the capacity to be replicated by future researchers and result in identical conclusions (Saunders, Lewis and Thornhill, 2019).

As a result, each aspect of the current study, particularly the methods section, is thoroughly detailed so as future replications can be possible. In addition, three experts were involved in the interview protocol formulation process, which increased the trustworthiness of the questions. These experts suggested additional enhancements and flagged potential errors, which the researcher took into account when refining the questionnaire. Precisely, an academic expert in the area of e-learning cross-checked the factors examining instructor perceptions while a practicing e-learning expert who specializes in faculty training and development observed the e-learning terminologies used in the interview questions. Finally, a business management academic reviewed the CSFs, barriers and management areas.

It is critical to notice that the researcher established the analytic technique of thematic analysis effectively, avoiding any potential errors and accurately establishing the themes and sub-themes by clearly relating them to the study's preliminary factors and RQs. As a result, the researcher minimized prejudice and errors in order to achieve a greater level of reliability.

3.5.4 Ethical considerations

Codes of research ethics need to be followed and adhered to by researchers. There are appropriate ethical guidelines and rules that help a researcher minimize ethical conflicts and dangers (Saunders, Lewis and Thornhill, 2019) throughout the carrying out of research work. Every stage of the research procedure in this study has been done with strict research ethical requirements in mind.

The researcher has made it a point to behave ethically, while maintaining integrity and neutrality throughout the empirical investigation stage. He treated the confidentiality and anonymity of all the respondents in this study with respect, every piece of documentation and

interview clips were treated confidentially, and were used only for the achievement of the research goals. All the stored documentation was also password-protected so that no one else could access it (Blumberg, Cooper and Schindler, 2014), and the research's data and findings are presented in a straightforward and factual manner.

Furthermore, the respondents who took part in this study have been treated with the utmost respect, and all the relevant privacy concerns have been addressed effectively. With the respondents' consent, just their comments were documented to use in this study, but their names and the names of the universities employing them were kept private. As a result, all of the study's key informants were requested to assent to participating in the interview, and a pre-interview briefing was supplied to them (Appendix IV). Participants could also disengage at any point throughout the interview or opt to decline answering a particular question should they feel so (Blumberg, Cooper and Schindler, 2014). Similarly, the universities were asked to provide their permission for the researcher to approach faculty employed by them, for the purposes of removing and satisfying any ethical concerns (Saunders, Lewis and Thornhill, 2019).

Concluding, in accordance with the pertinent methodology research, investigations that use a qualitative method to explore human emotions must consider additional ethical problems. The researcher needs to exercise care while designing the IQs so that no participant is psychologically harmed (Creswell and Poth, 2016). As a result, experts must analyze the questions, make suggestions for changes, or even remove a question if it is deemed inappropriate. Resultantly, and as previously stated, three experts analyzed the interview protocol's questions. All of the necessary revisions were made to ensure that all ethical issues were taken into account and that ethical biases were avoided.

3.6 Conclusions

This chapter described the research's methodological approach, including data collection and analysis methodologies. The relevant definitions, concepts, and principles that underpin the researcher's methodological approach and orientation were also discussed.

The chapter began by explaining the researcher's philosophical viewpoint, which included ontology and epistemology, as well as research strategy techniques. Furthermore, an

elaboration on Critical Realism was provided at this point as an exposition of the researcher's philosophical stance. This decision was justified by the use of relevant logic and argumentation, and following that, the researcher detailed the broad strategy for the way in which the research questions will be methodologically explored and answered in the research design part, which included a full review of the research purpose and approach. Furthermore, the researcher elaborated on the study's research data collection approach, which is semi-structured interviews, as well as the rationale for choosing this method. This part also discussed the sample strategy, justified the decision, and presented the results of the pilot study. Following that, the approach for qualitative data analysis that was used was explained. Lastly, in the chapter's final section it was detailed how numerous data quality concerns have been tackled in order to assure the collected data's credibility, validity, and reliability. With this in mind, the researcher addressed the ways in which ethical standards were considered and implemented throughout the course of the research in order to minimize ethical biases.

CHAPTER 4 DATA ANALYSIS

4.0 Introduction

The research methodology, methods, and data gathering techniques utilized to investigate the study's research questions empirically were described in the preceding chapter. This chapter describes the data analysis methods used. The terminology and guiding principles of thematic analysis and template analysis theory are first explained in this chapter, along with information on planning strategies, methods in use, and software utilized in qualitative data analysis. The initial template arising as a result from the literature is presented. It was adjusted and enriched using the thematic analysis technique and more precisely the template analysis technique, after the primary data collection process had been completed.

4.1 Thematic analysis

The data analysis section of a research study is one of the most significant aspects of the whole process since it assists the researcher in meeting the aim and objectives of the study, and also in answering the research questions (Saunders, Lewis, and Thornhill, 2019). To identify the fundamental mechanisms and interpretations that address the aim, objectives, and research questions of the present Thesis, what the author attempts to carry out during the data analysis stage, is to try and analyze the data generated by conducting interviews with the participants. To analyze the data collected, the researcher has used a combination of deductive and inductive techniques (Eisenhardt and Graebner, 2007), by drawing constant comparisons between the gathered primary data, empirical assumptions, and established theoretical concepts (Miles and Huberman, 1994). The researcher has not followed a purely positivistic approach as the data has not been processed statistically, but he has also avoided being merely inductive by using techniques like grounded theory, for example (Birks and Mills, 2015). Therefore, in this study, a middle-of-the-road method utilizing deductive as well as inductive logic has been used to analyze the data.

It is critical to explain the reasoning behind using the thematic analysis technique, its significance, and the credibility it assures in terms of the current research before presenting, analyzing, and discussing the study's primary data. Thematic analysis is a very important tool that a researcher who engages in qualitative research may use to produce data analysis of a high level of quality since it reveals the subjects' actions, sentiments, feelings, perceptions, and experiences in unique situations and settings (Maguire and Delahunt, 2017). Thematic analysis is widely regarded as a valuable and reliable technique among qualitative researchers, with

numerous benefits such as accessibility and adaptability being enjoyed (Guest, MacQueen and Namey, 2011), and it can be defined as a method used by a researcher to recognize and discover patterns in a qualitative data set (Terry *et al.,* 2017). Further to the above, thematic analysis is compliant with critical realist ontology and epistemology and is a technique that can be used to also determine key themes and subthemes from the data (Lawani, 2021). Theoretically adaptable, this approach of analysis, therefore, offers a thorough representation of the data, while also enabling the identification of meaningful relationships (Vaismoradi *et al.*, 2013; Braun and Clarke, 2006, as cited in Lawani, 2021).

According to Guest, MacQueen and Namey (2011), thematic analysis focuses on finding and describing themes—i.e., implicit and explicit ideas—within the data. In particular, the researcher attempts to discern a number of patterns in the primary data collected to provide answers to particular research questions (Clarke, Braun and Hayfield, 2015). By addressing the themes and subthemes, the researcher will be able to respond to the research questions that were formed through the literature review and the primary data analysis. As a result, by developing themes, an in-depth thematic analysis can analyze the empirical data, understand the facts, and ultimately provide a denotation to the collected data (Maguire and Delahunt, 2017). In particular, the identified themes have been connected to specific research questions since this practice generates the necessary information to respond to a specific question and also aids in meaningfully organizing the literature into categories and themes (Braun and Clarke, 2021). Further, this method aids in the researcher being able to identify the study's novel phenomena and underlying mechanisms that might influence these phenomena.

This particular method is based on two strategies: the first one being an inductive strategy, in which the coding and analysis processes are conducted in accordance with what has been discovered within the data; and the second being a deductive strategy, in which the researcher codes and interprets the data using certain predetermined theoretical codes, concepts, and themes during the collecting of primary data. It is feasible to use both strategies in conjunction, and consequently, this study's research adopted the third strategy, which combines the thematic analysis technique's deductive and inductive approaches. This was carried out by expanding on the main conceptual and theoretical paradigms of instructors' perceptions towards factors for e-learning effectiveness and barriers to e-learning implementation, as well as their perceptions towards the associated management actions (deductive), and by coding through the primarily

collected data to discern how these aforementioned factors might be influencing the instructors' level of acceptance of e-learning (inductive).

Theoretical concepts that had emerged throughout the conducting of the literature review were sought as preliminary themes at the beginning of the data analysis process, they were then reviewed during the data collection process, carefully examined, and finally redefined after the conclusion of the interviews. The initial thematic analysis applied to the extant data served greatly in assisting the researcher to carry out template analysis using NVivo 12, which is outlined in the next section of this Thesis.

4.2 Template analysis

Template analysis is a type of thematic analysis that focuses on the utilization of tiered codes while balancing a considerably sufficient level of organization in the analysis of text data, and having the freedom to customize it to the requirements of specific research (Brooks *et al.,* 2015). At the core of the technique is the creation of a coding template, typically built around a set of data, which is subsequently used to code additional data, while it is reviewed, and improved. Unlike other thematic coding methods, this methodology is quite flexible regarding the design and structure of the template that is created and does not preordain the order of the coding levels. Instead, it encourages the researcher to develop the themes where the most insightful data—in connection to the research question—are located. In addition, in template analysis there is neither a need for clearly distinguishing between interpretive and descriptive themes nor is there a need for precisely placing each type of theme at a specific location in the coding structure (ibid.).

Studies that use template analysis typically use interview transcripts as the source of their data, demonstrating how commonplace this method of data collection is, and also the fact that it is closely applicable to the present research. However, template analysis is applicable to all types of textual information, including interview transcripts and even written questionnaire responses to open-ended questions (King, Brooks and Tabari, 2018). In order to see how template analysis precisely fits into thematic analysis, it is useful to examine the differentiation between the three general methods of overall thematic analysis made by Braun and Clarke (2019). The first type of technique is referred to as "Coding reliability", and it uses a highly structured manner of analysis and adheres to a positivistic mindset. Additionally, it is focused on determining coding

reliability and validity. Secondly, "Codebook" techniques similarly place a strong emphasis on the structure during the coding process, but they are supported by a more genuinely qualitative (non-positivist) philosophical perspective. Finally, "Reflexive" thematic analysis places a large emphasis on reflexivity and flexibility in theme formation while being less concerned with coding structure. Template analysis fits most closely into the second technique in this representation, namely the "codebook" approach. In fact, "template" and "codebook" are synonyms for the coding structure used to organize the data during the analysis process (Tabari, King and Egan, 2020).

A template is fundamentally a list of the categories or codes which stand in for the themes that have emerged from the acquired data. In template analysis, codes may be preset and then altered or enhanced as data are gathered and analyzed (Saunders, Lewis and Thornhill, 2019). The template's hierarchy was constructed using higher and lower-level codes that were organized according to the researcher's own opinion and choice since template analysis allows for this degree of freedom to be applied to aid the proper analysis of data (ibid.). For example, general overall themes such as instructors' perceptions toward a particular e-learning CSF include progressively narrower, more precise ones like the importance of a factor, why it is significant, and how it can be achieved by an HEI according to the instructors. Subsequent to this, it is crucial to remember that the outlined process of systematic coding and analysis also allows for the triangulation of data by incorporating various theoretical and conceptual issues as they emerge while trying to make sense of the generated data (Clarke, Braun and Hayfield, 2015; Guest, MacQueen and Namey, 2011).

According to King (2004), template analysis resembles the grounded theory approach, however, several techniques exist to distinguish it from the methods utilized in a grounded theory approach. Since it adheres to a more purely inductive analytical method as much as it is possible, grounded theory does not allow for the preliminary formulation of codes to analyze data. The processes that must be followed are specified in grounded theory, which is also more structured than template analysis (Strauss and Corbin, 1997). In this way, template analysis is akin to the data display and analysis technique in that it gives a more flexible path to analysis, whereas grounded theory is considerably more prescriptive, according to King, Brooks and Tabari (2018). The inductive and deductive methods are combined in template analysis and the researcher establishes a sum of pre-set codes that are drawn from the body of literature and then modifies them in light of the examination of the data gathered (Fereday and Muir-

Cochrane, 2006). The data are unitized and categorized, and the hierarchy-based placement of the chosen codes is intended to identify the topics. Rearranging those codes while analyzing the data gathered may indicate new potential research avenues and issues, and as a result, new codes, and the terms "themes" and "coding" both refer to the procedure of categorizing a substantial portion of text to tie it to a topic. The "themes" define the informants' views and experiences obtained from the crucial occurrences within the data set, which are pertinent to the phenomenon under inquiry (King, 2012), and further to that, the template is organized in a manner that demonstrates the relationships among the themes and the subthemes (Maguire and Delahunt, 2017).

Template analysis is an excellent match with the researcher's epistemological reasoning, as a critical realist, since this methodology offers deep, meaningful accounts of perceptions and experiences captured in textual form, through the investigation and clarification of the assembled data (Lawani, 2021). This is precisely the type of consideration that has been utilized to make sense of the interview transcripts. Specifically, the researcher probes the issue of HEI instructors' perspectives on e-learning success factors, barriers, and institutional management actions to address these, and then reflects upon the interviews that have been conducted. A rich description of the textual data is produced via contemplation and perspective comparison, through a detailed review of the sample size of 20 interviews, which is deemed to be a sufficient amount for this type of research (King, 2012). In analyzing the data, the researcher supports the view that multiple interpretations can be reasonably made when dissecting a phenomenon, always in line with the researcher's situation and the context in which the research is conducted, therefore, the issue of dependability coding is deemed to be unimportant. Template analysis suggests that this is an appropriate approach to qualitative data analysis and is in line with the epistemological viewpoint of critical realism adopted by the researcher (King, Brooks and Tabari, 2018).

Other methods of data interpretation, such as grounded theory and content analysis, were inappropriate for the current research work. For instance, the researcher had no desire to adopt only established codes or to statistically examine the data and because of this, content analysis was inappropriate. Furthermore, lacking a priori codes, such as in grounded theory, is likewise inappropriate having in mind the study's research aim, objectives, and questions. The researcher, on the other hand, thinks that template analysis is the best method for the current study because its goal is to utilize the body of existing knowledge as a foundation and then

include new codes that result from the data gathered. Data categorization seeks to discover and investigate the topics, and in order to analyze the interviews, the researcher first applies an initial template with "a priori" codes. After that, the emergent data will cause the initial template to be changed as the data analysis process evolves towards completion. Unlike content analysis and looking at the frequency with which specified codes appear, this type of constructive analysis of the data enables in-depth insight (King, 2004).

The researcher subsequently outlines the process of developing the template which has been used to analyze the data gathered from the semi-structured in-depth interviews, as prescribed by the template analysis technique.

4.2.1 The process of developing the template

Creating a list of templates that incorporate different themes is part of the template analysis process and themes may be decided upon prior to data collection, altered during data analysis, or discovered after data analysis (Mitchell, Rieger and McMillan, 2017). Previously, various academics have also hypothesized that a conceptual framework aids in accurately detecting predetermined codes (King, 2012). Based on this, the researcher is explicitly allowed, but not required, to uncover potentially relevant and applicable themes prior to carrying out the practical part of the empirical study; these are known a priori themes. This may appear to be at odds with the open-ended, inductive nature of qualitative research in general, it should be noted, though, that a lot of qualitative research does involve some top-down, deductive components, such as when an analysis is guided by a solid theoretical framework or when a qualitative analysis study must take into account particular themes that the researcher has established in advance (Tabari, King and Egan, 2020). For instance, there is an acknowledgment that the researcher may bring preexisting interests to the study in the form of "sensitizing notions" even in a technique as inductive as grounded theory (Charmaz, 2008). Having these concepts in mind, the author next discusses the procedural steps involved in developing the template.

4.2.1.1 The procedural steps involved in developing the template

The steps that are often taken when performing the development of a template will be succinctly outlined in Table 4.1 below, and it should be noted that these phases are not meant to be strict and immutable; rather, they serve as a framework for a typical analysis that can be

adjusted to meet the unique requirements of each study (Brooks *et al.,* 2015; King, Brooks and Tabari, 2018).

Table 4.1: Procedural steps involved in developing the template (Source: Author's own, adapted from Tabari, King and Egan, 2020)

1) *Familiarization with the data*	The researcher should go through transcripts multiple times and, if appropriate, listen to audio recordings or view video recordings in order to become as comfortable as possible with the data before any coding begins. At this point, the researcher should resist the need to begin establishing topics unless possibly to enhance a priori themes that have already been employed.
2) *Preliminary coding*	The researcher goes through the data, looking for information that relates to the research issue at hand and annotating coding to indicate what is of interest. The places where a priori themes seem to fit the facts can also be noted by the researcher.
3) *Clustering*	The researcher will attempt to cluster the codes and any a priori themes utilized after completing preliminary coding, and then start defining the primary and subsidiary themes within these clusters. There is no set restriction on the number of layers of subthemes that can be employed; nevertheless, elements of the data that are especially rich and crucial for the research questions will typically be coded in the greatest depth — possibly to five levels or more.
4) *Developing the initial template*	The researcher can start arranging the clusters into a preliminary version of the template as they become more clearly defined. It can be helpful to create definitions, at least for the higher-level themes and for any that could be confusing. Themes and subthemes will be specified as precisely as it is feasible. Some themes may be defined by

	the researcher as connecting across clusters; in template analysis, themes that connect many clusters are sometimes referred to as integrative themes.
5) Modifying the template	The first template is then used to code new data and/or redo the initial coding of previously coded data. Trying out the template, making changes where it doesn't fit, and then using it again is an iterative process. To improve the template's ability to capture pertinent meaning in the data, themes may be added, removed, redefined, or moved between clusters.
6) Defining the 'final' template	In actuality, the template may always be improved. The researcher's objective is to determine when the template is appropriate for the current analysis. At that point, the template will be explicit in its structure and theme definitions, and no pertinent data parts will be left uncoded.
7) Using the template to analyze and interpret the data	To further understand how the data would respond to the Thesis' research questions, the researcher must review in detail the final template, and fully comprehend it. There is no one right way to go about accomplishing this; it will depend on the study's objectives, general strategy, and particular methodological details. The most crucial aspects of the theme coding for the research questions should be prioritized, and trends in the analyzed data will be looked for.

As shown in Table 4.1 above, the initial stage in the analysis is to begin familiarizing oneself with the textual material, highlighting any text sections that stand out, and provide the investigator with information relevant to the research questions after determining any a priori themes (Waring and Wainwright, 2008). If any of the a priori themes apply to these text portions, they are classified appropriately. If not, the researcher creates new themes to include the pertinent information and organizes it into a preliminary starting template. The template is thereby altered as the study goes along, and this is a major useful trait of template analysis (Tabari, King and Egan, 2020). The starting template is typically created after a subset of the

data has been initially coded, for example, once the first few transcripts of a research study have been read and coded (Brooks *et al.,* 2015), and as such, the pilot test interviews in this study helped to shape the first template. After that, the obtained data set is applied using this initial template, which is then modified after carefully going over each interview transcript. When data are coded, certain codes are discovered that are present in the majority of interviews, and also other codes that might only be found in a small subset of interview transcripts (St. Pierre and Jackson, 2014). Following this procedure, the researcher codes all the remaining transcripts of the study onto the template, and this leads to the determination of the final template. Using this final template, the researcher can evaluate the data and present their findings in writing (King, Brooks and Tabari, 2018). In an effort to grasp the significance of the unprocessed data and uncover emerging themes, to be attentive throughout each phase of the analysis of the data, and to acquire a comprehensive grasp of the issues being researched, the researcher has employed template analysis. The procedures outlined above define successful qualitative research (Cassell and Symon, 2004), and the researcher deems that the methodological efforts expended during the data analysis stage have been productive enough, to satisfy these procedures effectively.

As a result of following the above-mentioned process, the initial conceptual framework has served as the foundation for the template's development. Additionally, according to numerous academics as per King (2012), the prominence of particular study topics might impact the establishment of an a priori theme and if these topics are well-established, one can reasonably anticipate that they will surface in the data (Dufrenne, 2009). The creation of the initial template thus resulted from analyzing the three pilot interviews with full-time university faculty members who have experience with e-learning courses. Many of the concepts mentioned in the original conceptual framework, even though present in the current literature, have not been sufficiently studied. The first template was developed using two-order elements subdivided into upper and lower tiers alongside their corresponding themes and subthemes, mostly as a consequence of the literature review, and it was focused on the issues that were coming to light as a result of the research objectives posed by the Thesis. The a priori first-order themes were related to the instructors' perceptions of the three main aspects of e-learning examined in this study: success factors for effectiveness, barriers to implementation, and related HE institutional management actions. As an example, theme 1 relates to and fulfills RQ1a of the Thesis which is to examine instructors' perceptions towards CSFs for e-learning effectiveness. Theme 2 relates to RQ1b which examines instructors' perceptions towards e-learning barriers for

implementation. Themes 1 and 2 included second-level subthemes which were gleaned from the preliminary factors identified in the extant literature. Themes 3 and 4 relate to RQs 2a and 2b which examine instructors' perceptions towards institutional management actions to address e-learning CSFs and their perceptions towards institutional management actions to address e-learning barriers respectively. Finally, theme 5 relates to the exploration of the combined resultant effect of the preceding themes, on instructors' acceptance of e-learning, which ties in with RQ3 of the Thesis. Any subtle differences at the third, fourth, and lesser tiers of the coding ladder have been considered as being unimportant during the initial template formulation stage (Vaughn and Turner, 2016).

The researcher was, therefore, able to familiarize himself with the main themes that should be covered by the empirical study, because of the template's straightforward format. Moreover, a methodical, iterative process of using the template, adapting it in light of any discovered limits, and then reusing it, are all practices that are strongly emphasized by template analysis. This motivated the researcher to keep reviewing the terminology used to describe the themes and how they connect to one another. Additionally, it made it simple for the researcher to maintain a record of the template's evolution all the way up to its finished state (Tabari, King and Egan, 2020).

4.2.1.2 Developing the template in NVivo 12

The researcher developed the initial template in accordance with King (2004) using the pilot interviews, the interview protocol, and the literature review as bases. In NVivo 12, nodes and child nodes have been created within the template, and these correspond to themes and subthemes of the study, respectively. The development of the template was additionally compliant with the 'Framework' Method which was developed by Lewis *et al.* (2003). This method employs using a tiered conceptual approach, whereby data is categorized and arranged in accordance with important themes, notions, and emerging classifications (Bonello and Meehan, 2019). The table below shows how the resultant themes from applying the procedures above align with the Thesis' research objectives and research questions.

Table 4.2: Initial template showing a priori themes and subthemes discovered from the literature review and the pilot interviews (Source: Author's own)

RQs	ROs	Theme Number	Themes and Subthemes
1a	1, 2	1	**Instructors' perceptions towards CSFs for e-learning effectiveness**
1a	2	1.1	learning quality and environment
1a	2	1.2	proper support and training conditions for instructors
1a	2	1.3	instructional design
1a	2	1.4	viewing the e-learning system as useful and easy to use
1a	2	1.5	technology infrastructure
1a	2	1.6	the characteristics of the instructor
1a	2	1.7	the characteristics of the students
1a	2	1.8	the course content
1a	2	1.9	the ease of system access
1a	2	1.10	social factors/interactions
1b	1, 2	2	**Instructors' perceptions towards e-learning barriers to implementation**
1b	2	2.1	Limited HEI resources
1b	2	2.2	Lack of administrative support
1b	2	2.3	Lack of technical support
1b	2	2.4	Lack of student motivation, participation and engagement
1b	2	2.5	Lack of personal interaction between instructors and students
1b	2	2.6	Lack of instructor IT competencies
1b	2	2.7	Increased workload
1b	2	2.8	Inadequate incentives, compensation and promotion opportunities
1b	2	2.9	Non-inclusion in decision making
1b	2	2.10	Resistance to change
2a	1, 3	3	**Instructors' perceptions towards institutional management actions to address e-learning CSFs**

2b	1, 3	4	**Instructors' perceptions towards institutional management actions to address e-learning barriers**
3	1, 4, 5	5	**Instructors' acceptance/rejection of e-learning**

The initial template was utilized by the researcher to examine the interview transcripts and at this point, each code's relevance was evaluated as part of the coding process. The interviews produced significant theoretical pillars that transformed the original conceptual framework, turning it into a more precise and reliable one. The analysis of the data gathered showed elements, which led to the transposition of certain themes and the development of additional subthemes, to comply with the empirical findings.

More precisely, after reading and examining all the interview transcripts, additional themes and subthemes were included onto the template, and certain subthemes were excluded from the final template. As previously outlined, the researcher followed the methodology prescribed by King (2004), according to which the template revision went on concurrently with the data analysis procedure until a saturation point was achieved. To guarantee that the significance and utility of themes and subthemes produced were sufficient, they were evaluated in accordance with the research objectives, and the template was also connected with hindsight to the research questions (Cunliffe, 2003). The data analysis of all 20 transcripts produced a number of fresh, emerging topics that were pertinent to the conceptual framework but unmentioned in the literature. Rigid iterative techniques for changing and refining the themes were used while creating the final template. To improve the general reflexivity and validity of the research, the researcher adhered to the recommendations of mentors and academic peers with commercial experience (Miles and Huberman, 1994; Guba and Lincoln,1994; Cunliffe, 2003). Using the template structure as a guide, systematic and logical evidence trails were created. The final data analysis template, shown in Table 4.3 below, became the most accurate portrayal of the concepts that make up this Thesis' eventual research outcome.

Table 4.3: Final template: Themes that correspond to the RQs and ROs of the study
(Source: Author's own)

RQs	ROs	Theme Number	Themes and Subthemes
1	1, 2	1	**Instructor perceptions towards e-learning effectiveness and implementation**
1	1, 2	1.1	Benefits of e-learning
1	1, 2	1.2	Challenges of e-learning
1a	1, 2	2	**Instructors' perceptions towards CSFs for e-learning effectiveness**
1a	2	2.1	learning quality and environment
1a	2	2.2	proper support and training conditions for instructors
1a	2	2.3	instructional design
1a	2	2.4	viewing the e-learning system as useful and easy to use
1a	2	2.5	technology infrastructure
1a	2	2.6	the characteristics of the instructor
1a	2	2.7	the characteristics of the students
1a	2	2.8	the course content
1a	2	2.9	the ease of system access
1a	2	2.10	social factors/interactions
1b	1,2	3	**Instructors' perceptions towards e-learning barriers to implementation**
1b	2	3.1	Limited HEI resources
1b	2	3.2	Lack of administrative support
1b	2	3.3	Lack of technical support
1b	2	3.4	Lack of student motivation, participation and engagement
1b	2	3.5	Lack of personal interaction between instructors and students
1b	2	3.6	Lack of instructor IT competencies
1b	2	3.7	Increased workload
1b	2	3.8	Resistance to change
1b	2	3.9	Lack of proper student assessment

1b	2	3.10	Non-compliance with accreditation criteria
2	**1, 3**	**4**	**Instructors' perceptions towards institutional management actions**
2a	3	4.1	Instructors' perceptions towards institutional management actions to address e-learning CSFs
2b	3	4.2	Instructors' perceptions towards institutional management actions to address e-learning barriers
3	**1, 4, 5**	**5**	**Instructors' acceptance of e-learning**
3	4, 5	5.1	Intrinsic factors influencing acceptance
3	4, 5	5.2	Extrinsic factors influencing acceptance

4.2.1.3 Using the template to carry out data analysis of the semi-structured interviews

After data collection, during the data analysis phase of the study, transcripts were categorized in accordance with participant replies to each question and/or the most important themes that emerged across the collection of interviews (Mack, 2005). The results are exhibited using a thematic presentation and direct quotes from participants. In order to highlight new insights and to close gaps, the explanation of findings also incorporates relevant theory and comparisons to the extant literature. Additionally, the triangulation of results is accomplished by categorizing, analyzing, and incorporating conceptual and theoretical themes to describe the Thesis' research outcomes (Braun and Clarke, 2021).

More precisely, the interview findings were separated into the five main themes as previously outlined within the final template, which are divided into further subthemes. This is in accordance with Allsop *et al.* (2022) who advise not exceeding seven core themes in a template. Theme 1 deals with general instructor perceptions towards e-learning effectiveness and implementation. This theme thus provides retorts to RQs 1, as well as to ROs 1 and 2. Theme 2 is constructed around the investigation of instructors' perceptions towards CSFs for e-learning effectiveness, and it answers RQ1a, RO1 and RO2. Theme 3 analyses the instructors' perceptions towards e-learning barriers to implementation. This theme sheds light on RQ1b, RO1 and RO2. Theme 4 looks at the instructors' perceptions towards institutional management actions to address e-learning CSFs and barriers. This theme provides answers to RQ2, RQ2a,

RQ2b, RO1 and RO3. Finally, theme 5 analyses the instructors' acceptance of e-learning and how this tendency might be influenced by associated management actions to achieve success factors for effectiveness and address barriers to implementation. This theme gives solutions to RQ3, RO1, RO4, and RO5. Additionally, every theme offers a discussion of results using secondary data and theoretical justification in order to offer novel perspectives on the issue and the research areas covered in this research.

There are various viewpoints and opinions about how and when to analyze qualitative data, as has been noted in the literature on qualitative research analysis. According to certain scholars, it is better to conduct the analysis once the entire data gathering process has been completed, while others prescribe conducting the analysis while data is still being gathered (Cassell and Symon, 2004). However, undertaking the analysis as a researcher goes along with the collection of data rather than waiting until the completion, may be a superior strategy, as is advised by Byrne (2022). As a result, transcription and coding onto the template began in June 2022 with the first interview and ended in November 2022 when the last interview was conducted. With the use of computer-assisted software, which in this case is NVivo 12, the coding of data began immediately following the transcription of the first interview. More details on the precise use of NVivo 12 are given in the subsequent section.

4.3 Using NVivo qualitative analysis software

One of the goals of the current study is to generate theories as part of the inductive approach to data analysis, and as such, the methodology used to analyze the empirical data and the utilization of template analysis, should clearly demonstrate the study's theoretical underpinnings and this calls for a sufficiently robust procedure. It was determined that the utilization of computer-assisted qualitative data analysis software was imperative due to the richness of the dataset concerning the in-depth semi-structured interviews to be evaluated. Its utilization would improve the thematic analysis' transparency and help manage the potentially enormous number of text passages derived from the interview transcripts. In doing so, the researcher chose to utilize a computer program that assists in qualitative data analysis despite the fact that it takes more time for the researcher to grow accustomed to it, and this decision was based on the idea that by following this approach, the researchers would improve his own skills in the area of thematic analysis considerably.

Software for qualitative data analysis is a hotly contested topic, and a novice researcher is frequently left feeling lost and confused while attempting to make sense of it all (Bonello and Meehan, 2019). Numerous analysts who employ qualitative methods have suggested that utilizing computer software when analyzing qualitative data makes it simpler to digest the data and eliminates human errors or personal biases (Garcia and Gluesing, 2013). Several methodological fields that utilize qualitative approaches to data analysis, such as grounded theory (Bringer *et al.*, 2004), interpretive phenomenological analysis (Clare *et al.*, 2008), and realist meta theory (Bergin, 2011) are a few examples of approaches that use computer-assisted qualitative data analysis software as a tool to help with data analysis in qualitative research, according to Dalkin *et al.* (2021). Over the past few years, a variety of software programs have been created and successfully employed by numerous researchers who used the qualitative technique (ibid), however, NVivo 12 was eventually used for this particular investigation after weighing the benefits and drawbacks of the available software, mostly due to the fact that it is a user-friendly tool, greatly facilitating the coding process required for thematic narrative analysis (Elliott-Mainwaring, 2021). Furthermore, NVivo 12 facilitated the thorough analysis of the in-depth semi-structured interviews that were utilized to collect the primary data for this study, by offering the ability to probe into the resultant relationships emerging across the generated data and explain them in more detail, using this software (ibid.).

NVivo 12 software was more specifically utilized to input data into the template used for the analysis, and to carry out the role of an aide in analyzing the outcomes of the empirical study for the present Thesis. The use of this program assisted in boosting the validity of the research by double-checking the data inputs and minimizing potential bias that is often associated with the analysis of qualitative data. A wide range of software programs now exists, that enable means to transcribe, enter, and perform basic to in-depth analysis thanks to the advancements of computer technology used in qualitative research, however, software critics claim that because the machine "does the analysis" rather than the researcher doing it "by hand," the software creates distance. It should therefore be noted that software programs are not necessarily designed to analyze data, but rather to assist in the analysis process, according to responses to this claim (Allsop *et al.,* 2022). This is because when creating systematic reviews of lived experiences, narrative methods that emphasize textual data, including transcripts of interviews, or even diary entries, require human involvement to create meaning and knowledge from the data (Pope et al, 2006). However, Dixon-Woods *et al.* (2005) have formerly voiced certain concerns about the absence of openness in the process of developing a narrative

synthesis due to the involvement of human judgment, and NVivo software overcomes this gap by offering a strong trail of evidence concerning the investigator's decision-making rationale throughout their path of processing textual data in narrative form (Elliott-Mainwaring, 2021). Also, by being able to capture theory generation while being immersed in the data, NVivo promotes transparency of the data analysis process and helps with the challenging process of theory building, refinement, and testing. As a result, it is possible to share and synthesize insights from the material obtained through the interviews more effectively as a whole rather than separately (Dalkin *et al.,* 2021).

It should be clear that even though software for computer-aided qualitative data analysis is frequently used in research studies to help with the administrative and manual components of coding and template construction, it is still entirely up to the researcher to make all judgments regarding the coding of empirical data and the interpretation of the results. Despite this, using computer-aided qualitative data analysis software nevertheless increases the efficiency of the coding and recovery procedures, and increases the level of transparency in the qualitative data analysis process by requiring investigators to be more transparent about the adopted practices throughout the analysis process, and encourages approaching the code development process in a tree-like manner (Bryman, 2008), thus maintaining a coherent structure. Additionally, according to King (2004), computerization helps resolve enormous amounts of text and complex coding schemes, enabling depth and sophistication in the analysis of raw data. Furthermore, quite a wide range of researchers suggest using computer programs for qualitative empirical data analysis as per Bazeley (2009) because this creates a simpler, more effective and systematic process (Miles and Huberman, 1994), which is also more trustworthy, precise, and clearer (Gibbs, 2002).

4.3.1 The reasoning for choosing NVivo 12

NVivo 12 has therefore been chosen as the best qualitative analysis program for the needs of the present research to organize and manage the empirical data and the researcher proceeds to outline the more detailed and practical reasons behind this rationale which is based on a number of factors.

First, according to Coffey and Atkinson (1996), the right blend between the kind of data being analyzed and the methodological approach should be taken into consideration when choosing

the software tool to be used for computer-aided qualitative data analysis. NVivo qualitative software and template analysis (King, 2004) are the two main analysis tools employed in the empirical part of this study, and to achieve credibility when assessing enormous amounts of rich empirical data, a sufficiently elaborate approach had to be adopted (Elliott-Mainwaring, 2021). A formal conversation with the researcher's three supervisors and advice from other qualified qualitative researchers in the HE e-learning industry were held to justify the author's decision to use this analytical permutation. The researcher points out that renowned experts and scholars, including King (2004), Bryman (2008), and Saunders, Lewis and Thornhill (2019), have applied computer-assisted qualitative data analysis software, which the researcher used to strengthen the case for such an arrangement and the choice to use NVivo 12.

Second, NVivo is a software for qualitative data analysis that improves the speed and accuracy of the data analysis procedure. For instance, datasets can be grouped, connected, and matched before being examined, to meet the research objective without limiting retrieval of the original data or the settings where it was acquired (Bazeley, 2009). NVivo 12 is also capable of generating themes after collecting the raw data, and these themes could be described as a result of performing the data analysis procedure (Dalkin *et al.,* 2021). Additionally, NVivo 12 offers a straightforward user interface that is simple to understand and use, as well as versatile searching, saving, and restructuring functions of information (Bonello and Meehan, 2019). Furthermore, NVivo 12 was utilized to organize the empirical data in its entirety and make sure that no data has been chosen arbitrarily while composing the study's conclusions (Elliott-Mainwaring, 2021). The main advantages of using NVivo in research are handling data and associated concepts, creating a graphic reproduction, probing into queries of varying complexity, and reporting qualitative data. In addition, this program debuted in 1999 thereby being circulated on the market for over 20 years, it is widely used in qualitative research, and the most recent versions of NVivo such as 11 and 12, present a comprehensive tool that offers in-depth insights into different elements of research respondents' actions, perspectives, cultures, and issues they might be facing (Bonello and Meehan, 2019). Therefore, various researchers have specifically emphasized how widely NVivo is used to evaluate qualitative data or review literature due to these functionalities (Bazeley, 2009). Finally, the researcher was successful in obtaining an NVivo 12 license, and other software that the researcher explored were not taken into consideration since they required more time for the researcher to become familiar with their complicated user interfaces, were more challenging to access and use, and were more expensive to obtain.

In conclusion, the NVivo software was created to assist researchers in organizing and analyzing qualitative data (King, 2012; Bell and Bryman, 2007) and its principal purposes are to help researchers preserve structured and effective recordings of their thoughts, searches, and analyses (Dalkin *et al.,* 2021), as well as to give academics access to a number of tools that will aid them in analyzing the relationships in textual data (Bazeley, 2009). With the help of the NVivo 12 software, the time-consuming work of actually carrying out the analysis, which involved coding, organizing, handling, and saving the enormous amount of texts deriving from the transcripts of the semi-structured interviews, was simplified, streamlined, and completed more effectively. This was possible because the interview transcripts were imported into NVivo 12 in English, which is the language in which all interviews took place, as independent Word documents, arranged with the aid of the program, and subsequently, the researcher's analysis and interpretation of the data were facilitated more easily. Lastly, the creation of the Thesis' final conceptual framework benefited considerably from the use of NVivo as well, since it was based on the final template that had transpired in NVivo 12 as a result of coding and analyzing all the data. An inserted interview transcript into NVivo 12 is shown below.

Figure 4.1: Inserted interview transcripts into NVivo 12
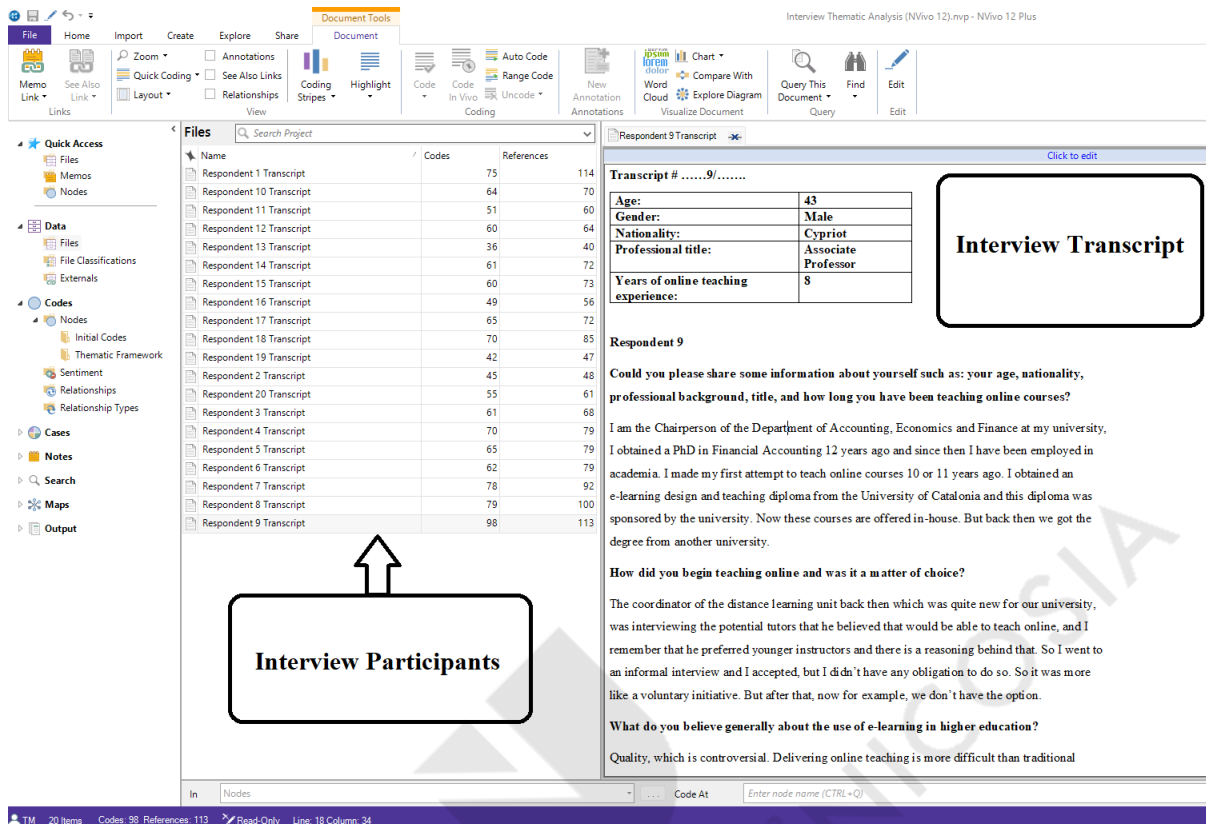
4.4 Data analysis and reduction

Data analysis is crucial to qualitative research because it condenses factual data and turns it into insightful conclusions (Patton, 2005). As described by Miles and Huberman (1994), the main steps of analyzing data are: data reduction, data display, and conclusion drawing and verification. According to Miles and Huberman (1994), data reduction encompasses the selection, concentration, simplification, and transformation of primary data derived from transcripts or other source documents, and it represents a useful process to follow in performing proper data analysis. While performing data reduction, the volume of data must initially be processed and minimized or redesigned in a substantive fashion. Data reduction is the term used to characterize this aspect of qualitative data analysis by Miles and Huberman (1994). The process of choosing, concentrating, compressing, extracting, and changing the data that appear in typewritten notes or transcriptions is known as data reduction. The data must be altered in order to make them comprehensible in terms of the problems being tackled, in addition to being compressed for manageability's sake.

Data reduction frequently necessitates decisions on which components of the gathered data should be highlighted, diminished, or altogether disregarded for the objectives of the current project. Beginners frequently miss the fact that the statistics, even at this point, do not speak for themselves. In a futile attempt to be "absolutely objective," many people make the mistake of presenting a sizable amount of unassimilated and uncategorized data for the reader's consumption in both quantitative and qualitative analysis. According to selectivity principles, the analyst chooses which data will be selected out for description in a qualitative analysis. Typically, a mix of deductive and inductive analysis is used for this. Although predetermined study questions constrain first categorizations, the qualitative analyst should be open to extrapolating new interpretations from the data at hand.

NVivo 12 computer-assisted qualitative software was used to carry out the process of reduction and coding of the data, also known as the procedure of detecting significant themes and creating indexing classifications for them (King, Brooks and Tabari, 2018). The researcher firstly engaged in free coding and subsequently attempted to combine similar nodes, and also eliminate or reduce insignificant nodes. In order to do this, the free nodes, being mostly informative, generic, contributor-determined, and singular groupings or otherwise components of significance with no apparent linkages or relationships to one another, had to be created from the data's original textual context or transcripts (Bonello and Meehan, 2019). During the process of organizing the free codes into meaningful themes and subthemes, when possible, Alsop *et al.* (2022) recommend adopting combination over removal, and, to save as much information as feasible, elimination should only be used in cases where combination is not possible. Codes that are suitably unique from one another may prevent combination from being possible and elimination can be used as a tool when this condition is present. As opposed to manually coding the data and utilizing manual underlining used in template analysis, the NVivo software package makes it very simple to code straightaway, line by line, frequently with reference to the produced template and important nodes (Dalkin *et al.,* 2021).

The researcher adopted the open coding methodology in terms of creating themes and subthemes from the collected data. Open coding is defined as reading through an interview and jotting down a quick conceptual code that reflects what the subject is saying (Allsop *et al.,* 2022). There are three different approaches to open coding. The first technique, known as the entire interview method, is employed in projects that examine transcripts word-for-word, beginning to end. This method is typically used—but not always—when no previous transcript

coding has been done. The second is the deep dive method, which is appropriate for projects that are focused on conducting in-depth analyses of already coded work. The third technique, known as the keyword method, is employed in projects that examine a particular element of transcripts discovered through keyword searches (ibid.). The researcher selected the entire interview method, as no previous transcriptions of the interviews had taken place, and the researcher was interested to examine transcripts word-for-word, beginning to end and discern meaningful patterns and relationships arising from the data. Consequently, the researcher applied the retroduction methodology to analyze the data, as set out in Chapter 3. Firstly, through retroduction, the researcher strives to conduct a proposed re-explanation of the evident themes that are preferably shared by research respondents or gleaned through past facts, in order to merge empirical results with prior theoretical ideas found from extant literature. Second, retroduction is concerned with establishing the interrelationships between the identified elements, or in other words the causal mechanisms that might exist between them. This procedure aims to create a level of interconnectivity between observable occurrences (Danemark *et al.*, 2002).

This approach was applied continuously in this study with the researcher transcribing the semi-structured interviews by creating new nodes in NVivo 12 as well as clustering certain sentences or paragraphs into existing nodes in some circumstances. To address the research questions of the study, data reduction of the collected data was carried out until rather significant themes emerged (Danemark *et al.*, 2002). The researcher used the indexing procedure, which involved systematically going over the developing theme framework made up of free nodes. Data had first been deconstructed from transcripts' basic chronology to their initial non-hierarchical coding. In order to meet the research questions and study objectives, indexing attempted to reconstruct the data into a framework. Following the review, some nodes were combined, others were given new names, and yet others were grouped into similar code groups. The flat organized free nodes evolved into a more sophisticated hierarchical structure consisting of tree nodes, and theoretical patterns started to emerge as the emergent concepts generated from the data were enhanced through the rebuilding of the data (Bonello and Meehan, 2019).

An illustration of how NVivo 12 facilitated the administration of themes and the coding process is shown in Figure 4.2.

Figure 4.2: Management of themes and nodes development screenshot within NVivo 12
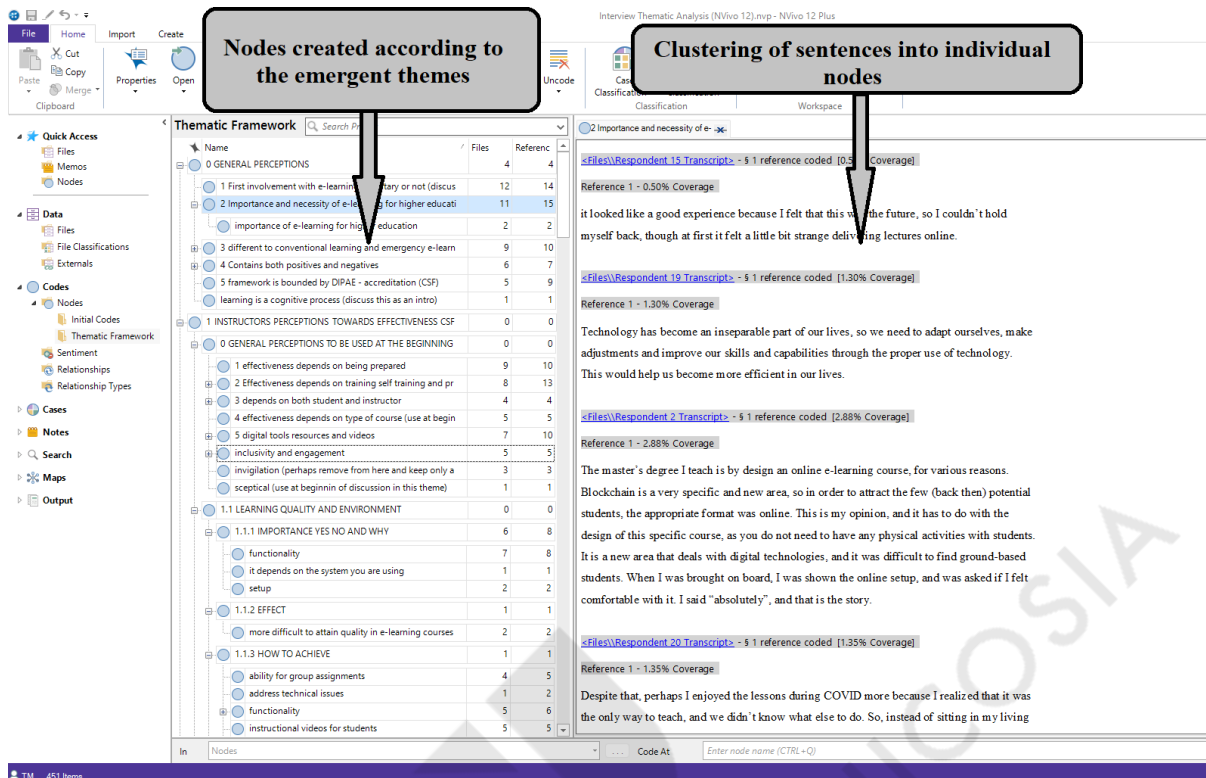
4.4.1 Creation of the corresponding nodes in NVivo 12

According to King *et al.* (2004), the researcher was able to familiarize himself with the data by studying the texts again. In accordance, the researcher carefully examined the data and, with the use of NVivo 12, was able to build emergent codes as well as establish causal relationships among the codes and the themes. The supervisors provided the researcher with helpful advice about the definition of the themes to make sure that their definitions would eventually aid in the examination of the data and properly answer the research objectives (ibid.).

Initial free coding in NVivo 12

The appropriate codes and child nodes in NVivo 12 are shown in the next figures. These resources made it easier for the researcher to look into the connections in the transcripts. The researcher controlled the data and kept the concepts that arose using these working displays as an example. Figure 4.3, for instance, shows how the study categorized CSFs.

Figure 4.3: Working Screen in NVivo 12 of instructors' perceptions to e-learning CSFs

Figure 4.4 shows the working screen categorizing instructors' perceptions to e-learning barriers to implementation.

Figure 4.4: Working Screen in NVivo 12 of instructors' perceptions to e-learning barriers to implementation
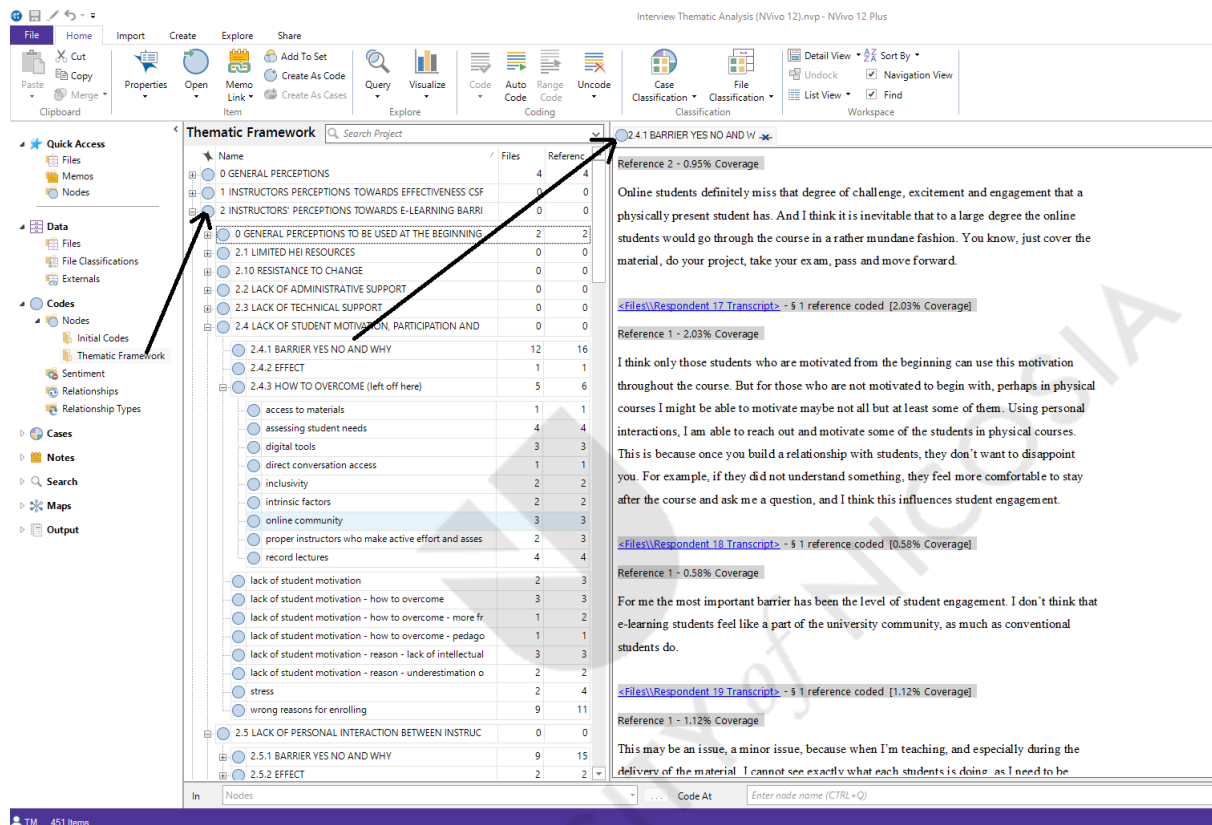
Figure 4.5 shows the working screen categorizing instructors' perceptions to management actions concerning CSFs.

Figure 4.5: Working Screen in NVivo 12 of instructors' perceptions to management actions concerning CSFs
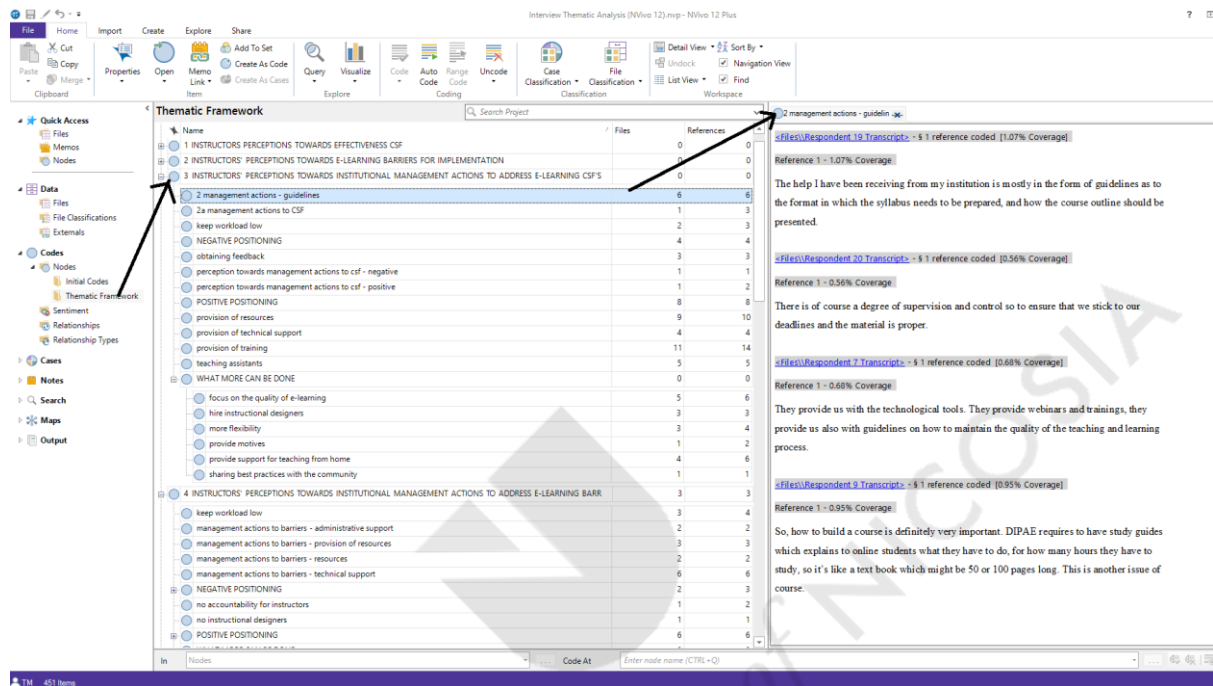
Figure 4.6 shows the working screen categorizing instructors' perceptions to management actions concerning barriers.

Figure 4.6: Working Screen in NVivo 12 of instructors' perceptions to management actions concerning barriers
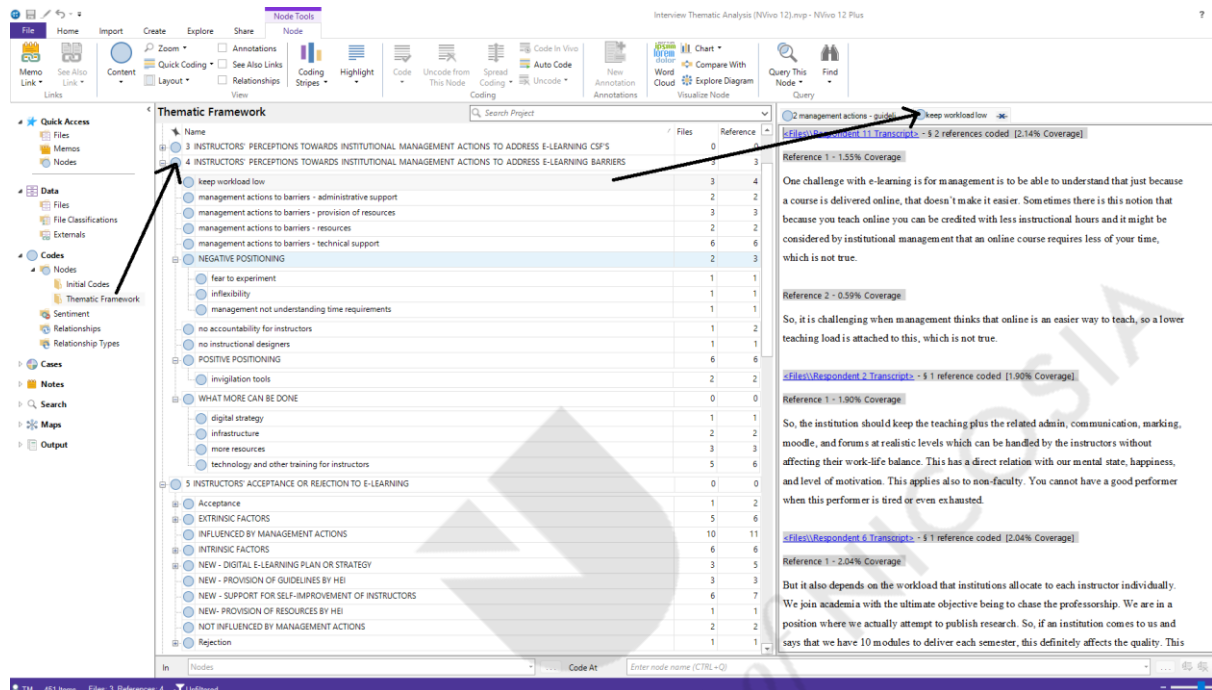
Figure 4.7 shows the working screen categorizing instructors' perceptions to acceptance and rejection of e-learning.

Figure 4.7: Working Screen in NVivo 12 of instructors' acceptance and rejection of e-learning
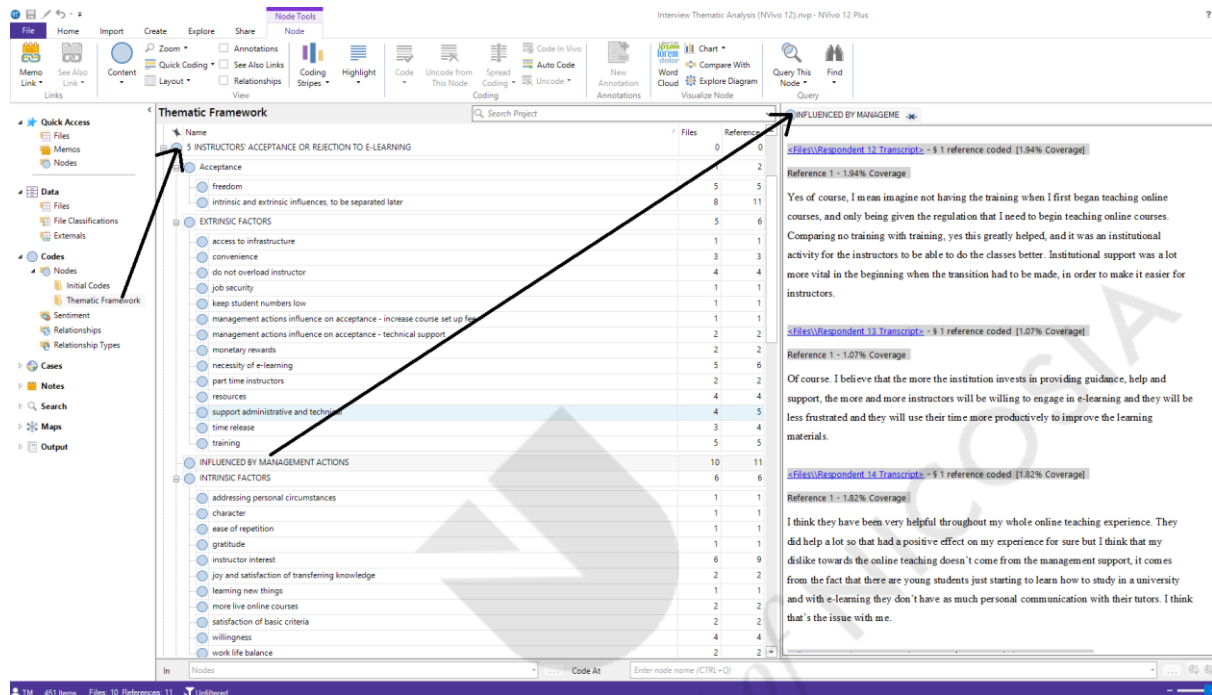
4.5 Presentation of the data analysis results

King (2004) recommends three different ways to report the data analysis findings. The first strategy involves presenting groups of distinct respondents, and subsequently discussing common areas and discrepancies between informants' responses. The key benefit of this approach is that it affirms that the analysis does not become overly isolated from the stories of respondents and provides the reader with a clear grasp of the perceptions of the research participants. The major drawback of this strategy is that it consumes a significant number of word count, which could be problematic when word counts are concerned and cause the reader to not see the broader picture due to the extensive quantity of facts provided for each individual. The second strategy is to use examples from each interview transcript to highlight key aspects as the researcher shows an account built around the key themes they've discovered. This method is especially helpful when there is a strict word limit since it results in a clear and succinct overview of the most significant facts. This approach, however, has the potential to

overgeneralize and cause the reader to lose track of the experiences of distinct respondents. The third strategy uses individual replies to highlight major themes in a thematic demonstration of the findings, combining the first two strategies in a beneficial way. However, using this strategy, it may be challenging to choose an appropriate respondent reply to demonstrate the major themes identified (Taylor, Bogdan and DeVault, 2015).

Through a responsive interaction between the researcher and informants, the current study seeks to analyze the phenomena being investigated from a critical realism perspective (Cunliffe, 2003). Therefore, when writing up the findings, it is important to prioritize the respondents' words and expressions while also including the author's own expertise and understanding of the main topics and classifications revealed by the observed data. Given this, the current study mostly employed the last technique while also including components from the second. Themes were specifically employed to structure the data analysis, and general samples from many interview transcripts and also further in-depth illustrative quotations from particular transcripts were used to highlight each subject. Since it needs to be considered as a continuous process that includes analysis and interpretation, the writing-up phase provided additional and refined themes and thematic descriptions. One of the main issues in using template analysis is deciding when to finalize the template's development. According to King (2004), it is sufficient to finalize the template once all texts pertinent to the template have been examined thoroughly more than three times, and this recommendation was followed by the researcher. Additionally, the author's supervisors were consulted to determine if the final template that was produced is clear. In conclusion, Table 4.4 below provides an illustration of the overall data analysis procedure.

Table 4.4: Data analysis process (Source: Author's own)

No.	Activities	Purpose
1	Conducting 3 Pilot interviews	Testing of the interview protocol and the participants' responses to questions
2	Conducting 20 Formal semi-structured in-depth interviews	Gathering primary data

3	Transcription of interviews	Recording of participants' words verbatim, and carrying out a reflection on participants' responses, using Microsoft Word software
4	Reading the transcripts carefully more than once	Familiarization of the collected information
5	Inputting data into NVivo 12 and creation of nodes as per the initial template	Organization and comprehension of the collected data
6	Organizing facts, establishing relationships, underlying mechanisms, and developing the final template	Determining the basic template's usefulness, whether further nodes are required, and creating more meaningful relationships between the data.
7	Presenting the data in a thematic manner and utilizing specific quotes by participants to pinpoint key themes	Showcasing findings to readers of the Thesis
8	Discussion of emergent outcomes as connected with the extant literature	Presenting and discussing the connection of emergent outcomes with existing knowledge and explaining new insights

4.6 Conclusion

The data analysis methods used in the present Thesis were outlined in Chapter 4, as well as the theory behind thematic analysis and template analysis was explained. The data analysis planning strategies, methods in use, and software utilized in qualitative data analysis adopted by the researcher were also presented and explained. The next chapter focuses on the presentation and discussion of the findings and results of the empirical research.

CHAPTER 5 DISCUSSION OF FINDINGS AND RESULTS

5.0 Introduction

This chapter showcases the empirical findings of the study that the researcher has gathered. These are presented and interpreted by displaying, analyzing, and discussing the results of the 20 in-depth semi-structured interviews that were conducted with informants. The structure of this chapter is designed around the themes and subthemes that were primarily determined from previous literature and comprised the Thesis' initial conceptual framework as preliminary factors and using the final template as a structure. Finally, the results of the template analysis are reported and a discussion of each of the themes is presented, enfolding with the extant literature.

5.1 Discussion of Themes

Prior to moving on to presenting and discussing the themes, it is critical to mention that the research's general outcomes emphasize the significance of this study because, in response to the ice-breaking questions, every participant spoke about how e-learning has transformed people's lives, including the ability of all students to have easier access to education, regardless of geographical location, and especially during the challenging times of the COVID-19 pandemic. Most respondents also mentioned that the use of e-learning in higher education is of utmost importance, as it is now an unavoidable part of everyday life, and therefore innovative processes are needed to ensure that capacity building in HE is reinforced through the benefits provided by e-learning.

To facilitate a thorough discussion of the findings, each theme and subtheme has been illustrated using examples taken from the narrative quotes of the interviewees. The discussion that follows is undertaken to cross-reference the empirical results with the established concepts and frameworks that have been evaluated in Chapter 2 and Chapter 3, as a result of the outcomes under each theme. Accordingly, the relationship between the empirical facts and conceptual theories is presented. Some of the empirical findings are supported by prior studies, while other findings have established novel insights that broaden the theoretical and practical understandings of instructors' perspectives and acceptance of e-learning among scholars and practitioners in the field of e-learning management. The five major themes arising from the final template serve as the overall framework for this chapter.

5.1.1 Ice-breaker and background questions

These were used to set the scene for the interviews and to obtain a general overview of how instructors in HE feel about e-learning overall. The ice-breaker question (IQ1) served to reveal the instructors' background and experience and make them feel more at ease with the interviewer, obtain an overview and set the scene for the more detailed, deeper questions to be asked thereafter. The researcher has chosen Critical Realism as the research philosophy for the present study. It emphasizes both the deductive and inductive reasoning, and this is the approach that the research adopted while conducting the in-depth semi-structured interviews. It should be noted that all informants had at least 3 years teaching experience with delivering online courses, and all of them were currently teaching online courses at the timing of the interviews.

As a result of the brief discussion that took place at the beginning of every interview, and after the ice-breaker question (IQ1) was answered by respondents, the interviewer moved on with the questions that reveal instructors' general perceptions towards e-learning effectiveness and implementation in the context of the interviews.

5.1.2 Theme 1: Instructor perceptions to e-learning effectiveness and implementation

The analysis stems from IQ1 and IQ2, and is based on the categorisation of participants' responses, when asked about their overall perceptions toward e-learning effectiveness and implementation in HE, what they generally believe about e-learning and whether they enjoy the experience they get from teaching online courses.

Informants were asked to describe how they first became involved with online teaching, and whether this was something that happened voluntarily or if it was necessitated by circumstances prevailing at that time. Most of the respondents stated that they had initially been involved in online teaching because it was necessary to do so. Answers indicate that prior to the pandemic, the necessity to get involved in e-learning courses mostly arose due to institutional decisions concerning strategy and expansion. A large part of the respondents are citing COVID-19 as another major reason for e-learning becoming compulsory in more recent years, despite the fact that they might have gotten involved in it voluntarily in the first place while also recognizing that it is something necessary in HE today.

Following, a large part of the respondents went on to further elaborate the importance and the necessity of e-learning in higher education. There was a large consensus in this area with 16 of the respondents recognizing the aspects of importance and necessity of e-learning in higher education, as shown through their general perspectives on the topic. The respondents are attributing this necessity and importance to various factors such as technology, digitization and the COVID-19 pandemic.

Some of the respondents have stated that e-learning is the future even though a few instructors have shared their concerns regarding the quality of e-learning with the increased number of courses provided. Consequently, most respondents referred to the fact that e-learning creates both benefits and challenges, thus indicating that there is a balanced outlook on the topic.

E-learning creates both benefits and challenges

Respondent 18 sums up this balanced outlook on the fact that e-learning holds both benefits and challenges for participants:

> *"There are pros and cons to teaching online, but looking at things in a balanced way, you might lose a little bit in terms of interaction, that you would have had if students were all onsite. But, on the other hand, if you are to reach students in other continents that you would have never had the opportunity to acquire these skills."* (R.18).

This was complemented by remarks from other respondents as well, who have concurred that there are indeed positives and negatives, thus reinforcing this balanced view. Respondent 14 indicated that the benefits and challenges coexist, and instructors must accept the fact that they will be experiencing both.

> *"Teaching online might save you hours of driving, you know going to lectures, and you are in an environment where you feel comfortable, but you need to be on your own while you are teaching either from home or from your office, because you don't want any loud noises or people around you"* (R.14).

The researcher next showcases the specific inferences instructors made to the benefits and challenges that they associate with teaching online courses, thus giving rise to subthemes 1.1 and 1.2 of the template analysis respectively.

5.1.2.1 Sub Theme 1.1: Benefits of e-learning

This was an emergent subtheme that was examined through IQ2 and IQ3. Instructors generally associate benefits with an enjoyable teaching experience, flexibility, preparation of students for their professional lives, and customizability. Respondents have indicated that the usefulness of e-learning is supported by the fact that it is a cost-effective way of course delivery:

> *"E-learning courses are reducing the cost for both the student and the university. Even costs associated with the teaching faculty and administrative staff. It's useful! I cannot deny it"* (R.20).

Despite this, there is a consensus in respondents' answers, that e-learning cannot be considered as a replacement to the conventional method, thus indicating that a different approach is required to make it effective. Institutional efforts should be concentrated on obtaining the benefits provided by e-learning, rather than focusing on how it can replace conventional learning.

> *"Actually, e-learning is a useful mode of learning, but of course it cannot replace face-to-face classes, this is for sure"* (R.19).

The answers of respondents in terms of the benefits they see in e-learning have been categorized as per the subthemes below:

E-learning offers an enjoyable and useful experience

The answers suggest that e-learning can provide an enjoyable and useful experience, if it is supplemented by proper use of technology, as well as with a maturity level of students, that enables them to truly understand the requirements to be an e-learning student.

> *"I really enjoy the online teaching experience. With advancements in technology, and the various tools that e-learning offers, you feel like you are in a good virtual online learning environment and this is good for the instructors and also for the students"* (R.19).

> *"I would say that I enjoy the experience, if students understand that the process involves a lot of self-learning or independent learning because the students play a big part in this experience"* (R.11).

If these criteria are met, the experience is more enjoyable for instructors, as e-learning facilitates a convenient process of covering practical aspects of the course syllabus.

E-learning offers flexibility and helps to reach out to more students

Another benefit associated with e-learning, is that with the amount of flexibility it has, it can provide opportunities to students to receive high-quality education and to obtain a degree, which would otherwise not have been possible as per Respondent 12:

> *"Online teaching provides the flexibility for everyone to participate, whether they are in the same country or abroad, so this is very important since if you want to attract students all over the world, and because there are no distance limitations."* (R.12).

This enables HEIs to reach out to a more diverse population of learners by reducing physical or time barriers, and this way HE has generally become more accessible to a wider part of the population.

Technology helps students to study and prepare for their future lives

Respondent 11 has shared that teachers at university level, incorporating technology in their courses, become an example to their students, and this is very useful in preparing students for the demands that will be placed on them throughout the course of their future professional lives. This view was shared by most respondents, and the answer by Respondent 19 further demonstrates this:

> *"My students of today will be tomorrow's business leaders, and so it is good to provide them with more technological training and tools. E-learning courses would bring students in line with the technology that is used in businesses today. They will be faced with these things in the real world when they go out to find a job"* (R.19).

This indicates the life-long benefits that students can be expecting to obtain by attending e-learning courses.

E-learning offers the ability for customization and the creation of microcredentials

Another benefit found in e-learning courses, as pointed out by Respondent 8, is related to the modernization of the HE process, in the sense that the functions it provides, enable HEIs to consider options for introducing the element of micro-credentials within courses.

"One other thing that applies especially to masters' degree studies, which is one of the strengths of e-learning is the asymmetric learning approach. To allow somebody to have a truly customizable experience for them. An MBA is very practical, so such a course would be useful for it, however you can also turn it into a microcredential and obtaining it could be more or less automatic" (R.8).

With advances in technology, and the way these shape the needs of the future labor market, HEIs will be in a better position to respond to the demands of the market, by providing students with customizable solutions for qualifications that will be necessary for them to be competitive in their future careers.

5.1.2.2 Sub Theme 1.2: Challenges of e-learning

This was an emergent subtheme that was examined through IQ2 and IQ3. Instructors generally associate the negative aspects of e-learning with themes like lower quality, stress and fatigue, lack of interactions with students and issues with the proper validations of student assignments. The perceived challenges are mainly associated with a lower level of quality in e-learning courses as compared to conventional ones, and this is in part due to reduced interactions between students and instructors, as well as the overwhelmingly varying levels and backgrounds of students attending e-learning courses. This has the effect of making e-learning feel more challenging for the instructors and a representative quote is given by Respondent 16:

"To be honest with you it doesn't relate to something positive in my mind, especially when we must teach students who do not have a very good and strong background. Also, I have a negative experience because for many lectures I was feeling that I was talking to myself" (R.16).

Summing up these sentiments, Respondent 8 has shared that they believe the true potential of e-learning in HE is currently quite underutilized by HEIs, and there is a lot of room for growth and improvement in terms of using e-learning to build capacity in HE:

"I think the genuine ability of e-learning to really provide capacity building in higher education is underprovided in the academic space. I really think so, because the academic space has a lot of restrictions on how to make really good use of it. So, I feel that in higher education, the potential of e-learning is under-utilized" (R.8).

Unless these challenges are dealt with by institutions, instructors perceive that the true potential of HE in terms of capacity building would not be achieved with e-learning courses. The ideas that have been shared by informants were further broken down and thematically analyzed to derive the following subthemes.

Technological stress for instructors and students

The issue of technological stress relates to the level of technological literacy an instructor has, and this is also related to the extent of technical support that would need to be obtained by an instructor, so as to reduce the barriers they face in their e-learning courses:

> *"If the teacher doesn't have the technological knowledge to support their online teaching, that means that they need to find it from somebody else and that might add further stress to their experience as well, like not knowing what to do, running out of time, not being able to help students properly, and so they need to keep asking for support"* (R.14).

This issue is further exacerbated by the extent of technological literacy that students in an e-learning course also possess, since the overall experience is dependent on their level of comprehension of how the VLE functions, and it is something over which the instructor does not have control:

> *"I do find the experience a bit stressful, for a couple of reasons. I find it stressful because students often have a varied ability of understanding of the VLE space. And for me, sometimes I am a bit slow in picking up when something might not be going well, and therefore sometimes I am not able to support the students as I would ideally want them to"* (R.8).

Therefore, HEIs need to consider the extent of technological literacy of attendees of e-learning courses, to try to limit the potential barriers arising due to increased levels of technological stress for the attendees.

Less interaction with students as compared to conventional courses due to asynchronous nature of e-learning

Instructors have indicated that asynchronous pre-recorded lectures allow for the least student interaction as they don't get to interact with them in real time:

> *"To tell you the truth, I don't like it when courses are only delivered asynchronously. I mean, it is easier for me, I just prepare all of the material once and I throw them on the platform, and then I just monitor the students' activity, if they complete the exercises, and I reply to some emails. But I don't like that."* (R.13).

Respondent 15 has stated that "*in a nutshell, online is essentially teaching a course on autopilot, as the students are mostly studying by themselves*" and ultimately the role of the lecturer is to just facilitate and project-manage the process while being available to answer student questions that they taught themselves. This seems to be affecting the ability of the instructor to effectively convey knowledge, as indicated by the following quote:

> *"I have great respect for self-education, but as it stands now in terms of the actual process system and the technological restrictions and confines of what we have today, means that a lecturer cannot physically or time-wise convey the knowledge, experience, frame of thinking, philosophy, attitude of his field to students online"* (R.15).

As a result of the asynchronous nature of e-learning courses and the perceived lack of interaction with students, instructors also cite problems that have to do with reduced engagement from students even during synchronous e-lectures:

> *"On behalf of the students, the online teaching is not so engaging to be honest, so from my experience with online teaching, even though you try to make the class more interactive, the negative thing at least in the beginning was that the students weren't engaged in class, they were just passive readers, passively auditing the class"* (R.12).

Respondent 20 has opined that it is easier for students to drift off in an online classroom due to its more distant nature, however in the physical classroom, *"being face-to-face, being physical, if the lecturer wants, he can try to stop it"*. There is a feeling that in an online classroom, the instructor does not really have the same level of power to try to stop students from not engaging with the course and making them interact more.

Teaching e-learning courses is demanding and tiring

Respondents have attributed this to the fact that the less student engagement exists, and the more material that needs to be covered, the higher the amount of effort that would need to be expended by an online instructor, to make sure that they convey the knowledge to students:

> *"E-learning takes a lot more effort. After each WebEx session I'm very tired, especially because I have to cover three chapters for example since you need to cover the material in three sessions but also because it takes a lot of your energy to make sure that students keep their interest"* (R.1).

This issue seems to be intensified when an institution is initially starting to deliver courses online, or it is the first time that an instructor gets involved in teaching an online course. This is because a lot of effort is required during the early stages of a new course preparation, since knowledge around the area is limited and this requires even more time to be invested on the part of instructors. According to Respondent 5, in the first efforts of their university to create an online programme, they just had basic capability to set up one course, and no support in terms of technology which made it a lot more demanding for instructors jumping onboard this initiative.

Difficult to validate and assess student exams and assignments

The main reservations that respondents have in this area, relate to the quality of assessment methods. Respondent 15 states that they are not convinced that the current methods of validation are full-proof in terms of detecting cheating and plagiarism, and because instructors don't get to interact with e-learning students, this removes the opportunity to ask them questions to try to assess their level of understanding, and therefore reinforce the certainty that the grade they are being awarded is indeed reflective of their knowledge. Respondent 10's concerns have also been shown below:

> *"The main issue with e-learning effectiveness, is not being able to validate whether it is the genuine work of the student in terms of their assignments, and also during the exams themselves, if there is no proper invigilation process, you cannot actually verify that it is the student sitting for the exam. I am very worried about this, especially with regards to assignments, I mean having the assignment being prepared by the student or by someone else. That is my main concern"* (R.10).

E-learning invigilation processes need to be strengthened, since this would be one of the ways to further ensure proper assessment and validation of students' grades in online exams and assignments.

5.1.2.3 Discussion of theme 1 and its sub themes

According to the literature review, there is acknowledgement that e-learning presents both benefits and challenges, and a better knowledge of both is needed (Alhabeeb and Rowley, 2017). This is in line with the empirical findings, since most respondents referred to the fact that e-learning provides both and elaborated with specific examples. This corresponds to the extant literature, since some studies have shown that instructors believe that e-learning could even be superior to traditional classroom instruction (ibid.), whereas others indicate that instructor perceptions towards e-learning remain mostly negative (Kumar *et al.,* 2019), thus validating the existence of both benefits and challenges. The instructor attitudes towards challenges and barriers have been identified is important to the implementation of e-learning education especially post COVID-19 and considering the increasing demands for alternative forms of learning delivery (Al-Karaki *et al.,* 2021).

The findings indicate that instructors associate some benefits of e-learning with reduced cost, however they have also acknowledged that it cannot replace physical courses. This is confirmed by the literature since e-learning research consistently refers to the promise and opportunity of its cost-effectiveness in contrast to face-to-face instruction as per Meinert *et al.* (2019), however, according to Harrison *et al.* (2017) many instructors do not believe that the effectiveness of the e-learning approach matches that of the traditional way.

Informants provided a list of e-learning benefits, and this is in line with Harrison *et al.* (2017), according to whom quite a few instructors see benefits for their students' learning experience. Respondents have mentioned that one of the benefits they see is that e-learning provides an enjoyable and useful experience. Noesgaard and Ørngreen (2015) have discerned that satisfaction and an enjoyable experience is one of the main factors associated with a positive experience, and enjoyment and self-efficacy in the use of e-learning has also been identified as a benefit by Meriem and Youssef (2020). This is corroborated by Olasina (2019) who has mentioned perceived enjoyment as a benefit of e-learning. Another benefit crystalizing through the empirical findings is the flexibility and wider student reach e-learning offers. This is corroborated by reference with the literature, since Cherry and Flora (2017) claim that with the

right approach, e-learning instructors will be able to reap the benefits from the flexibility, convenience, and wide outreach of e-learning classes. The statements made by respondents concerning e-learning's wider reach are confirmed by literature, as Volungevičien *et al.* (2020) state that an ever-increasing number of students are starting to pursue alternative learning routes as well as by Vululleh (2018), according to whom, e-learning has been shown to provide a platform for flexible learning, as it supports modern students' learning styles. The empirical findings also show that instructors associate e-learning benefits with customizability. This is validated by extant literature since Choudhury and Pattnaik (2020) have deduced that course customization and flexibility are identified to be major advantages of e-learning. The novel insights gleaned by the empirical results, are that instructors have suggested that this ability for customization might be better utilized by introducing micro-credentials into e-learning degrees, that could be matched to specific qualifications that might be desired by employers in the future labor markets. Existing literature has covered the benefits that e-learning students obtain from attending courses concerning the theoretical skills they gain relevant to their qualification. Further novel insights obtained from the empirical study, is instructors also referring to the fact that the e-learning mode helps students in their future professional lives, because the technological skills they obtain by following this mode of learning are also compliant with the technological skills they will be required to exhibit in their future careers.

Respondents referred to technological stress as one of the main challenges associated with e-learning, and this is in line with literature since Meriem and Youssef (2020) propose that computer anxiety is a challenge, and this is corroborated by Alqahtani and Rajkhan (2020) according to whom one of the challenges currently faced by instructors is the high level of IT knowledge demanded from the instructors. Technological anxiety has also been linked to low acceptance and success rates of e-learning in the literature (Barclay, Donalds and Osei-Bryson, 2018). Another difficulty respondents cited is less interaction with students, and this is compliant with the theoretical findings from the literature review, since lack of interaction has been identified as one of the most prevalent challenges with e-learning (Farhan *et al.,* 2019). Furthermore, if there is no effective relationship and communication between students and instructor, this is not conducive towards the creation of a successful e-learning process, instructors would not perceive any benefits from the process, and therefore would not accept it (Lee, Song and Hong, 2019). Respondents have mentioned that another challenge of e-learning courses is that they are too demanding and tiring. According to the literature, distance, time, and lack of financial support negatively affect e-learning instructors' capacity to take part in

extracurricular programs (de Metz and Bezuidenhout, 2018). The final challenge that has been revealed from the empirical results is the difficulty of properly validating e-learning students' assessments. This is in line with extant literature, since according to prior studies, e-learning course providers encounter challenges in terms of recognizing what constitutes excellent teaching practices and providing adequate student assessment and support (de Metz and Bezuidenhout, 2018), and additionally sometimes it is difficult to deliver assessments and suitable feedback to students via an e-learning medium (Almas, Machumu and Zhu, 2021).

5.1.3 Theme 2: Instructors' perceptions towards CSFs for e-learning effectiveness

This theme was examined through IQ4 and IQs 5a-5j. Throughout the discussion generated by these IQs, instructors shared their views on what elements they believe help them to teach more effectively, and generally create a more positive learning experience for themselves and the students.

The researcher examined the respondents' perceptions of the specific CSFs that were identified as preliminary factors of the initial conceptual framework, having arisen after performing a systematic review of the relevant literature. The investigation of instructors' views on these CSFs aimed to shed light on how these are interrelated with the instructors' views that were displayed through the examination of Theme 1, which investigated instructors' general perceptions to e-learning effectiveness and implementation. The results were interpreted and coded into subthemes 2.1 – 2.10, and these were supplemented by asking respondents follow-up IQs 5a – 5j, thus validating these subthemes, and they aim to reinforce the findings within Subtheme 1.1: "Benefits of e-learning", by obtaining instructors' perceptions on how achievement of CSFs can help to attain the benefits of e-learning that respondents have identified. Additionally, the analysis sheds light on Themes 4 and 5 by identifying the CSF enablers where HEI management should focus their attention, to increase the motivation for instructor e-learning acceptance. The researcher, in his effort to obtain rich data regarding the reasoning behind instructors' perceptions, attempted to acquire the following information on the issues concerning each subtheme within the confines of IQ5:

1. Is the particular CSF important and what are its positive effects?
2. How can the CSF and its positive effects be achieved?

The answers given by respondents concerning the amount of importance and the positive effects that they assign to each CSF were used to validate whether that CSF's should be included in the Final Framework. Additionally, the answers relating to how the positive effects of each CSF can be achieved gave rise to novel contributions to theory and these were presented as "CSF Enablers" within the Final Framework of this Thesis. The researcher coded respondent replies to IQ4 into subthemes 2.1-2.10, and as there were no new emergent subthemes, this validated the inclusion of all the relevant preliminary factors into the Final Framework of the Thesis. The discussion of the relevant subthemes is outlined in the following sections.

5.1.3.1 Sub Theme 2.1: Learning quality and environment

This subtheme was examined through IQ4 and IQ5a.

Importance and positive effects of having proper learning quality and environment

All respondents expressed the view that LQE offered by the e-learning platform is one of the most significant CSF to the effectiveness of e-learning. The consensus among replies is that having high quality learning environment is one important factor that could improve the online classes' effectiveness and it is something that should be considered as the minimum starting point for achieving e-learning effectiveness and interactivity.

> *"I believe that the use of these platforms and tools, if of a high quality, is a critical factor in the success of effective online teaching"* (R.16).

According to Respondent 6, maintaining a robust LQE in the e-learning platform can lead to the positive effect of having improved functionality for the proper conducting of e-learning courses.

> *"It is a very important factor to have those functionalities with which you can perform your work. For example, if I want to record something, I shouldn't have to run different programs and blend different programs together. All these functionalities are very effective, but also at the organizational level it ensures efficiency"* (R.6).

Certain respondents went on to explain that functionalities aiding with the proper setup of study materials within the VLE are important in ensuring high quality, as demonstrated by Respondent 5:

"The way that the environment is set up, yes, I think it is important, because it depends on how you are going to set up your materials within that environment, in order to create a better learning experience for the students" (R.5).

How to achieve the positive effects of having proper learning quality and environment

Respondents indicated that reinforcing actions should indeed be concentrating on the improvement of quality and the VLE. The main enablers for achieving the positive effects of a proper learning quality and environment identified by respondents, are shown below:

- **Ensure that the platform is functional**

Respondents relate platform functionality to availability of proper features that aid e-learning quality, such as the ability to create interactivity and exchange of ideas via online media, thus utilizing technology to enrich the teaching process, rather than constricting it. These ideas are encapsulated within this indicative quote by Respondent 12:

> *"There are platforms that provide various features for the tutor to use, so it is different to use a simple platform where you can only open a camera and share your slides, and it is different to have a platform that you can include various other features that can engage the student. The use of technology gives you that extra edge to perhaps enrich the teaching process, when it is done in an online environment, and it depends on the quality of the VLE"* (R.12).

- **Ensure platform reliability**

The VLE should have the capacity to deal with unexpected occurrences without disruption to the e-learning process.

> *"The platform needs to be very reliable. For example, I had an e-learning course and the server had a shutdown and no one saw it coming. I realized that, when we were actually going to have the final exams, and the exam wasn't working. So, you don't need a lot to lose the reliability of a system."* (R.8).

Because the functionality features are present according to instructors' views, institutions need to ensure that the VLE should be technologically robust and reliable for instructors to be able to utilize the benefits that the platforms currently offer nowadays. Mainly, technical issues should be addressed as pointed out by Respondent 10:

"Obviously, technical problems do tend to get in the way, but as technology moves on, I believe these platforms will become even more efficient, and therefore I don't think there is much that I can suggest for improvement in this area other than to make sure that everyone who is involved in the e-learning process has proper internet connection, and I think that the platforms are there to be quite honest." (R.10).

- **Better organization of tools**

The importance of proper organization and use of the tools available on the VLE cannot be understated, as advised by Respondent 7:

"There are many tools on the platform that can improve the learning quality and environment, and make the teaching process more effective. I can upload on the platform all the notes that I have taken on the whiteboard, so students have access to the notes on the whiteboard after the teaching session has concluded. So, yes, I think that if we didn't have a quality online platform, online teaching could not be effective at all" (R.7).

Respondent 14 further elaborates that some of the more important things to consider towards improvement of e-learning effectiveness, would be the features and tools that the platform is providing to make it easier and more convenient for the instructor:

"For it to be more practical and easier for faculty and staff to use it, but also to have a variety of tools that they can choose from, to make the teaching more interesting and more effective" (R.14).

Therefore, VLE platforms should be offering the proper tools, but there is also a need for instructors to have the knowledge and ability to organize and utilize these tools in the interest of increasing e-learning effectiveness.

- **Ensure ability to set group assignments and use forum**

To improve e-learning effectiveness the VLE should provide for the ability of the instructor to set group assignments since this has various practical implications, as shared by Respondent 6:

"To build teams, for specific courseworks it is very important, to be able to group specific students into teams, for group projects. You do not have to send material to each student individually and they do not each have to upload their assignments, but

instead one group assignment can be uploaded. Only one per team, and you achieve synergies since all the students can see the feedback" (R.6).

Respondent 10 has also outlined the importance of having and using a forum effectively within the VLE:

"Especially when you have international students, you might be doing your online teaching from Cyprus, but some of your students might be in Africa or in Latin America, so it is not possible for you to meet up with them during the break and have a coffee with them for example. So, instead of that you've got the forum that the e-learning system provides or various social media platforms so you can use all these social media to encourage social interactions with the students, so you should be aiming to do that" (R.10).

This has implications in terms of bridging gaps that might exist due to the lack of physical proximity of students to each other and instructors, and this is one of the issues that technology embedded within the VLE should aim to address, according to respondents.

5.1.3.2 Sub Theme 2.2: Proper support and training conditions for instructors

This subtheme was examined through IQ4 and IQ5b.

Importance and positive effects of having proper support and training conditions for instructors

There is a consensus among respondents that having proper support and training conditions for instructors is very important for achieving e-learning effectiveness, especially during situations that impose emergency conditions caused by instances like the pandemic.

"Definitely it is very important, I mean if we didn't have the trainings that we did, from the very beginning of the pandemic, it would be extremely difficult. Even for the most skilled and technologically adept in the use of software, we needed to learn more and find ways to facilitate the teaching process" (R.7).

Respondents identify support and training as a main factor that enables them to go further, improve their skills and approach self-actualization at work. Therefore, HEI's should consider investing further in supporting and training their e-learning instructors, as the more conversant

an academic becomes with the e-learning system their institution implements, the better the outcomes would be for HE. Considering its importance, there should be systems in place to provide support as and when needed. The information given by Respondent 12 serves greatly to sum up the positive effects of having proper support and training conditions for instructors:

> *"Support and training are directly aligned and linked with the experience tutors have when they are familiar with the online teaching environment. So, for sure improved knowledge on how to conduct an online course, greatly improves the experience because it is different to get a tutor with no idea of how to do an online course, and it is different to get a tutor who feels comfortable with conducting an e-learning course and previously had several hours of training on that aspect. The stress levels between the one tutor and the other would be very different"* (R.12).

As observed, investing in proper instructor training and support not only has overall implications for the effectiveness of the e-learning process, but also provides personalized intrinsic benefits to instructors, in terms of reduced stress levels while delivering e-learning courses.

How to achieve the positive effects of having proper support and training conditions for instructors

- **Provide regular training updates**

As shared by respondents, institutions should have at least a yearly update on new tools that they have purchased and are introducing, or any technological advancements that are available in terms of the platform instructors are expected to be using. Respondent 9 supports this continuous training process, as shown below:

> *"Of course, it is very important. I believe that everyone who is teaching online should have proper knowledge about the process, so through events and seminars, but apart from setting up the support and training infrastructure, it is also important for instructors to have training and seminars on the academical approach, and especially what makes online courses different to conventional ones. In our university, we do this kind of thing at least two or three times a year, and for all e-learning instructors it is mandatory to attend at least one seminar"* (R.9).

Respondents have indicated that a great way for HEIs management to provide regular updates concerning e-learning is by means of offering continued professional development seminars to faculty members.

> *"The continued professional development services provided by the university in terms of technology, for example, we have the opportunity to attend training and improve our digital skills for online teaching. Sometimes they are adequate, sometimes inadequate, sometimes they help us sometimes they do not support our needs. Continued professional development is very important for us in order to cope with teaching online"* (R.3).

This indicates that instructors place value on receiving proper, regular, and timely trainings from their HEIs concerning e-learning developments. Satisfaction of this would create implications for improving instructors' intrinsic motivation to accept the e-learning process more readily, especially if they feel that their institutions are willing to make a conscious and active effort to invest in the personal self-development of their e-learning instructors.

- **Training should be practical and hands-on**

Respondent 13 has outlined that demonstrating to instructors how to perform practical tasks is a lot more beneficial, rather than offering them generic training sessions, and this creates a need for more specific and practical types of training sessions:

> *"There should have been a much more practical hands-on training for the use of the platform, not in a lecture type of room where we sit 10-15 people and we had these pedagogical training seminars where we were introduced to what is a wiki and how you can make things more fun, but just sitting there and listening to this is not the same as having a group of only 3-4 instructors sitting there with our laptops and having somebody sit with us and show us how to practically do things."* (R.13).

Informants have indicated that the practicability of e-learning training sessions can be facilitated by avoiding overwhelming instructors with excessive information.

> *"I think the management is doing enough in terms of training. The problem though is that they are doing a lot and sometimes it's too overwhelming. If I were to speak about myself, I don't have time to invest in learning even more than what is the basic things, or these things that I do when I am offering my class. I don't have the time"* (R.1).

It is apparent, that this is one situation where "less is more". Elaborating this further, respondents imply that institutions should not be overly concerned with the quantity of the training material and efforts provided, but rather with the quality. This rationale may be complemented by having institutional training teams that would filter the information delivered to instructors to enable them to assimilate the training content more easily. This is beneficial for instructors, especially given their views on the issue that some of them already feel overwhelmed by the additional burdens placed on them by the introduction of e-learning courses to the curriculum.

- **Provide differentiated support and training, which should be needs-based and skill related**

Differentiated types of training depending on the technological proficiency of the instructors is something desirable, as pointed out by various respondents, however it should be approached cautiously, for it to be effective. The additional economic burden on the institution should also be considered as shared by Respondent 6:

> *"It's something advisable to evaluate the overall faculty member familiarization with the technology and based on that level, to have different levels of training. This is something that you could build as a model in my opinion but ok, I am not sure if the universities would be willing to invest in it"* (R.6).

Answers designate that there should be at least two different types of training, focusing on general rules and guidelines, and more specific trainings addressed according to the discipline of each academic. HEI management should implement this in a way that is not singling any colleagues out so as not to affect their sense of pride. Respondents further state that there would be an increased need for institutional investment if such a differentiated training approach is adopted, since additional training courses would be introduced, and this might increase the cost to the organization. When this differentiated instructor training approach is considered, the extent of support provided to individual instructors should be dependent on that instructor's level of technological competence and literacy.

> *"If in the same training group, you have people that know about technology and people that don't, this means that the people that don't know so much about technology will eat up your time by asking questions that all the rest know. And then in the end the training doesn't really work because you need to create another training session for the more technologically advanced instructors, because the time has run out but they*

still might have some more questions. Instructors that don't really have many issues with technology, don't find trainings hard, but other people that do, need a lot of help" (R.14).

- **Provision of support for instructor self-training**

Respondents have outlined that training sessions are a good starting point, and if they are conducted properly, instructors are provided with proper support, guidance, and materials, they can use them for self-educating purposes. It would be expected of instructors to cultivate their own interest to participate in institutional training activities, realizing that this would enable them to improve their skills, by building on them through self-training.

> *"Support is related to the seminars we have discussed, so the tutor should be aware of the fundamentals and how to take the minimum actions and then to improve themselves during the procedure"* (R.9).

Respondent 11 has shared that in addition to the seminars delivered by their HEI, self-study has helped them a lot, especially if a strong foundation and understanding of important e-learning topics is already created through the attendance of training seminars. From that point on, instructors should ideally be able to nurture their intrinsic desires to further improve their skills, having obtained the fundamental knowledge from their HEI.

5.1.3.3 Sub Theme 2.3: Good instructional design

This subtheme was examined through IQ4 and IQ5c.

Importance and positive effects of good instructional design

Most respondents stated that instructional design is very important for the effective delivery of an e-learning course in terms of its ability in capturing students' attention and strengthening accessibility of information conveyed to students through the e-learning platform. Respondent 4 presumes that instructional design is an area where HEIs should focus on further in supporting instructors, and a team of designated people is required for this purpose:

> *"We need instructional designers, and we need to take into account other educational paradigms globally. For example, having a team of instructional designers if we want to thrive in a world of online education, and if we want to be called an online education*

institution, is imperative. It is in line with the vision and the mission of the university. An academic must be a researcher, and an instructor; they cannot be everything. Instructors are not super people. We are trying our best to perform and we need support" (R.4).

According to the respondents, having good instructional design can lead to tangible positive effects, mainly related to improving the e-learning experience of students:

"It is important to ensure that the module has everything you want, in that the learning outcomes for the students will be the ones that are most desirable. We do have a design given to the students of what the module is going to include and everything. But, what is not there are measures concerning the students that don't really pay attention to it. If the instructional design is better, this would ensure that all students would benefit from a course that is properly designed to guide them through their studies" (R.14).

There is consensus among respondents that instructional designers would be able to help them provide the best learning experience to the students, as there would be experts with whom instructors can discuss how to build their courses. With a lack of such support, instructors mostly seem to resort to just uploading the available materials that they have from conventional courses, or just turning those into videos but without adding anything else that would benefit students.

How to achieve the positive effects of good instructional design

- **Hire a dedicated team of instructional designers**

Respondents have shared that this is something that is generally missing from local HEIs currently, due to a lack of funding, however all HEIs should consider having a team of people who are working on the issue of instructional design. The guidance these professionals would offer to instructors seems indispensable, considering the efforts HEIs should embark on in terms of improving e-learning effectiveness. This is mostly due to the restricted knowledge and available time of e-learning instructors, considering the increased demands imposed by e-learning courses, and the fact that most instructors are not experts in this field.

"We should have had that for the last ten years now. It is a must. The university would need to hire a team of instructional designers especially considering the high number

of online students we have and the amount of material that is online, you need to invest in people. They should take programme by programme, course by course, and sit down with the lecturer, go over the material and provide practical pointers" (R.13).

Judging by the sentiments shared by Respondent 13, investing in a team of instructional designers is of utmost importance if institutional management wish to improve the effectiveness of e-learning courses.

- **Establish good communication between academics and instructional designers**

Communication with the instructional designers is important because they offer vital expertise and Respondent 10 has shared that establishing a strong relationship between academics and instructional designers is very useful. This is showcased also by the relevant quote from Respondent 5:

"It is really important to have a good collaboration with an instructional designer because I don't have the precise pedagogical knowledge on how to transform my material to online learning, and an instructional designer helps to transform materials and make them available online in a good format for the students" (R.5).

Respondent 3 has further stated that *"strong collaboration between the academic and an instructional designer is the basis for the creation of an effective online learning environment."* This is because the academic is an expert on the content of the subject matter, but the instructional designer design is an expert on design theories and user experience. The instructional teams can also coordinate online activities, provide technical support, create guidelines for the use of digital platforms and tools in education. Therefore, fostering a good relationship and strong communication between academics and instructional designers, would create an amalgam where the best of both worlds would be obtained, and the effectiveness of e-learning courses would be increased.

- **Establish course design flexibility**

Respondents have indicated that the instructional design approach depends on the type of course, so a degree of flexibility should exist in this regard. Respondent 12 has offered the insight that in practice, every course has its own characteristics, the material and teaching methodology is different, so it would be impractical to adopt a blanket approach and have a pre-designed guide for instructional design. Respondent 17 focuses on outlining the practical implications of establishing an instructional design department within a HEI, further indicating

that these teams should focus on providing a tailor-made service based on the needs of individual e-learning courses:

"I would say one challenge if the university decides to hire a team of instructional designers, would be this tendency to have everything being the same, standardizing it in a uniform way, whereas I think that the approach should be to reflect the logic of each course, but also the technological level of the instructor. For me, it is important to get students to think, to problematize, to examine multiple perspectives, and deconstruct certain ideas, so technology is not that important. These things I outlined can be done with or without the use of fancy technological tools. So, the instructional design should reflect the content, as well as the instructor's personality and level of technological knowledge" (R.17).

This practice, as per Respondent 18, would enable the correct incorporation of appropriate instructional design pedagogies into the various e-learning courses an institution provides, and currently seems to be a missing link in online HE.

- **Establish a clear and transparent instructional design process**

Respondent 9 has shared the view that if e-learning courses are to be effective, "*everything should be very clear from the beginning, and instructional design is one of the most important aspects.*" This is associated to an interconnectivity between components comprising an e-learning course, to a degree, that if something goes wrong, this puts the whole e-learning process in jeopardy. Clarity and transparency in course design is therefore integral in reducing this risk, as also pointed out by Respondent 8:

"Rather than going through the completely futile route of study guides and course outlines, which are what we normally think of instructional design or the basis for all teaching material, the way that they build their courses is an incredibly transparent and clear way of setting objectives from the very beginning concerning what you need to do step by step to complete the course and where exactly you are at any given point throughout that process" (R.8).

It would therefore be useful for HEI management to dispel any misconceptions regarding what instructional design's function is, and to focus on ensuring that through its proper implementation, its most vital objectives of introducing clarity and transparency to the e-learning teaching process, are achieved:

"Sometimes we think of instructional design as something quite narrow, like for example course outline and tools, but what I am saying is that at the core of good e-learning is to actually design the course in a way that is very clear and transparent to the learner" (R.8).

5.1.3.4 Sub Theme 2.4: Instructors' perceived usefulness and ease of use regarding the e-learning system

This subtheme was examined through IQ4 and IQ5d.

Importance and positive effects of perceived usefulness and ease of use

Most respondents have stated that it helps if the platform is simple and user friendly, by giving the example of Moodle:

"Moodle is a very easy platform, so it does make sense to use it. For example, the intranet that we had before was a disaster and it was so difficult to use, and I hated it. But now, I even use Moodle to support my own on-grounds lessons. So, I have all my material for all my lessons on Moodle because it just helps" (R.1).

The choice of a user-friendly platform is therefore imperative, since according to Respondent 3, it makes a difference to instructors' perceptions of e-learning if the VLE is easy to use and straightforward. This is because the technological bar should be dropped sufficiently enough, so that even somebody without a strong e-learning background, should be able to use it if they follow the guidelines, are familiar with the use of a computer and have basic ICT skills. If instructors view the system as useful, then they would obtain a better perception of e-learning overall. Some respondents have even stated that Covid-19 has had a positive effect on instructors viewing the system as useful, because it offered a tool to continue delivering courses even during the critical times that were imposed by the pandemic:

"The COVID-19 pandemic has actually had a positive impact on this problem of resistance, but yes, if e-learning systems are easier it would be better" (R.9).

It is precisely during such emergency times, that the importance of the ease of use of an e-learning system becomes truly apparent, in serving as a viable practical tool to alleviate the issues created by instructors having to abruptly adapt to a new mode of course delivery.

How to achieve the positive effects of perceived usefulness and ease of use

Respondents have shared that first and foremost, the e-learning system should be simple and functional, and this would assist with learning it by practicing.

- **Simplicity and functionality**

It is important for the system not to be over-complicated. Therefore, a balance should be struck between availability of a wide range of features, but also ease of use, as pointed out by Respondent 13:

> *"It is important, but it should not be something that is over-complicated. Offer the features, but also make it easy to learn. Yes, of course, this trade-off between complexity and ease of use should exist. The features should be there, but they should be easy to learn"* (R.13).

Respondent 14 supports this view and elaborates that the system should be designed by following a scaling difficulty approach, whereby allowing users of various technological literacy levels to use it:

> *"I would say it would be best to combine ease of use and simplicity, with also having a variety of optional functions and tools for instructors to be able to use, should they choose to do so"* (R.14).

The consensus formed by respondents' answers leads to the conclusion that sometimes systems are over-complicated and focus excessively on the technology, but this is often to the detriment of the main issue at hand concerning e-learning, which is instructor-student interaction. Respondent 2 sums this up by saying that *"we need a good, useful, simple to use system that offers some functionalities"* (R.2). The complexity of such functionalities, however, should not be to the detriment of being able to address the main objectives of an effective e-learning system, which at their core are pedagogical, and not technological. Therefore, a foundational objective of e-learning systems is that they should not have a steep learning curve in a technological sense since this detracts from the effective e-learning process.

- **Learn by practicing**

Respondents have stated that if instructors want to create a more user-friendly and useful experience for themselves on the e-learning platforms, they need to spend some time to learn the systems adequately. Respondent 7 shared a particular example when they tried to create

their first online quiz on the e-learning system, and that it was a huge challenge during their first try. But then, after dedicating some time, it was much easier the second time around.

Obtaining a sense of comfort with using the system, affects instructor perceptions positively, as per Respondent 13, and shows that instructors generally feel that it is a well worth investment to spend time learning a system to a good proficiency level, especially if their HEI makes a long-term commitment to use it:

> *"Personally, I am at that stage where I now feel very comfortable with Moodle and it is now in the last one or two years that I have started making the use of the platform more effective and interesting for the students. Because of the knowledge of the platform that I have gained. If they change the platform now, it will take me back five or six years"* (R.13)

5.1.3.5 Sub Theme 2.5: Technology infrastructure

This subtheme was examined through IQ4 and IQ5e.

Importance and positive effects of a robust technology infrastructure

Answers concerning the importance of this sub theme converged around the point that a robust technological infrastructure provides the very foundation, around which any e-learning initiatives can be based as demonstrated by Respondent 19:

> *"Having a robust technology infrastructure is very important because nowadays the trend in academia and in businesses is to have the ability to understand new technologies and apply them"* (R.19).

Respondent 9 has also shared that one of the primary areas to be considered in the effective implementation of e-learning is the technology infrastructure, since e-learning instructors cannot do without digital devices such as a tablet or other technological tools that improve the quality of the e-learning teaching process. Respondents have shared that there are various positive effects of having a robust technology infrastructure, and namely additional interactivity features that might be enabled through advancements in technology, which are useful in supporting the experience of students and instructors. Additionally, Respondent 4 shared that through the technological framework adopted in a HEI, *better engagement, more*

resources, personalized learning, and building communities" (R.4) are all elements that can be attained and improved. It can be surmised that e-learning instructors are generally positive toward technological advancements, with a few of them expressing their eagerness and optimism in terms of the online teaching process becoming better over the course of time, as there are more technological advancements that will become available to aid the teaching process.

How to achieve the positive effects of a robust technology infrastructure

Respondents indicate that since there are many technological features available nowadays, HEIs need to ensure that these are implemented in such ways, that the technology infrastructure is robust enough for them to be able to fully utilize the benefits of the latest technological advancements. The first point for consideration to enable this, is that HEIs should be open to investing in advanced technologies, and subsequently embedding the most appropriate additional technological tools into their e-learning framework, while keeping instructors fully informed regarding the tools that are at their disposal.

- **Invest in technological innovations**

With HEIs maintaining an open mind and proper approach to this, informants believe that e-learning platforms will become even more effective as time progresses. Respondent 5 has shared that overall, the current infrastructure has been improved to support e-learning, but there is still more to do. This is further reinforced by Respondent 4:

> *"There is always room for improvement. I really advocate that we need to be innovative and follow the trends of educational technological innovations. There is equipment out there, but it needs to be available to all the faculty members"* (R.4).

Additionally, Respondent 18 has stated that investment in technological innovations should have as its core aim introducing tools that will improve the level of interactivity that e-learning courses currently offer to learners:

> *"I'm sure that there are other technological advancements that I haven't experienced so I don't know where the limits are. One of the main problems of e-learning has to do with student engagement. Students are far apart, they are not physically present, they don't have face-to-face contact with the instructor, especially with the asynchronous*

modes of delivery. So, the more interactive you can make the asynchronous part using technology, the better" (R.18).

- **Embedding digital tools and devices**

Informants have espoused the general view that the more technological tools are embedded in the VLE, the higher the ability to interact more with the students, and this is something that would improve e-learning effectiveness. Respondent 13 has suggested that there should be an active effort on the part of institutional management to figure out the most optimal way of doing this, rather than relying on instructors to spearhead this process:

"The university needs to invest in tools and devices that teachers want to use. It shouldn't have been my responsibility. How do you teach a practical course by just sitting there and talking? You need to invest in technology. So, it is not just the basic things like the internet connection, but also to see the technological tools that are needed by each lecturer for them to be able to teach their courses properly and effectively" (R.13).

Other respondents have advocated utilizing specific technological advancements such as artificial intelligence, extended reality, virtual reality, and augmented reality, among the available tools that can be embedded within online courses, as this can bring the learning process closer to the students' needs. Aside from these, attention has also been given to optimizing the usage of more general tools like videos and multimedia since according to Respondent 8:

"A lot of multimedia content gets in there, probably more in an e-learning course than in a regular course, because in an e-learning course I can push the content to students more easily" (R.8).

Consequently, management needs to make sure that the digital tools that are used for delivering the course work, by placing particular attention on the audio-visual conditions, a robust internet connection, slides that are readable; as these core elements are universal and standard for all courses, and can be greatly optimized with the proper use of technology. Answers concluded that nowadays there are many applications and platforms with which students can be engaged, and there are many technical functionalities and available tools. HEI management should undertake research and cost-benefit analysis to address how the plethora of all these available tools could be most optimally embedded within the institutional e-learning system. Respondent

8 advocates that this is a worthwhile initiative since *"These tools provide so many things and make the e-learning process easier for both the student and the instructor, and at a much lower price"* (R.8).

- **Flexibility and support for large groups of students**

Respondents have implied that the technological infrastructure should offer flexibility in terms of being able to support large groups of students seamlessly, as this is how e-learning can be scaled up. An illustrative quote of this notion by Respondent 12 follows:

> *"The basics with a technology infrastructure, are to have a very good platform where you have no problems in terms of connection and being able to host a large number of students that are in the class. There are certain platforms, where technologically speaking you cannot have large audiences but this is one of the most important things"* (R.12).

- **Centralized knowledge sharing and support for instructors**

Respondent 18 has shared the view that HEIs need to invest not only in the technology, but also in the manpower to support it properly. Respondent 4 maintains that instructors need to be aware of the available technologies while having support since HEIs might have the technology, but they also need to invest in the right people to enable its development while working closely with instructors:

> *"We need to have a centralized source of information on what equipment exists, even in our own community. But when we talk about educational technology, we know that the technology that is trending today, needs to be replaced after two years. So, first of all we need to be aware of the equipment that is out there, we can perhaps create a community of knowledge-sharing"* (R.4).

5.1.3.6 Sub Theme 2.6: Instructor characteristics

This subtheme was examined through IQ4 and IQ5f.

Importance and positive effects of developing proper instructor characteristics

It is important to note that most respondents stated that a different set of characteristics from those needed for conventional courses, are required for the instructor to be able to teach e-learning courses more effectively, even though there are also some overlaps. This signifies that instructors need to adjust to cope with the pedagogical constraints imposed by e-learning, while having pressure and a limited amount of time to adjust. Respondent 8 shares their personal experience:

> *"I felt that as a core of that batch of first teachers, we found ourselves bombarded or challenged by all sides. For example, there was not a lot of understanding from those who were running the courses especially when we talk about the differences that online courses have from conventional ones"* (R.8).

The positive effects therefore manifest themselves through an understanding of how to cultivate the specific skills instructors need to be able to thrive in the e-learning environment.

How to achieve the positive effects of developing proper instructor characteristics

- **Develop pedagogical skills**

Instructors need to build on the pedagogical skills they have attained through delivering conventional courses and translate these into the online environment, as shared by Respondent 19:

> *"I try to utilize the experience I have gained from face-to-face courses into my online courses as well, and combining them with the skills that I have gained from online courses. I think both of these sets of skills contribute for the instructor to be more effective in transferring the knowledge, to be able to respond better to student questions, and to stimulate discussions"* (R.19).

Respondent 8 builds on this by suggesting that to cope with the modern environment, instructors should aspire to update and improve their skills:

> *"People usually teach as they were taught when they were in university. So, you can have the most modern environment, and then the teaching methods might still be archaic. Instructors should be obligated or at least incentivized to obtain online education training to improve their pedagogical skills"* (R.8).

By developing their pedagogical skills, e-learning instructors would become more adept at

understanding students' needs.

> *"We know that students have different needs and different cognitive abilities and it is important that they receive personalized support. We need to bear in mind the characteristics of the adult learners and adapt and adjust to their needs, and include them in our teaching practices. Adults are more autonomous, they also need motives"* (R.4).

- **Being flexible and present**

This quality is important since Responded 18 has mentioned that instructors should be open-minded to grasp the needs of e-learners and introduce the kinds of activities that would be more suitable for them and thus be more flexible in meeting these needs. This flexibility extends to more than just having office hours, and instructors should be prepared to be available to provide timely guidance to students. Respondent 7 states that:

> *"Flexibility is important. Quick learning, adaptability, no resistance. You need to be as adjustable as possible and as fast as possible in these kinds of situations. You need to change the way of thinking and the way of teaching to satisfy new needs"* (R.7).

This would make e-learning instructors more friendly and approachable, and it is dependent on having good social skills. According to Respondent 10, Instructors should strive to be approachable and sociable, and emotional intelligence plays a large part in this. This notion is also epitomized by Respondent 9:

> *"Emotional intelligence is very important, because when you are teaching online it is more difficult to communicate and understand students' feelings. Also, because emotional intelligence is related to managing the stress issue, it should be something that e-learning instructors are better at. Of course, you have to be a good tutor, but this is obvious"* (R.9).

This way it would also be easier for instructors to acknowledge student feedback and provide them with more personalized guidance.

- **Appropriate teaching philosophy**

This is something that respondents imply is largely dependent on each instructor:

"So, my personal characteristics of course influence the way I set up a course and teach online because I certainly have a specific philosophy of teaching, so I try to set up everything based on that philosophy" (R.5).

Adopting the appropriate teaching philosophy affects the teaching style of each instructor, and tailors that to the needs of e-learning students. Developing an appropriate teaching philosophy would enable instructors to foster critical thinking within students as shown by Respondent 14:

"When I teach, I try to make my student think a little bit more every day, in the sense that if I manage to make them question what they are thinking about, then I have succeeded. I am trying to transfer as much knowledge as possible, and what I am saying is that by totally caring about what my students are learning" (R.14).

Part of adopting an appropriate teaching philosophy involves instructors realizing that their role in an e-learning course is more of a facilitator and motivator as suggested by Respondent 6:

"With our e-learning courses, we shifted from the traditional philosophy of teaching the whole curriculum and explaining everything in great detail. The instructors have a more of a mentoring and guidance role for our students. So, this is different to conventional courses" (R.6).

Finally, some respondents have suggested that having good organizational skills greatly facilitates the adoption of an appropriate teaching philosophy.

- **Technological literacy**

The level of instructors' technological literacy affects to a large extent how easy it would be for them to use the e-learning system for conveying knowledge, as stated by Respondent 12:

"You need to be familiar with technology. If you have instructors who are familiar with the technology and they use it in their daily lives, then for them it is a pleasure to be engaged in an online teaching environment" (R.12).

Having an inadequate level of technological literacy might lead to situations where an instructor might be scared of technology and embarrassed to ask for help, as pointed out by Respondent 13. It is precisely in such cases, that institutional management should strive to provide the instructor with the proper support that is needed, while also being cautious to respect the instructors' feelings, fears and self-esteem.

- **Willingness and motivation**

Achieving the above characteristics would lead to having instructors who display more willingness to accept e-learning courses as shared by Respondent 18, since they will be in a good position to learn what are effective ways and pedagogies to teach online. This becomes especially vital in crisis situations as suggested by Respondent 7:

> *"Of course there has to be willingness. It is not a matter of whether we like it or not, in situations of crisis you have to do what's best to overcome the crisis. But as I mentioned, being willing to adapt and being a fast learner, these are the characteristics I think"* (R.7).

Some respondents have mentioned that these characteristics arise through intrinsic instructors' motivation, therefore HEI management should try to cultivate them properly.

5.1.3.7 Sub Theme 2.7: Student characteristics

This subtheme was examined through IQ4 and IQ5g.

__Importance and positive effects of fostering proper student characteristics__

HEIs must understand that the concept of an e-learning student is different to that of a conventional physical presence student as stated by Respondent 15, and this is important in being able to better perceive the profile of students enrolling in e-learning courses. This in turn leads to assessing the gap and needs of students in terms of elevating them to a desired level for effective e-learning to take place, as is revealed by Respondent 17:

> *"I mean, as things are, everyone can enroll in an e-learning course. Ideally, e-learning students should do a bit more, to be more invested and to create the necessary environment and interactions to enable the learning process, but practically speaking, those who enroll in online courses might also be those students that do not have time to put in this effort. So, that's another issue, because those who want to study online are those who have too many obligations, work, kids and so they do not have the ability to commit the extra effort"* (R.17).

Instructors should therefore be prepared to be faced with groups of students that have various and differing characteristics as per Respondent 14:

> *"From my experience, generally, and not only online, it is insane how every group has its own characteristics. We had groups coming in one year that were amazing, you know, they were so longing for knowledge, that they were there every time, they were participating actively. And then we have also had other groups that just didn't care and didn't put in much effort"* (R.14).

HEI management should focus on addressing the appropriate characteristics of online students, and working with instructors on how they can be fostered. This would lead to increasing the quality of the average student attending e-learning courses and would result in students who are more mature, disciplined, motivated and technologically ready.

How to achieve the positive effects of fostering proper student characteristics

- **Better screening of online student applications**

The level of discipline, which has been identified as an important characteristic of e-learning students would be reinforced by adopting better screening procedures for online student applications, according to the respondents. Respondent 10 has shared that students who register for the postgraduate e-learning courses should be more experienced, mature, self-disciplined and should be capable of using a critical analysis approach to the learning process, and these are screening criteria that HEIs can apply.

This would ensure that students have the appropriate level of maturity since this has been identified as one of the most important characteristics that students should have, as per the respondents, especially for the graduate level courses, which currently account for a large proportion of online courses being taught at HEIs. Possessing a level of maturity would enable e-learning students to recognize the expectations placed on them as per Respondent 16, and would be in a better position to evaluate why they have registered for e-learning courses, and to satisfy their responsibilities as indicated by Respondent 4:

> *"Students should realize the reasons why they are pursuing an online degree, which could be career-driven, in order to get a promotion. Maturity is important for adult learners"* (R.4).

One of the main responsibilities placed on an e-learner is to engage in far more self-study than a conventional student, and maturity is a required trait to satisfy this:

> *"We assume that the students are mature, and that they spend more time on individual study as compared to those students who are registered for conventional courses"* (R.6).

- **Create an online community**

The essence of this notion is truly encapsulated by Respondent 15, by drawing comparisons to physical students:

> *"The physical student becomes a part of an academic community. You actually see it in the classroom. The student has the physical presence of an academic. They are physically part of a scholarly group of students. The online student is completely different. He doesn't have that, and he doesn't know what he is missing most probably"* (R.15).

However, Respondent 18 shares that what is ideally needed, are e-learning students who should be motivated, want to be a part of the online community, and to be engaged in this process. This would enable the online student *"to express themselves and share ideas and opinions, to create an online community and collaborate in terms of exchanging practices, skills and knowledge"* (R.4). The importance of this cannot be understated since *"these things are really crucial for them in order to keep them active"* (R.4).

This would lead to students who are more motivated and willing to participate in e-learning courses:

> *"The willingness to learn is a very important characteristic. Students should be willing to spend their time creatively by listening to and experiencing the material, concepts and ideas that are being delivered by the instructor, to interact with the instructor, and to be interested in the subject. These are the top priorities"* (R.2).

Respondent 8 asserts that the students' willingness to participate in an e-learning environment is vital and this is also reinforced by Respondent 12, because:

> *"If the student is willing to learn, and they have the passion to follow the course and learn from it, then this is something very important that will enhance the online teaching experience"* (R.12).

- **Digital tools and training**

Answers show that students should be receiving some training on what e-learning is, prior to enrolling for a course. Respondent 18 advises that this is important in sensitizing students on how they can engage more actively with e-learning courses. Respondent 4 also adds that this should be complemented by tools that improve students' online experience and improve their learning process:

> *"There are tools that offer students real time responses and this triggers their learning process progressively. They try to encapsulate the knowledge and the material through real time assessments. It is a dynamic process. Accessibility and usability are important for these tools because if they are not user friendly and interfaced there won't be any continuity for the students' learning process"* (R.4).

Training on such tools would lead to technological readiness and knowledge on the part of students, and as per Respondent 12, students must interact with technology and these kinds of environments to be ready for e-learning. Respondent 3 adds:

> *"Students need to have the digital skills that are necessary to handle ICT issues. Also, they need to have the adequate equipment in order to engage with the e-learning process. So, university students need to have the skills, they need to have the infrastructure, the equipment to participate in the online learning activities"* (R.3).

5.1.3.8 Sub Theme 2.8: Course content

This subtheme was examined through IQ4 and IQ5h.

Importance and positive effects of having good course content

In response to this question, Respondent 15 claims that the course content is very important, even more important than in face-to-face courses because there is less interaction and students do a lot of self-study work. So, the course content in terms of quality, thoroughness, scope and structure of the material, is extremely important. The advantage of this is that in e-learning courses there is generally a richer course content, as mentioned by Respondent 1:

> *"In e-learning, you end up having a much richer content, as the course content needs to be very well structured and organized, for the e-learning course to be effective"* (R.1)

This, therefore, creates differences in the course content in e-learning courses to conventional ones, as acknowledged by many respondents. So, Respondent 6 explained that the instructor's approach to the material needs to be adapted to reflect these differences:

> *"You cannot use the same notes in e-learning as in conventional courses. In conventional you have 13 weeks times three hour lectures. You can cover it, explain it orally. In comparison, you have 6-7 hours dealing with students interactively, live online each semester"* (R.6).

How to achieve the positive effects of creating good course content

- **Comply with accreditation regulations**

Some respondents stressed that the content of e-learning courses depend on the guidelines by local accreditation organizations.

> *"We have specific guidelines that we have to use, so based on these guidelines we need to have every week the learning objectives available on the platform, and we need to have a presentation and any other materials they have to study. Even though maybe we disagreed at first, I think that they make sense and help the students because you see the objectives and you see what you have to learn, and then you have the materials to study those"* (R.5).

This affects the way course content is organized and HEI management and instructors should be mindful to comply with the relevant regulations.

- **Should be focused on student needs**

According to respondents, HEIs should use models to evaluate the effectiveness of the course content in terms of its ability to satisfy e-learning students' needs. Respondent 4 has suggested that specific steps need to be followed to design the course content, and ideally there should be a team to evaluate it. This would assist in the preparation of course content, whereby students would have fewer question to clear up unclarities, and would thereby bring the content closer to student's needs, as advocated by Respondent 3:

> *"What I'm trying to do is to build the course content based on learners' needs, based on the previous experiences, based on previous results and based on the requirements of the course. I try to do a needs assessment in order to start building the course"* (R.3).

At the same time, while complying with these, the course content should also offer students a degree of flexibility, to assist them in the e-learning process. Respondent 12 motions that because the course content varies from course to course, instructors should have freedom and flexibility in terms of creating it and conducting the class as per the material they teach. This would enable students to capture and understand the material better. Respondent 17 advises on a good approach to achieving the balance between compliance with regulations and offering the needed degree of flexibility:

> *"The syllabus needs to be approved by CYQAA, but we have some flexibility. We say up to 70% you can change the syllabus, like the content. The way an instructor organizes the course content online, is a critical factor for the success of an e-learning course. And this extends to the course content, the material, the guides and so on. Students should have all the material available at all times, in order to ensure flexibility exists"* (R.17).

- **Include appropriate study materials**

There is consensus among respondents that for e-learning programmes, more study materials are needed to provide students with detailed study guides which would include things like the material taught, articles, textbooks, and the weekly study programme. Respondent 7 describes that the more experienced an instructor becomes, the easier it is to determine the most appropriate course content:

> *"As the time goes by I try to improve my approach to the course content in my e-learning classes. I enrich the material, I would provide more notes and references to students. The assessment of what materials to include has been improved, so definitely as time is going by, things are getting better"* (R.7).

- **Examine the possibility of outsourcing an online content platform**

Respondent 1 elaborates that examining an outsourcing option for the course content, would offer convenience and efficiency to HEIs and instructors:

> *"It is helpful because I have all the content there, it is ready and available. I wouldn't have to do anything, I just get a deal with the publisher and the publisher does all the work for me, it's even laid out, it's perfect. It would also be easier for the lecturer to take on even more online courses, because the effort is less on our behalf to make the*

material. I don't have to spend my energy on that, let me spend my energy on how to add onto that" (R.1).

5.1.3.9 Sub Theme 2.9: Ease of system access

This subtheme was examined through IQ4 and IQ5i.

Importance and positive effects of having easy system access

Informants expressed that it is important to afford easy access to the e-learning system, citing benefits such as flexibility provided, as usually academics are "on the run" because they frequently travel and therefore it is useful to be able to access the system from various locations and through different devices. According to Respondent 1, ease of system access through various devices also helps in case an instructor would only be able to access an online class through their mobile or tablet. Respondent 14 adds that the added accessibility of the e-learning system can be beneficial in many ways:

> *"You need to be able to have access to the online platform wherever you are and through different devices. Either you are travelling locally or abroad because you might want to get inspired, or get out of your office, house or town, so it should be easy to access the system through our phones. Our emails are accessible there and we are so attached to our phones anyway, so we want to have access from everywhere."* (R.14).

How to achieve the positive effects of easy system access

- **Provide accessibility**

Respondents have outlined that accessibility to the system needs to be considered not only from the point of view of instructors, but of students as well, as stated by Respondent 7:

> *"It could be of a high priority, I mean concerning fully distance learning students, probably they would like to have convenient access to the platform through their mobile phones, maybe through a mobile app, because maybe they would like to listen to a lecture, maybe while at the gym. So probably it would be a good idea, but as it is, just to have access to the platform as it is now, I think it is not easy through devices other than the PC. But an application would be much more user-friendly"* (R.7).

HEI management should therefore consider the option of using mobile applications to provide more accessibility of the e-learning system to students.

- **Availability on different devices**

This would offer the system the desired degree of flexibility, to make it greatly functional and user-friendly for participants. It would also entice instructors and students to be more willing to use the system through various devices:

> *"From my experience, I never tried to go through the platform from my mobile phone, because it is so many things in the platform, that I don't think it would be easy for me. I've tried through tablet, it is a bit better but, I think through the laptop you can enjoy the full potential of the system"* (R.7).

5.1.3.10 Sub Theme 2.10: Social factors and interaction

This subtheme was examined through IQ4 and IQ5j.

Importance and positive effects of having proper social interaction

Some respondents have called upon the affective dimension of e-learning as an educational process and have deduced that the social factors and interaction are very important to maintain this aspect. Therefore, Respondent 4 has advised that online interaction is a crucial, key concept for the quality of an online course, and for its effective implementation. Respondent 17 further asserts that:

> **"***Learning has an affective dimension and we know from prior studies, that the social element is very important. How students interact, and the relationships that develop within a learning group. This plays an important role in how we learn, remember and recall information"* (R.17)

Informants have listed various positive effects of having proper social interaction, and one of these is the enabling of easier understanding of the material. For instance, Respondent 12 considers that:

> *"It is very important to enhance the social interactions between students in the online environment because this provides an interactive online environment. The social interaction means that you will have discussions in online classrooms, which is similar to the face-to-face classroom environment. Also, the social interactions will enhance the more in-depth understanding of the material because by promoting social interactions in online environments, this means that you promote the critical thinking and analysis between students who discuss certain topics and themes, which then*

promotes the better understanding of the material and creates a more interesting environment for the students" (R.12).

How to achieve the positive effects of proper social interaction

- **Enable students to exchange ideas:**

Informants have given examples of how they try to implement this in their e-learning classes, by listing things such as introducing various interactive activities to stimulate communication. Other examples given were interactive exercises and discussions based around students' understanding of the key concepts being taught. This gives students the chance to exchange practices and ideas more freely with each other, as well as to hone their individual social and emotional skills, which assists in the effectiveness of the e-learning process, as outlined by Respondent 4:

> *"Giving students the chance to exchange practices and communicate with each other and paying attention to the social and emotional characteristics which refer to the group dynamic. Also individual emotions, self-efficacy, self direction, goal orientation. Learning involves change, and it requires interaction, so its an ongoing process"* (R.4).

- **Assign online group work**

Respondents have also mentioned that they tend to utilize group work activities to stimulate the proper implementation of social interaction and feelings of belongingness for students. Respondent 17 draws on a personal example from their e-learning courses:

> *"I use a lot of group work activities, and the groups stay the same throughout the semester. I try to keep the groups very active. So, they have to meet once a week, they have to comment together on other students' assignments or presentations, they have to participate together in the discussion forums that we do every week. Through this, you create a sense of belonging in students, because e-learning can be a very isolating experience otherwise"* (R.17).

- **Integration of technological tools**

Respondent 16 believes that it is very important to engage the students on a continuous basis, for every single lecture, and allow them to freely talk. The proper use of technology and the tools available on the platform can help to ensure that there is interaction and communication

with the students. This notion is supported by other respondents as well, with Respondent 4 recalling that they mainly use technological tools which are integrated in Moodle such as the H5P which is an interactive tool. These are tools which allow the instructor to create various activities such as *"interactive presentations, self-study, student learning pace, essays, gap-filling exercises, and quizzes"* (R.4). The respondent claims that these tools help students to remain active, engage with the course, participate, and learn more effectively.

- **Clear communication with students**

Adopting clear communication practices helps to set clear objectives and give clear instructions to students. This way they feel that they are not socially isolated, but instead have an instructor who is guiding them properly for them to achieve their e-learning objectives. The e-learning process therefore becomes more enjoyable for participants, as Respondent 11 recounts:

> *"I enjoy this process because it also helps me explicate exactly what students and I need to do in my course, and the path that we need to follow has to be developed from the very beginning right there and then for students to see. This also enables me to be very clear in terms of what exactly I expect from students during my e-learning courses and improves the overall quality of interactions"* (R.11).

Additionally, Respondent 17 thinks that by being very well organized, in terms of planning, having clear timelines, setting deadlines from the beginning, and communicating these clearly to students, instructors encourage them to interact more.

5.1.3.11 Discussion of theme 2 and its sub themes

The empirical investigation validated all the preliminary factors included as CSFs in the initial framework, since respondents established that they were all essential for the effectiveness of e-learning courses. Additionally, novel contributions to theory were generated when respondents were asked how the positive effects of each of these CSFs can be achieved.

According to the research findings, all respondents agreed that LQE is vital for e-learning effectiveness. This is in line with extant literature since HEIs' corporate global image and the fact that the image is associated most strongly with e-learning quality according to Da Costa and Pelissari (2017). The e-learning environment has been widely identified as a CSF in prior studies according to Alhabeeb and Rowley (2017), and Alqahtani and Rajkhan (2020).

Respondents generally shared that one of the areas that concerns them regarding e-learning is the issue of quality as compared to conventional courses. This is compliant with literature, as Farhan, Razmak *et al.* (2019) call upon future studies towards the creation of a more effective e-learning environment, by establishing how e-learning environments can become more functional and reliable. Informants have suggested that LQE can be improved by proper organization of e-learning tools, and according to the literature, Al-Karaki *et al.* (2021) suggest that instructors must be provided with effective training on online learning tools by HEI management. Another way in which the benefits of LQE can be enjoyed is by integrating group assignments, and proper use of the forum within the e-learning system. This is corroborated by literature, since group and peer interactions have been identified as important enablers of e-learning effectiveness (Chavoshi and Hamidi, 2019), as well as the establishment of discussion groups (Berry, 2019). Finally, informants mentioned that the proper use of the forum is vital, however it has been shown through the literature review, that e-learning instructors perceive it a challenge to engage students via the online forums that are a part of a VLE (de Metz and Bezuidenhout, 2018). The contribution made to knowledge by triangulating informants' responses to literature is that the online forum is a fundamental element of LQE that should be addressed by future researchers and e-learning experts, as its benefits are currently not being fully utilized.

Research results revealed that there was consensus among respondents that proper support and training are CSFs to e-learning effectiveness. This is aligned with present literature, as support from management has also been identified as a CSF by Alqahtani and Rajkhan (2020). Additionally, support services have been recognized as integral in prior literature (Mohammadzadeh, Ghalavandi and Abbaszadeh, 2017), with infrastructural support services and facilities being essential to enhance the full utilization of instructors' competences (Almas, Machumu and Zhu, 2021). Respondents have identified regular training updates as an enabler of this CSF, and the literature review revealed that instructors believe e-learning would be efficient, particularly with adequate training and support (Farhan *et al.,* 2019). Informants have called upon the need for training to be practical and hands-on, and this is aligned with extant literature, since Almas *et al.* (2021) have argued that the implementation of a solid e-learning strategy demands practical training of instructors on e-learning features. The empirical study revealed that instructors consider that an important enabler for this CSF, is institutions providing instructors with opportunities for self-training. Extant research supports this, with

self-efficacy being identified as a factor by Meriem and Youssef (2020). Furthermore, technological self-efficacy has been strongly linked to the utilization of a wider variety of technology-enhanced learning approaches (Cherry and Flora, 2017), thereby enhancing e-learning effectiveness. A new theoretical insight that has been gleaned from the interviews, is instructors' perception that offering trainings which are differentiated and needs-based would further enable the achievement of positive effects, however this also creates additional cost-effectiveness considerations for institutional management.

Empirical results showed consensus among respondents that instructional design is a CSF to e-learning effectiveness, with some respondents expressing concerns about its lack in many HEIs nowadays. Empirical findings are aligned with literature since according to Ives and Wash (2021), instructors state that increased emphasis on designing courses for effective learning is needed, and Naveed *et al.* (2020) regard instructional design as one of the main dimensions for effective e-learning. Additionally, ID has been identified as a CSF by Eom and Ashill (2018) in their E-learning Success Model. Interview participants confessed that their institutions currently expect them to carry out the role of instructional designers, and this is substantiated since e-learning instructors are regarded in extant research as designers in addition to their other responsibilities (Almas, Machumu and Zhu, 2021). Pedro and Kumar (2020) call for improvements to the ID arrangements at HEIs, ID is considered by Ashfaq *et al.* (2017) as a challenging area, and Al-Karaki *et al.* (2021) suggest that instructors must be provided with effective assistance concerning instructional design methodologies by HEI management. These are in line with the empirical findings. Interview respondents appealed for their HEIs to enlist expert teams to address ID needs, with whom to establish ongoing communication, and this is supported in extant research by de Metz and Bezuidenhout (2018), who implore HEIs to consider providing additional support for instructors by having them work with a team of experts such as instructional designers. Additionally, as per Al-Karaki *et al.* (2021), HEI management should consider forming university-level task groups that could assist instructors with e-learning course design. Respondents have stated that course flexibility should be ensured throughout the ID process, and this is aligned with research, since Choudhury and Pattnaik (2020) have deduced that course customization and flexibility are identified to be the major advantages to an effective e-learning process. A novel insight offered by informants, is that for ID to be effective, a transparent design policy should be adopted by the HEI, and complied with by instructors and instructional designers.

Concerning the perceived usefulness and ease of use of the e-learning system, most respondents have stated that the choice of a user-friendly platform is imperative. These findings are supported by existing studies which show that a decent user interface leads to less complex use, and thus less effort is required to access various parts of the VLE (Chavoshi and Hamidi, 2019). Moreover, the Technology Acceptance Model, which has been utilized by the researcher to integrate PU and PEOU into the CSFs of the present Thesis, refers to them as significant factors that affect the use of IT systems (Davis, 1989, as cited in Vululleh, 2018). These findings are further supported by Cherry and Flora (2017) who state that PEUO and PU of online technology are shown to be related directly to e-learning technology acceptance. Simplicity and functionality have been identified by interview participants as main enablers of this CSF, and this is important in ensuring its effectiveness, since the PEOU of instructors is dependent on the individual's features (Chavoshi and Hamidi, 2019). Based on previous research, it can be deduced that HE e-learning instructors with instrumental motivations are more likely to regard a technology as valuable and simple to use (Chin *et al.,* 2020), and institutional management should consider this and find ways to entice instructors to perceive the e-learning system as being easy and useful. This way, instructors will have the behavioral intention to learn the system by practicing on their own initiative, which is the second enabler of this CSF that has been revealed by interview respondents.

Respondents agreed that a robust technological infrastructure provides the foundations for any e-learning initiative and is therefore a CSF for its effectiveness. These empirical findings add to extant literature by also examining the instructors' perceptions concerning this CSF since Alhabeeb and Rowley (2018) have suggested that students consider technology infrastructure to be among the three most important CSFs, however this was not the case for e-learning instructors. Mohammadzadeh *et al.* (2017) have identified TI as a CSF from the perspective of e-learning experts, whereas Gupta *et al.* (2020) have done so from the point of view e-learning management. The instructors' perspective of TI is somewhat underrepresented in extant literature, and the present empirical investigation therefore sheds more light on TI from the perspective of instructors as well. Informants stated that one enabler for TI is apt investment in technological innovations. This is supported by extant studies, as future research orientations should focus on sustainable HE foundation for future innovations (Daniela *et al.,* 2018), and Luongo (2018) further suggests that management should focus on the institutionalization of any technological innovation related to education.

Informants have referred to embedding the proper digital tools and devices as an enabler to a robust TI. This is supported by existing literature, as improving human-computer interaction to increase individual capabilities in teaching has been deemed as important (Almas, Machumu and Zhu, 2021). However, respondents' answers are also in line with extant studies in terms of the need to not only providing the technological tools, but also embedding them and training instructors properly on how to use them. This empirical finding is reinforced in extant literature by Al-Karaki, Ababneh *et al.* (2021) who suggest that instructors must be provided with effective training on online learning tools, and this is because according to Almas *et al.* (2021) instructors often lack the necessary skills to utilize numerous learning tools present in an e-learning platform. Effectiveness of TI will be enabled, and issues like the exorbitant amount of time required to prepare courses using technological tools can be overcome with appropriate instructor training and sensitization on the available technological tools and devices (Meriem and Youssef, 2020). A prevalent view among informants is that the TI should be robust enough to support a large number of users, and a methodology of centralized knowledge sharing should be established to keep instructors updated with the latest technological tools that are available to them. This is compatible with extant research, as Al-Jedaiah (2020) motions for HEIs to have a knowledge management system, whereby they can create, store, transform and exchange technological knowledge.

As shown by the data, the IC have been identified as a CSF by informants, and this complies with extant research carried out by Alhabeeb and Rowley (2017) who have determined the relative significance of instructor characteristics and have recognized them as one of the most important components for e-learning effectiveness. According to the results of the empirical investigation, one of the key enablers for achievement of positive IC, is the development of instructors' pedagogical skills. The pedagogy element has been identified as one of the key areas of e-learning effectiveness per Graham (2018), Chavoshi and Hamidi (2019), as well as Pedro and Kumar (2020). Informants have also shared that another enabler for IC is to be flexible and present as an instructor. The empirical findings support extant literature, since instructor flexibility has been cited as an enabler by Kordrostami and Seitz (2021). The empirical results also revealed that instructors should be technologically literate, motivated and willing. This is supported by the present literature since Daniela *et al.* (2018) have stated that inadequate computer literacy does not affect instructors' perceptions positively. On the contrary, proper behavioral intention (Choudhury and Pattnaik, 2020), is needed to stimulate the necessary level of instructor motivation (Dunn and Kennedy, 2019) and eventual

acceptance of e-learning. Finally, respondents have shared that instructors should also adopt a teaching philosophy that would enable them to thrive in their e-learning courses, thus increasing their effectiveness.

Respondents unanimously agreed that SC are an important CSF to e-learning effectiveness. This goes in line with the literature review, since SC have been identified as a CSF by Mohammadzadeh *et al.* (2017) and Al-Samarraie *et al.* (2018). Additionally, Alhabeeb and Rowley (2018) suggest that according to instructors' perceptions, SC are amongst the most important CSFs. The empirical investigation revealed that, in terms of ensuring that students possess the adequate characteristics, instructors place significance on the improvement of the screening procedures for e-learning student applications. Moreover, interview results showed that the creation of a strong online community serves to foster the desired characteristics that e-learning students should be displaying. Prior studies have shown students' sense of community to be of key importance in terms of engagement and satisfaction (Berry, 2019). Finally, insights from respondents suggested that to reinforce SC, HEIs should provide them with online digital tools and trainings to improve their skills particularly with technology, and the use of the e-learning system.

The empirical results revealed that the course content in e-learning courses is possibly more important than in face-to-face courses because there is less interaction and students do a lot of self-study work. The findings are supported by theory, since course content delivery should be appropriately adapted for e-learning demands (Ahmad *et al.,* 2018). Further research by Chavoshi and Hamidi (2019) has shown that instructors believe course content to be more beneficial if it is up to date, sufficient, and complete. The first enabler to achieving proper CC as revealed by the empirical review is for it to be adapted to the needs of the students. If the course content is strategically aligned to address student needs, instructors would be motivated and ready to accept a new e-learning system (Choudhury and Pattnaik, 2020), and according to Ives and Walsh (2021) HEIs should prioritize ensuring the needs of students and instructors are considered. Respondents have also listed appropriate study materials as an enabler, and as revealed by the literature review, unless the course materials are appropriate, there would be lack of student motivation to participate in course activities (Hussain *et al.,* 2018). A novel insight from the empirical findings was the suggestion given by some respondents for HEIs to also consider outsourcing the course content preparation to specialized organizations.

The empirical results unveiled that instructors believe it is important to afford easy access to the e-learning system, thereby validating it as a CSF. These results have validated prior literature, since according to Ahmad *et al.* (2018), Barclay *et al.* (2018), and Orozco-Mesina *et al.* (2020), it should be convenient for users to get into to the e-learning system and find the resources they need, on multiple platforms. Respondents have listed enablers such as accessibility, and availability on different devices. These results are supported by literature since standardization of its structure for portability and stability, access control and rights, and a modular structure based on rapid consumption for various uses and settings are all enablers (Orozco-Messana, Martínez-Rubio and Gonzálvez-Pons, 2020).

The interview results showed that instructors appreciate the affective dimension of the e-learning educational process and have deduced that the social factors and interaction are very important to maintain this aspect, thereby justifying the inclusion of this CSF in the Final Framework. This is supported by prior research by Graham (2018), according to whom e-learning remains an inherently social activity. Furthermore, it has been shown that human and social factors need to be addressed to encourage e-learning acceptance (Olasina, 2019). Informants have suggested that one way to satisfy social needs is to enable exchange of ideas for e-learning students. This is confirmed by prior research, since Farhan *et al.* (2019) maintains that enabling student interaction satisfies social factors. Group work has been listed by informants as another enabler of this CSF, and prior research has shown this to be an important social component (Alhabeeb and Rowley, 2017; Ashfaq *et al.,* 2017). Integrating technological tools to enable clearer communication has also been listed as an enabler by informants, and this has been also revealed by the literature review, since Al-Karaki *et al.* (2021) support that it is important to train instructors on using the technological learning tools available to reinforce more communication and interaction in e-learning courses.

The empirical investigation into instructors' perceptions towards CSFs has validated the importance of the CSFs listed as preliminary factors in the initial framework. Novel contributions to theory were added through the insights provided by informants on how the benefits of each CSF can be obtained.

5.1.4 Theme 3: Instructors' perceptions towards e-learning barriers to implementation

This theme was examined through IQ6 and IQ 7a-j. Throughout the discussion raised by these questions, instructors shared their views on what elements they believe prevent e-learning from being properly implemented and are generally the result of leaving barriers to achieving a positive learning experience for themselves and the students unattended. The results were interpreted and coded into subthemes 3.1 – 3.10, and these were supplemented by asking respondents follow-up IQs 7a – 7j, thus validating these subthemes.

The researcher examined the respondents' perceptions of the specific barriers that were identified as preliminary factors of the initial conceptual framework, having arisen after performing a narrative review of the relevant literature. The investigation of instructors' views on these barriers aimed to shed light on how these are interrelated with the instructors' views that were displayed through the examination of Theme 1, which investigated instructors' general perceptions to e-learning effectiveness and implementation. The analysis gave rise to the subthemes 3.1 - 3.10 studied below, and it aims to reinforce the findings within Subtheme 1.2: "Challenges of e-learning", by obtaining instructors' perceptions on how mitigation of these barriers can help to reduce the challenges of e-learning that respondents have identified. Additionally, the analysis sheds light on Themes 4 and 5, by identifying the barrier mitigators where HEI management should focus their attention, to reduce the demotivation for instructor e-learning acceptance. The researcher, in his effort to obtain rich data regarding the reasoning behind instructors' perceptions, attempted to acquire information on the following issues concerning each subtheme within the confines of IQ6 and IQ7:

1. Is this barrier important and what are its negative effects?
2. How can this barrier be reduced?

The answers given by respondents concerning the amount of importance that they assign to each barrier were used to validate whether that barrier should be included in the Final Framework. Additionally, the answers relating to how each barrier can be reduced gave rise to novel contributions to theory and these were presented as "Barrier Mitigators" within the Final Framework of this Thesis. There were two new emergent subthemes arising throughout the analysis of results for IQ6: Lack of proper student assessment (Subtheme 3.9), and Non-

compliance with accreditation criteria (Subtheme 3.10). The discussion of all the relevant subthemes is outlined in the following sections.

5.1.4.1 Sub Theme 3.1: Limited HEI resources

This subtheme was examined through IQ6 and IQ7a.

Importance and negative effects of not addressing limited HEI resources

The general perception in terms of the extent of resources injected into e-learning is that institutions can always do more than what they are currently doing. Respondent 11 claims that more support and help would be useful for online instructors. There have also been remarks that institutions should strive to offer the best and most fruitful possible experience for e-learning students given the huge demand for online programs, and for this to happen, financial support from the institution is necessary. Otherwise, the learning quality would drop and HEIs would be offering online courses just for the sake of someone obtaining another degree.

Respondent 12 urges HEI management to turn more attention to this issue, by drawing on the necessity of investing in various key areas, to be in a position to deal with potential problems as they emerge:

> *"It is very important to address this. Investing sufficiently is necessary if you want to have a good online environment and proper support for students and instructors, especially in cases where problems emerge. So, of course it is very important for the university to invest more resources in online teaching"* (R.12).

How to reduce the negative effects by addressing limited HEI resources

- **Realize e-learning's financial potential**

Respondents in their answers to this sub theme have referred to the need for HEIs to realize that e-learning is one of the biggest sources of income for private institutions, and so management should invest more heavily to strengthen the infrastructure for online courses, as outlined by Respondent 9. This, however, should not be done at the expense of conventional courses as advised by Respondent 10:

> *"E-learning nowadays is one of the main sources of revenue for academic institutions, and the last thing that a university would want is to have problems with that. So I think*

they are far more interested in increasing their students in e-learning courses than in the conventional courses, and this creates the issue of huge cannibalization of the conventional programmes by the e-learning ones because they are far more profitable" (R.10).

- **Need for the preparation of a financial plan**

Respondent 5 has suggested that institutions should come up with an adequate plan to address budgeting issues, and this notion is also reinforced by Respondent 3:

"We need to have a digital plan at the university, with which we should all be familiar, we all know of its existence, and we participate, or representatives participate for its development. Because, for example, I don't know the budget that the university has for this equipment. I don't know where the money goes as an instructor" (R.3).

If this is not done, institutions would be less adept at managing budgeting constraints as they would arise.

- **Proper channeling of budget**

Several respondents have identified limited resources as a potential barrier, since HEIs are faced with the issue of maximizing the functionalities of the e-learning infrastructure, while considering the restrictions. To deal with this, the focus of investment should be reassigned to more important areas to prevent loss of quality in e-learning courses and as deliberated by Respondent 20, there always seems to be a trade-off between investing in training, or redirecting the resources straight to IT support, labs and workstations. One of the prime examples of barriers arising as a result of non-ideal distribution and channeling of funds is listed below as per Respondent 8:

"I think the emphasis on e-learning has been to get it off the ground. I think there is considerable investment, but it is focusing on the accreditation element, rather than making sure that the course itself is user-friendly and exciting for instructors and students" (R.8).

Respondents have indicated that the main budgeting issues have to do with investment not being channeled to the appropriate areas. If this issue persists, HEIs will be facing budget shortages, as a result e-learning could not be implemented properly, and this would lead to a drop in quality.

- **Invest in the right personnel**

Aside from budgeting issues relating to the e-learning infrastructure, respondents have also indicated that this should not be done at the expense of investing in the right human resources, as in this case, e-learning initiatives would simply not be driven forward.

> *"The budget allocated and the amount that is invested by the institution is not sufficient enough. Because, it is not only the equipment, but also the people"* (R.4).

5.1.4.2 Sub Theme 3.2: Lack of administrative support

This subtheme was examined through IQ6 and IQ7b.

Importance and negative effects of not addressing lack of administrative support

Respondents have indicated that lack of proper administrative support may be a barrier in some situations and may lead to issues like delays, miscommunication, and misinformation.

Respondent 8 has cited that these issues might be arising due to institutional administration focusing too much attention on the aspect of satisfying the CYQAA accreditation requirements, while neglecting the remaining components. The emerging issues of delay, miscommunication and misinformation would in turn give rise to other barriers such as students not being satisfied with the administration services and tending to score it very low as shared by Respondent 3:

> *"What strikes me is that the students on their evaluations also evaluate the admin support they get from the university units. The score is sometimes very low and I don't know why the students believe they do not receive this support"* (R.3).

How to reduce the negative effects by addressing lack of administrative support

- **Organizational chart of administrative responsibility**

Respondents have shared that the creation of such an organizational chart would make it clearer to ensure that administrative issues go to the right people in a timely manner. They would then be able to assist instructors with how to handle practical matters. Respondent 4 recalls a situation where they were being redirected from one administrative department to another and struggling for four days to pinpoint the right person who would be able to assist them with their

query. Therefore, they have reinforced the suggestion of creating a live organization chart of responsibility:

> *"Live documentation internally of who is responsible, like a dynamic chart should be available. People switch places from one department to another, but this should be shared via a live document with faculty, when it comes to key responsible people for e-learning"* (R.4).

- **Establish better communication among administrative departments**

Respondent 3 has admitted that generally, administrative units in their institution do not communicate effectively among each other. Other respondents have also shared this view and have explicated that this might not only extend to lacking the proper support by the e-learning unit, but also to the services of the university in general that are available to support the needs of the online students. Respondents therefore urge institutions to create better communication, coordination and synergies among the various student support units:

> *"Collaboration between different departments is needed: administrative, technical and financial. It is a team effort and the input from one department has implications on the other departments"* (R.4).

> *"Maybe a better way to coordinate the information admin staff provide could be found. I appreciate the pressure that is put on them, but for some things there is a red line and we should be keeping that red line regardless of the pressure or the financial implications that we have"* (R.5).

5.1.4.3 Sub Theme 3.3: Lack of technical support

This subtheme was examined through IQ6 and IQ7c.

Importance and negative effects of not addressing lack of technical support

Respondents recount personal experiences and have stressed that not having proper technical support would create many barriers for the proper implementation of e-learning. Respondent 14 recalls that numerous times over the past years, they were facing internet connection issues, or the platform was not responding, whereas Respondent 6 shares that these issues are exacerbated, particularly for instructors who might not be so familiar with technology. Respondent 8 and Respondent 9 have therefore stressed the vitality of having prompt access to

technical support, otherwise such issues would create lots of problems with e-learning in HE. Respondent 3 has also suggested that lack of technical support has to do with outdated technology.

> *"We have a lot of problems with our equipment as well and the university doesn't give you the opportunity to upgrade, even though the specifications of the laptops that were given to instructors don't cover our needs. We should have been asked what our needs are, before being given a laptop. I can't do my analysis or have multiple tabs open because it crashes, so if you are going to support me, support me adequately"* (R.3).

The negative effects of experiencing lack of technical support are illustrated by different problems instructors might face, as Respondent 16 demonstrates by drawing on their experiences during the onset of the pandemic:

> *"I think some of my colleagues had serious problems, especially the older ones. They had serious problems with their recordings, and you know, when COVID came into our lives, the administrative work for a teacher was too much and we were asked to first of all download the video recordings and then upload them to specific sections and to specific weeks with specific titles. This was a nightmare for some colleagues"* (R.16).

How to reduce the negative effects by addressing lack of technical support

- **Ensure instructors have basic IT competencies**

To deal with these barriers, informants have suggested that efforts should originate from the IT competence of instructors. Therefore, HEIs should ensure instructors are aware of the training seminars provided, and they should take it upon themselves to ensure that they obtain at least basic IT competencies, as Respondent 9 recommends:

> *"The support is important, but according to my experience again, there are tutors who don't know IT basics. These is not the job of the support teams. The job of support, in my opinion, is to resolve issues that are very technical, and the instructor cannot resolve them"* (R.9).

This way, the work of IT support would be alleviated, and they would be able to focus on resolving the truly complex technical support barriers, which instructors themselves would not be expected and able to deal with.

- **Ensure sufficient staff is employed in the IT department**

If there is a lack of instructor IT competences, and IT doesn't have the manpower to support this, then this is something that would lead to further barriers not only for instructors themselves, but also for students. As expressed by Respondent 9:

"If you have, say, 5000 students online, you cannot have an MIS department with two employees, and the university should adjust on that. So, if your online students are increasing, the support employees in your MIS department should be increasing as well. So, yes, lack of good support could be a barrier for both instructors and students" (R.9).

- **Ensure that bandwidth is optimized**

Respondents have cited the issues of insufficient bandwidth and poor internet connection as major barriers that inhibit the proper implementation of an e-learning course.

"We have been experiencing a lot of technical issues with the connectivity, students or myself being kicked out of the online platform while an online course might be ongoing" (R.13).

Respondent 5 evokes a personal instance of how their e-learning courses have been affected from poor internet connection on the university premises:

"An example would be the network/internet connection here at the department. I cannot teach from my office because if I try to turn on my camera when I am teaching, student cannot listen to me. So if we are returning back to the offices and we want to use the infrastructure here, we need to improve the network as well" (R.5).

5.1.4.4 Sub Theme 3.4: Lack of student motivation, participation and engagement

This subtheme was examined through IQ6 and IQ7d.

Importance and negative effects of not addressing lack of student motivation, participation and engagement

Respondent 10 explained that there are always some e-learning students that might not be as motivated, and they would appear to be disinterested or bored. According to Respondent 15,

this might be because e-learning students miss that extra level of challenge, excitement and engagement that a physically present student has, and it is inevitable that to a large degree the online students would go through the course in a rather mundane fashion. Respondent 9 further added that this lack of motivation is a barrier, and instructors are trying to minimize this problem by using all the tools they have available. Addressing the root of the problem, Respondent 18 attributes it mainly due to the fact that to a certain extent, e-learning students might not feel that they are truly a part of an academic community:

> *"For me the most important barrier has been the level of student engagement. I don't think that e-learning students feel like a part of the university community, as much as conventional students do"* (R.18).

How to reduce the negative effects by addressing lack of student motivation, participation and engagement

- **Structure course to give students access to interactive materials and tools**

Respondent 4 said that to address this barrier, students should be provided with full access to interactive materials, and to this extent, the e-learning material should be differentiated, if students are to be encouraged to engage and participate actively in courses. This is interrelated to and facilitated by developing a proper course structure, as Respondent 12 has revealed that the element of discussion should also be addressed through the interactive material and tools students should have at their disposal. This notion is also supported by the answer that Respondent 9 gave:

> *"You can motivate a student by creating a more interesting course with interactive exercises and videos. I am not saying that you are going to resolve the issue of demotivation, but you are going to minimize it, so if you have a course that is purely theoretical and boring, the instructor just talks to the students and then the students go home and have to study 100 pages, could lead to demotivation. I believe the issue of demotivation can be resolved to a certain extent"* (R.9).

- **Assess student needs by adopting a learner-centric approach**

The proper course structure and right tools can be gleaned through carrying out a student needs assessment, as Respondent 3 has suggested:

"It goes back to adopting a learner centric approach, basically just assessing what the needs of the learner are in order to design the course towards these specifications then you have to make the adjustments, otherwise they're not going to be interested in listening to you" (R.3).

Instructors should also be prepared to be flexible in terms of scheduling the synchronous sessions with students, in order to ensure maximum participation. It is important to follow a learner-centric approach since Respondent 7 has stated that different students have different levels of motivation, therefore the surest way to engage them is to put them at the center of the e-learning process and *"depending on the type of students, with some classes you need to constantly keep encouraging them to participate"* (R.7)

- **Small study groups**

Splitting students into smaller groups and making them work together is something that goes some way toward reducing issues of demotivation and lack of participation of students:

"In order to initiate discussion apart from the groups I develop for the projects themselves, I also divide the class into groups and I develop sub-classes, for instance, concerning various themes in a lecture and then I engage with each group in order to discuss the topics and themes that they need to learn, and then each group presents that topic or theme to the other students. Students working in groups like these, by nature they socialize more with each other to get the work done" (R.12).

Respondent 14 emphasizes this belief by sharing that it is one way to allow students to socialize with each other in small groups, by working together, and perhaps also meeting physically if distance allows it. Meeting in person would enable them to start creating relationships within their group and this is one of the major ways to make them socialize and participate.

5.1.4.5 Sub Theme 3.5: Lack of personal interaction between instructors and students

This subtheme was examined through IQ6 and IQ7e.

Importance and negative effects of not addressing lack of personal interaction between instructors and students

There is consensus among informants that lack of interaction can be an issue, and this is because the learning process happens best when there is interaction, either in the form of student to material, student to instructor, or students among them according to Respondent 11. If instructors are required to just rush through the e-learning syllabus, Respondent 15 has indicated that the important components of the student gaining an insight into the frame of thinking and thought process of the instructor, will be lost. Several participants have shared that the lack of interaction is what they mostly associate when they think of negative experiences during e-learning courses, however Respondent 20 acknowledges that it is a difficult area to tackle due to the limited time that instructors have to actually interact with students, as also exposed by Respondent 5:

> *"Wee do not have much interaction with our students because we just have three online presentations with them and these are not compulsory for students to attend. Most of the time it feels like we are talking to the wall, or to the screen because nobody has their cameras on and there is not much interaction taking place"* (R.5)

Other answers mentioned that the problem is intensified by instructors never getting to meet students physically, and the detriment is that the teaching process becomes more impersonal. This becomes even more challenging, as Respondent 14 mentions that instructors cannot feed off students' non-verbal cues and body language in such an impersonal environment, where they cannot even see them:

> *"Body language is so important for us to be able to read people's faces and people's movements, it is very important to be able to give feedback. So, the one thing that really gives me a hard time is that for most students, I am not able to see their faces because they might not even have their cameras on. So, the instructor is just facing a screen and talking"* (R.14).

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How to reduce the negative effects by addressing lack of personal interaction between instructors and students

- **Synchronous interaction with students**

Respondents have confessed that they find synchronous lectures more enjoyable because *"you can actually have this chance to talk with students, follow up and answer questions, discuss things"* (R.13). As a result, instructors find these more academically and quality-wise enhanced, because it gives the students the opportunity to speak with the instructor in real time, pose questions, and a discussion is created. The teaching process therefore becomes more interactive and as stated by Respondent 7, one of the main barriers that instructors are currently facing, is how to make e-learning courses more interactive. This is also confirmed by Respondent 13:

> *"Interaction with students is a lot less in online courses. I think it would have been much much better for the students and for us as instructors, to have more synchronous teaching, and use this to address student difficulties on the spot"* (R.13).

- **Foster discussion by asking questions**

Through conducting synchronous e-learning sessions with students, respondents have also indicated that the very valuable component of discussion during the learning process may be facilitated. Specifically, Respondent 14 shared that one of the main ways to get students to interact, is by asking them questions, having them discuss these in groups and subsequently for the instructor to be offering feedback. Respondent 19 agrees, however has also posed the problem of students sometimes getting away from their workstations, and the instructor having to find a way to keep them engaged:

> *"The problem is that sometimes students might get away from their computers, and this is something out of my control. By looking at the student list, I pick specific names and prompt specific students to ask me questions, and this is a way for me to see whether they are attending the class"* (R.19).

Informants have agreed that discussion is key, and this is shown by Respondent 7's thoughts:

> *"You can respond to students and advise them. You can discuss their problems and you can support them in overcoming challenges they are facing. You can also advise them, being older and more experienced than them. So, I don't think the process can take place without social interaction"* (R.7).

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- **Establish interactivity in courses**

A top priority is therefore establishing more interactivity in e-learning courses. Some respondents have referred to the appropriate use of technological tools in this regard:

> *"I try to include this in my teaching, for example there are a few things like creating a poll of who likes what and then discuss it. This way they play with technology as well, by clicking on things. So, if we have tools that make the teaching more interactive by touching, clicking, drawing, then definitely the students become more involved"* (R.14).

> *"We need to consider the educational purpose, and based on this, the most suitable technology and technological tools should be selected and implemented, to serve students' needs. This all has to do with the establishment of interactivity "* (R.4).

- **Conduct social sessions**

Some respondents have suggested that this could be a good method to bridge the distance that might be created between students and instructors due to lack of personal interaction. As per Respondent 13:

> *"We could hold social online gatherings with students. This is like something you would do in a conventional course during the break for example. Maybe having these online social sessions, is something that might substitute the social gatherings in the hallways say, or in the cafeteria"* (R.13).

Respondent 8 supports this idea since according to them, the social aspect of e-learning is currently an overlooked area, and something that should be addressed:

> *"I could be doing a social session for every new course to get to know the students better, but I have never done it. Introducing some things like this could work, and they are important. I don't know if they can cover completely what is missing, but I really think that much more effort can be expended towards the social aspect of e-learning"* (R.8).

- **Turn on cameras**

There was overwhelming consensus that this is something that would reduce the barriers created by lack of interaction. Respondent 14 has admitted that they expend a lot of effort to convince students of the benefits of this:

> *"It makes our job harder because we need to keep finding ways to keep students involved when they are in front of a screen. And when they do not have their camera*

on, this means that I need to do something to make them understand that it is important for them to see each other, at least. So, you know, I have really been struggling to explain to them the importance of them seeing each other" (R.14)

Respondent 16 suggests that if students are required to have their cameras switched on at the outset of a course, then most of them would keep their cameras open in subsequent sessions as well. Keeping cameras switched on would also reduce the barriers imposed on instructors by them not being able to observe students' facial expressions and body language, and it would also entice students to participate more.

5.1.4.6 Sub Theme 3.6: Lack of instructor IT competencies

This subtheme was examined through IQ6 and IQ7f.

Importance and negative effects of not addressing lack of instructor IT competencies

Respondents have shared that not assessing instructors' IT competencies prior to them conducting an online course could pose barriers. Reference is made to the feelings of Respondent 11 who stresses that if someone does not feel comfortable with using technology, then this can have a negative effect on e-learning quality. This would in turn cause anxiety to the instructor because they need to spend a lot of time to figure things out and to find a way to utilize and offer all the functionalities and full experience to the students. If the instructor can handle the technology very well, then this can offer a very rich experience to students.

How to reduce the negative effects by addressing lack of instructor IT competencies

- **Assess technological literacy of instructors**

Respondent 6 stressed that it is a must for the institution to *"evaluate the technological familiarization of the instructors, or pretty simply, do not allocate a distance learning course"* (R.6).

Some respondents have suggested that technological literacy might be age related as the problem might be observed with some elderly colleagues. Since it requires a lot of effort and technological literacy to create a good course, institutions should be careful not to overwhelm especially those instructors, who might have vast knowledge and experience on a subject, but

might not be very technologically literate, as advised by Respondent 20. Most respondents indicate that with the current technological developments, instructors can create great e-learning courses, but it is a still a complicated endeavor:

"There are various emergent technologies such as augmented reality and virtual reality, from low cost to really expensive and very difficult for an instructor to implement and use. So, it doesn't mean that all the instructors have the knowledge and skills for using this tool" (R.4).

Therefore, the consensus is that the tools that the organization recommends instructors to use, should not be too complicated since this will be counterproductive:

"What I don't like is that it requires too much technical skill to deliver something really good. It requires a lot of work in terms of preparing the materials, but you also need to have good technical knowledge of how the platform really works to put materials there which are not just slides. If you want to create something that is more effective and interesting, more appealing, you need to invest time and learn how the technology works" (R.13).

- **Reduce technology-related stress**

Some respondents have acknowledged that e-learning courses cause them technology-related stress, due to concerns whether the microphone and camera are working, or whether the session is being recorded properly. The more conversant instructors become with the technology, the more these stress related issues would be alleviated. It is especially important to do this, to enable instructors to deal with emergencies as this is a fundamental component of reducing technology-related stress in instructors, and can help to avoid issues like the one shared by Respondent 8:

"I think the biggest problem was when the server collapsed once and we couldn't conduct the exams, so we would have people coming in and trying to support, but not being able to do the right thing. That was indeed a very difficult challenge, and I felt very much alone when I was facing it. I had to escalate things to a very high level to people who again were going to call other people like for example chairs or deans" (R.8).

5.1.4.7 Sub Theme 3.7: Increased workload

This subtheme was examined through IQ6 and IQ7g.

Importance and negative effects of not addressing increased workload for instructors

Informants have related their teaching of e-learning courses with having an increased amount of workload, especially when considering the lack of time most academics are faced with due to their other commitments. The barrier is exacerbated, when it is also combined with the misconception that teaching e-learning courses is easier than conventional courses, and this is sometimes the prevailing attitude of HEI management. If the issue is not addressed, this could lead to burnout in instructors causing further issues such as instructors avoiding further social interactions with students to be able to cope with the demands of a course, as outlined by Respondent 9. Respondent 18 further states that:

> *"Delivery of e-learning courses does increase the workload for instructors in higher education, and it increases it a lot. It is easier to go and do your lecture face-to-face. If something doesn't work, next year you change it. But for the online course, many times because this is material that is on the platform, you just feel that it has to be perfect. Plus, not only that, but you also need to make sure that you look into additional parameters like student engagement and learning effectiveness, and this takes a lot of additional time"* (R.18).

These issues might lead to instructors preferring to teach conventional courses rather than e-learning ones, therefore resulting in a shortage of available faculty willing to teach e-learning courses as advised by Respondent 18.

How to reduce the negative effects by addressing increased workload for instructors

- **Streamline course set-up**

Respondents have shared that there is too much work involved when a new instructor gets into e-learning or to set up a new e-learning course, and this creates barriers:

> *"For new instructors to get in, and because it's not an option or maybe they don't have to, let say I don't think anyone would really bother because it's too much work at the beginning"* (R.1).

This view is supported by Respondent 12 because *"there is an increased amount for the instructor to set up the course online, create the groups and forums, and to receive training in terms of how to engage students in an online environment"* (R.12). Institutions should therefore consider streamlining this procedure to alleviate the additional workload.

- **Hire teaching assistants**

There is consensus among respondents that teaching assistants can help with preparing and uploading the material, and marking exams:

> *"If I had somebody to help me by me giving them my materials and it would be their job to upload them. This way, I will focus on the significant part, which is the actual WebEx and the actual answering of the questions. I would be able to have more time to focus more on the pedagogical side of things, and not have to spend so much time on the technical things which are not significant to the course"* (R.13).

Therefore, teaching assistants would help with time-consuming practical tasks, while the instructor can focus on the pedagogical aspects of the e-learning course, thus reducing the workload in a very productive manner.

- **Reduce administrative workload**

The increased workload has been related to an increased amount of emails instructors have to cope with, additionally to the administration that is required to prepare a course such as the filling out of various administrative forms.

> *"What changes is that I have to reply to double the amount of emails, and also have to evaluate and correct double the amount of projects and exams. So, with 50% more effort needed from one to two sections, that makes it barely ok to teach"* (R.15).

> *"The workload doubled, or even tripled. Yes, it was a huge challenge for us especially at the beginning it was chaotic because it is not just the teaching hours. The teaching hours were the same, I mean for one course three hours per week, but a lot of administrative workload was added, like various forms, and preparation for the course to take place in an exclusively online format"* (R.7).

5.1.4.8 Sub Theme 3.8: Resistance to change

This subtheme was examined through IQ6 and IQ7j.

Importance and negative effects of not addressing resistance to change

Some respondents have related the resistance to change barrier with the level of complexity of the platform they are required to use to carry out their e-learning courses:

> *"Of course, it would be better if the platform is easy to use, but according to my experience there is a resistance to change, so there are some tutors who even if the system would be useful and easy to use, they will never learn it"* (R.9).

Aside from this, as per Respondent 14, *"A lot of teachers are stuck in just one way that they know and feel comfortable with, and they are not willing to get out of their comfort zone, and to learn a new teaching technique that could be more effective"* (R.14). This has been associated with the character and personality of each instructor and Respondent 14 further suggest that there will *"always be people in whose nature it is to resist change because they might not have the ability to easily adapt to new things"* (R.14).

How to reduce the negative effects by addressing resistance to change

- **Encourage voluntary participation by instructors**

Respondents have suggested that if e-learning is performed voluntarily by instructors, then resistance to change is lower:

> *"The e-learning instructors usually come from a different pool of academics, so I would say that instructors who are doing this type of instruction are doing so because they have volunteered for it rather than people who have been asked to do so"* (R.10).

Institutions should therefore do careful screening of available instructors and offer e-learning course to the most suitable candidates, while encouraging voluntary participation.

- **Cultivate open-minded instructors**

Institutions should try to cultivate their faculty to be open-minded toward recent changes to the HE landscape, and the reasoning for this is expressed by Respondent 12:

"To be able to deliver a very good online experience, you need to have instructors that are willing to embrace change. In reality, e-learning is a change to the conventional model of teaching and it presents a different way of doing things. So, for this you need to have open-minded instructors in order to be able to understand the benefits of online teaching. If you have narrow-minded instructors who are resistant to change, then you have some difficulty in introducing it to them and making them use the online teaching environment" (R.12).

It has been indicated in answers that the ability to adapt, to get trained and learn, is something that rests with the person themselves, and if they are resisting, they might not be willing to work on themselves and therefore not change. As outlined by Respondent 14:

"Those people will cause issues for the academic institution, I think either the institution will have to find a way to make these people understand that they need to change so they put pressure on them, or they will never change. They should be reminded that they will need to get out of their comfort zone" (R.14).

- **Outline the benefits of e-learning**

Respondents have indicated that even though instructors are generally more open-minded nowadays, they need to see the potential in e-learning because if they don't understand what they can do with online teaching and learning, then it's difficult to convince them to adopt it. If HEIs address this and try to reinforce instructors' positive outlook, then instructors will be able to clearly appreciate the benefits offered by e-learning:

"Teachers were having a lot of misconceptions about whether online courses were going to be effective and saying things like: "But the things I teach, they are impossible to teach online!" So, all this stuff that you sometimes used to hear, a lot has now changed. People have changed the way that they view online teaching, they see its necessity and potential, and this is one of the positive things that have come out of COVID" (R.18).

- **Reinforce initial course support**

It is evident from respondents' replies that more support is needed in the beginning, both for first time instructors and courses, and once accustomed to it, the idea becomes less intimidating:

"The idea of online teaching has become less threatening, because until a couple of years ago, it was something unknown to a large part of faculty in higher education, and they were just happy with what they were doing" (R.18).

"In my department there was only resistance when we were asked to do the first courses. But when we saw how many students registered for the course, we saw the potential and then there was no more resistance. At the same time we could see the difficulties, there was a financial crisis, we knew that BA students would not be that easy to attract because of the financial implications, so we say it as a way to save the department and there was no resistance" (R.5).

It is therefore up to institutions to alleviate the entry fear by means of proper support, counseling and training, and thus reduce resistance to change:

"It is always about the fear which comes up as a result of an emotional reaction towards the new and unknown, if you are not familiar with online teaching technology. It is a question of how good someone feels using something they have no experience with. Yes, fear is an emotion that could prohibit instructors from effectively engaging in online teaching, but this can be alleviated if you train the instructor properly. Of course, there might be instructors who have no such emotional hold-ups and characteristics like fear, but the training can help those that feel these emotions" (R.12).

5.1.4.9 Sub Theme 3.9: Lack of proper student assessment

This is an emergent subtheme that arose as a result of the discussion on IQ6.

Importance and negative effects of not addressing lack of proper student assessment

Respondents have indicated that one of the main barriers to e-learning implementation, is not being able to validate whether it is the genuine work of the student in terms of their assignments. This issue also extends to exams where there is no proper invigilation process, and it cannot be verified if it is the actual student sitting for the exam:

"I think what frustrates me the most and what I find most difficult, is the examination part for the online courses. If you want to structure an exam in a way that you will be minimizing the copy-paste because most of our exams that are online, either we give them open-book open-notes, which means that I have to design an exam in a way that

is challenging, and it is not something which is copy-paste I find the assessment part very difficult and challenging." (R.13).

How to reduce the negative effects by addressing lack of proper student assessment

- **Improve assessment methods**

There is a general feeling among informants that sometimes students are not being properly prepared to take examinations that require critical evaluation, and this is mainly due to lack of discussion with students that would enable them to exercise their critical ability. This causes issues with properly conducting the assessment process. Respondent 13 states:

"If I make the exam challenging so that it will not be copy-paste, students complain that the exam is not mirroring what we have done in the course and we were not prepared to take it, it was an unfair exam and it was difficult" (R.13).

Respondent 17 further appeals that the assessment process as a whole needs to be improved for e-learning students so that it can be challenging on one hand, but students can also feel that they have the ability to do well with the proper preparation. Respondent 18 further mentions that the proper assessment process is subject to restrictions:

"Up until now, you had an online course and you couldn't assess online. But if you have to ask the students to come onsite to be assessed, you have missed the flexibility. In certain programmes I have had students from Fiji Islands to Nigeria and they told us that you needed to have one academic per assessment center. But you can't send academics all over the world to invigilate or assess one or two students. So, we basically had to bring them to Cyprus, but this again misses the whole point of online learning and teaching" (R.18).

It is evident that the assessment methods need to be considered and improved so that the whole process benefits from the advances in technology, but at the same time retains its conventional rigor.

- **Proper invigilation**

The desired improvement in assessment methodology could be bolstered by adopting proper invigilation methods to mitigate the barriers. Respondent 10 shares his skepticism for the effective implementation of e-learning courses, where proper invigilation is lacking:

"I mean, to be convinced about the positive result of those courses, all these courses that are taught online should have an exam, and that exam should be held physically under invigilation. If we were to do that, I would be very very happy with the online teaching" (R.10).

This respondent advocates for physical invigilation of e-learning exams, and the following quote from Respondent 15 contributes to the concerns that instructors have with current invigilation practices:

"If you are talking about online Proctorio examinations, I have not been convinced that it is full-proof in terms of cheating, and in terms of project work that carries a considerable weight of the course grade, like 40% or 50%, I'm 100% convinced that it is not full-proof. It's not even satisfactorily-proof" (R.15).

On the other hand, Respondent 8 outlines the practical benefits of online invigilation:

"I understand the concerns of colleagues, to have the exams online. I think this is really a benefit for practical reasons because I can use that time while I am invigilating students more efficiently" (R.8).

- **Detect plagiarism and commissioned work**

Respondent 10 outlines the reasoning for including more assignment work in current courses, which serves to stimulate the student's ability to display skills such as critical thinking and analysis, however at the same time they point out that there are websites that can just prepare assignments for students in exchange for a fee. One way this could be tackled, is to not have assignment work account for more than 50% of the course grade, while also introducing methods to detect such commissioned work and plagiarism in general. There are practical issues to this since:

"Because we don't know the people, we don't see them in the class, we don't know how they react, how they talk and how they think, we cannot really know if the assignments they have submitted are their own. So, we have that problem, where perhaps they might have bought the assignment and it is not their own work" (R.5).

This is also pointed out by Respondent 8, who shares that:

"The assessment of each student is based on 50% activities, take-home activities, and 50% on final exams. For the first 50% which are the activities, you cannot ensure that the

material which is submitted, is indeed the student's work and not plagiarism. You have some tools, but again it is not exams. You cannot monitor the student" (R.8).

This creates problems and a potential solution is advised by Respondent 9:

What I am trying to do is that, let's say a student cheated for the two assessment activities, the student will not be able to pass the course at the end. And this is a very difficult thing to do. You have to prepare the final exam in a way that addresses this issue. So cheating is an issue, and we all know that it happens not only in Cyprus but everywhere" (R.9).

5.1.4.10 Sub Theme 3.10: Non-compliance with accreditation criteria

This subtheme was emergent as a result of IQ6.

Importance and negative effects of not adhering to accreditation criteria

According to Respondent 6 *"there is the overall framework in Cyprus, and it is bounded by our government, specifically the accreditation committee CYQAA"* (R.6). The regulations extend over areas such as the course curriculum:

"The curriculum is built, evaluated and accredited by our ministry, CYQAA. We build the curriculum once. We build a specific study guide. More than 100 pages, which includes everything and weekly breakdowns of the overall curriculum into 13 weeks. Including interactive activities and non-graded and graded assignments. This booklet, for each module separately is accredited by our external evaluation (R.6).

Accreditation regulations also cover the proper conducting of the e-learning sessions:

"Additionally, CYQAA states that there has to be six online teleconferences per course, of one hour each. So, the instructor can't really cover the material in this way" (R.17).

The potential barriers arise when instructors might be feeling inability to customize a course due to the guidelines and directives that are received by CYQAA. On the other hand, if the instructor gets too creative, this puts their e-learning course at risk of not complying with the accreditation criteria:

"Why would somebody who is running a conventional course risk putting some sort of different structure for its online equivalent and then have problems with accreditation?

But with this rigidity, I definitely think that we are missing a trick there in giving customized solutions for students" (R.8).

How to reduce the negative effects by properly adhering to accreditation criteria

- **Ensure compliance with regulations**

This has been cited as one of the most important factors to mitigating the barrier, and is accomplished by strictly following the regulatory body's rules, as advised by Respondent 10:

> *"You have to remember that for a course to be validated by CYQAA, the application for accreditation should include a very detailed guide and to be honest with you, the academic who is leading the course doesn't have too many options on how the teaching process should be conducted, so it is all there"* (R.10).

- **Provide guidance to instructors**

Some respondents have indicated that instructors realize that some decisions that affect them are not institutional but come from the regulatory body. One of the problems that has been detected is that sometimes these decisions are not accompanied by enough guidance, and instructors are left unsure of how they can be implemented in practice:

> *"I think what would be useful is to help us translate and implement these decisions into practices. We received an email a couple of weeks ago from the vice rector who forwarded a decision from the national committee, that we need to implement specific assessment practices within the online courses. The email came without any further explanation, so what would be very useful for these instructions, is, how do we implement this? Could you have an example course we could see and make changes to our courses accordingly? Could we have a meeting where someone presents tools, strategies, or practices to help us?"* (R.5).

- **Maintain academic freedom**

Respondents have hinted that despite having to follow the rules and regulations, care should be exercised so as not to infringe on their academic freedom, because then the result will be counterproductive:

> *"I fully appreciate and accept that organizations like CYQAA and Ministries in all countries, not just Cyprus, they try to sort of control what's going on with online*

learning. I fully share their fear that universities are finding cheap ways to offer courses all-over the world and make money, without offering the corresponding quality. But you control that by setting certain principles and then expect the universities to show how they abide by those principles. Not actually intervene and tell the universities how they are going to teach, and what kinds of material and study guides they should have, and for instance that you should have homework each week" (R.15).

5.1.4.11 Discussion of theme 3 and its sub themes

The empirical analysis validated eight of the preliminary factors included as barriers in the initial framework, since respondents established that they can create problems for the implementation of e-learning courses. Two preliminary factors, "Non-inclusion in decision-making", and "Inadequate incentives, compensation and promotion opportunities", were not validated as most respondents did not deem them to be significant barriers, and they were excluded from the Final Template. Two emergent sub themes, "3.9 Lack of proper student assessment", and "3.10 Non-compliance with accreditation criteria" arose, and these were empirically validated and included in the Final Framework. Additionally, novel contributions to theory were generated when respondents were asked how the negative effects of the barriers can be mitigated.

The empirical investigation carried out by the researcher revealed that institutions can always do more in terms of investment in e-learning, and that more support and help would be useful for online instructors. Triangulating with the literature, according to Bryan, Leeds *et al.* (2018), investment in instructors' development is crucial for the mitigation of implementation barriers of e-learning. HEIs should ensure that the infrastructure to support academics is properly funded (Harrison *et al.,* 2017), and solving these matters requires investment, and there is a need for management action in terms of overcoming the barriers without incurring unnecessary costs. Informants have suggested that HEIs should realize the financial potential of e-learning and should make the analogous investment toward removing financial barriers. Enfolding with the literature, a significant investment is required towards barriers mitigation, and as a result, institutional needs which have to do with lowering costs, should also be aligned with individual instructor incentives (Annand and Jensen, 2017). It has also been revealed empirically that instructors believe that HEIs should have adequate financial plans in place to address this,

because as the literature review showed, e-learning systems typically represent a major infrastructure investment for HEIs and this significant investment has made user acceptance an increasingly critical issue for technology implementation and management (Barclay, Donalds and Osei-Bryson, 2018). Therefore, it was also revealed by the interviews that instructors believe that institutions should formulate a process for proper channeling of the budget, and the literature review has confirmed this due to the acknowledgment that need for investment in e-learning infrastructure is becoming an ever-increasing expense for HEIs and it precludes access to quality resources, technical support and the presence of quality infrastructure (Meriem and Youssef, 2020). Finally, respondents suggested that as part of the financial plan, their HEIs should consider proper investment in human resources, and this is also enfolded by the extant literature, since according to Berry (2019), HEIs must spend more fiscal and human resources to support e-learning students.

It was revealed by the interviews that lack of administrative support could create barriers like delays, miscommunication, and misinformation, and these might be arising because too much attention is spent on the aspect of satisfying the CYQAA accreditation requirements, at the expense of remaining services that should be available for instructors and students. Enfolding with extant literature, there is evidence of implementation failures owing to insufficient administrative supporting processes (Uppal, Ali and Gulliver, 2018). Respondents suggested the creation of an organizational chart outlining administrative responsibility, along with improved communication between administrative departments as mitigators for this barrier, and inspecting this through the literature review, support services and administrative services are paramount, as identified by Bryan *et al.* (2018). The importance of properly coordinating administrative departments to offer the needed support services has also been outlined by Mohammadzadeh *et al.* (2017). This is also supported by Almas *et al.* (2021) according to whom instructors should be equipped with the necessary infrastructural support services and facilities to reduce barriers they face with teaching e-learning courses.

The empirical review unveiled that not having proper technical support would create many barriers for the proper implementation of e-learning, with respondents citing barriers like internet connection issues, the platform not responding and them not being familiar with technology. This barrier has been enveloped within prior academic research obtaining instructors' views, and it has been argued that e-learning barriers are to some extent caused because of lack of technical support, and lack of relevant technology training for instructors

(Vaza *et al.,* 2020). Relevantly, respondents have suggested that as a mitigator, HEIs should ensure basic IT competencies are afforded to their e-learning instructors. The interviews also revealed that this should be implemented through hiring sufficient IT staff. Finally, the empirical research showed that lack of technical support barriers could be mitigated by the organization optimizing the bandwidth available, thus reducing the instances where support might be required. This is corroborated through prior studies by Gupta *et al.* (2020) and Uppal *et al.* (2018) who have called for HEIs ensuring bandwidth issues are dealt with to remove technical support barriers effectively.

Research findings showed that lack of student motivation, participation and engagement pose difficult barriers to e-learning implementation and have shared that there are always some students who are disinterested. According to the empirical data, this is attributed to facts like students missing that extra level of challenge, excitement, and engagement present in conventional courses, and them not feeling like a part of the university community due to the sometimes-isolating nature of e-learning courses. These views have been confirmed by referring to the literature review, as one of the most prominent barriers is a lack of student motivation to participate in various course activities and to use certain course materials (Hussain *et al.,* 2018), attributable to lack of their perceived usefulness from the students' perspective, thereby hindering the quality of e-learning systems (Farid *et al.,* 2018). The analysis of empirical data demonstrated that instructors associate provision of interactive materials and tools to students as a mitigator. Additionally, the research results showed that assessing student needs, and forming small study groups in e-learning courses could also work towards mitigating this barrier. According to the Literature Review, e-learning requires modification of certain aspects of its implementation, which no longer satisfy all the needs of the educational process teaching and its assimilation by students (Kryshtanovych *et al.,* 2020). In accordance with Ives and Walsh (2021), HEIs should ensure the needs of students are considered as education progressively becomes more online based, which is in line with the research findings.

According to the Literature Review, an important barrier identified in e-learning environments is the lack of interaction between students and instructors (Farhan *et al.,* 2019). As Graham (2018) suggests, literature shows that the absence of social interaction is a major barrier to a positive on-line learning experience. Additionally, the literature indicates a lack of attention to human and social factors in the e-learning agenda (Olasina, 2019). The findings affirmed that

lack of interaction can be an issue, and this is because the learning process happens best when there is interaction. The lack of interaction is what instructors mostly associate when they think of negative experiences during e-learning courses and the detriment is that the teaching process becomes more impersonal. Research findings suggest that one of the ways to mitigate this barrier, is by introducing more synchronous courses in e-learning to foster discussion and establish course interactivity. Practical ways of reducing the barrier that have also been revealed by the empirical research, is arranging social sessions with students, and requesting that students keep their cameras switched on.

The literature review revealed that technological skills among instructors are crucial in supporting their online teaching (Atim *et al.,* 2021). This is aligned to the research findings which revealed that not assessing instructors' IT competencies prior to them conducting an online course could pose barriers. If someone does not feel comfortable with using technology, then this can have a negative effect on e-learning quality because it will cause them anxiety. This corresponds to literature, as technological barriers include things like computer anxiety and time required to prepare courses using the technological tool as well as the level of complexity of using the system (Meriem and Youssef, 2020). According to the empirical findings, mitigators include assessing technological literacy of instructors prior to them conducting an e-learning course and reducing technological stress.

Literature suggests that it is critical to evaluate e-learning instructors' workloads and how they are being handled in the face of conflicting demands on their time (Harrison *et al.,* 2017), as one of the largest e-learning barriers is insufficient pay for increased workload (Cherry and Flora, 2017). Many instructors think that e-learning courses typically lead to an increase in course size and faculty workload, which both have quality implications for course and program delivery, thus undermining instructors' objectives (Al-Karaki *et al.,* 2021). Increased workload is associated with grading assignments and preparing for an online course (Cherry and Flora, 2017). Empirical findings show that instructors relate their teaching of e-learning courses with having an increased amount of workload, especially when considering the lack of time most academics are faced with due to their other commitments. Furthermore, research results suggest that mitigators for this barrier could be to streamline course set-up, hire teaching assistants and reduce administrative workload for instructors. The findings support literature, since prior research indicates that management can mitigate this barrier by setting realistic workload requirements which, accompanied by appropriate other incentives, can guarantee quality instruction in larger e-learning classes (Al-Karaki *et al.,* 2021).

The literature review proposed that overcoming barriers such as resistance to change is critical to the adoption of e-learning (Ives and Walsh, 2021). As indicated in prior literature, varying levels of resistance have been documented related to the need to acquire new skills (Pedro and Kumar, 2020). This is in line with the empirical results, since they have revealed that instructors relate the resistance to change barrier with the level of complexity of the platform they are required to use to carry out their e-learning courses. Mitigators to this barrier that were unveiled by the empirical review, are encouragement of instructor voluntary participation, cultivating open-minded instructors by outlining the benefits of e-learning and reinforcing initial course support.

Empirical findings suggest that one of the main barriers to e-learning implementation, is not being able to validate whether it is the genuine work of the student in terms of their assignments. This issue also extends to exams where there is no proper invigilation process, and it cannot be verified if it is the actual student sitting for the exam. Mitigators are improvement of the assessment methods, proper invigilation, and detection of plagiarism, presenting novel contributions to extant literature.

Empirical findings revealed that in terms of accreditation, the potential barriers arise when instructors might be feeling inability to customize a course due to the guidelines and directives that are received by the accreditation body. On the other hand, if the instructor gets too creative, this puts their e-learning course at risk of not complying with the accreditation criteria. According to the literature, accreditation bodies are one of the main stakeholders in e-learning, and HEIs should pay attention to the requirements, otherwise it could pose serious barriers to implementation (Choudhury and Pattnaik, 2020). Empirical results confirm this, by indicating that the main mitigators are compliance with regulations, and guidance to instructors while at the same time maintaining academic freedom.

The empirical investigation into instructors' perceptions towards barriers has validated the importance of the barriers listed in the final framework. Novel contributions to theory were added through the insights provided by informants on how the problems created by each barrier can be mitigated.

5.1.5 Theme 4: Instructors' perceptions towards institutional management actions

This theme was examined through IQ8 and IQ9. Respondents were asked to share their views on what they think and feel about the quality, extent and ways of management support offered by their HEIs in relation to the CSFs discussed under Theme 2 and the barriers discussed under Theme 3.

5.1.5.1 Sub Theme 4.1: Instructors' perceptions towards institutional management actions to address e-learning CSFs

This subtheme was examined through IQ8. The researcher attempted to gain an insight into the thoughts and feelings of respondents concerning institutional management actions performed at their HEIs to reinforce the achievement of CSF discussed in Theme 2 of the Thesis. Respondents were also asked to share their views on how management support may be improved.

Most of the respondents view institutional management actions to address e-learning CSFs positively, and respondents were also asked to share their views on what further actions they would like to see from their HEI. The results were coded into the following sub nodes, and the researcher linked each category of actions suggested by the respondents, to the corresponding CSF dimensions examined under Theme 2, as well as to Theme 5, to discern how these factors affect instructor's motivation to acceptance of e-learning.

Respondent 18 provided a well-rounded overview of instructors' perceptions in terms of management actions to achieve CSFs.

> *"The institution should make sure that technology is up to date, that innovative tools are being introduced, that the instructors are trained on these, and that people's time is appreciated in terms of the effort that is needed to design and deliver the courses. I think these are the areas where I would want to see management being more responsive in order to make sure that the e-learning quality is there"* (R.18).

- **Provision of guidelines to instructors by management**

Respondent 19 shared that some of the key management support they are receiving from their institution, is in in the form of guidelines which instructors are expected to follow.

"The help I have been receiving from my institution is mostly in the form of guidelines as to the format in which the syllabus needs to be prepared, and how the course outline should be presented" (R.19).

Respondent 1 has gone into more detail, explaining that instructors at their institution are expected to act according to the guidelines every week, there has to be a pre-recorded introduction of each week's material which is available for students to review at any time. There is also a video that instructors have to put that is a welcoming video which talks a little bit about themselves and the course.

The answers are relevant to sub theme 2.8, course content, and sub theme 2.3, instructional design, and more specifically the notion about instructors wishing to receive more targeted guidelines related to the proper application of the CYQAA regulations, while also retaining their academic freedom within the constraints of the guidelines.

- **Supervision, assessment and feedback to instructors by management**

Respondents have shared that they are obtaining supervision and feedback from HEI management, and as per Respondent 20 *"There is of course a degree of supervision and control so to ensure that we stick to our deadlines and the material is proper"* (R.20).

Respondent 10 acknowledges that their HEI has procedures for obtaining feedback whereby both students and instructors can make recommendations on how the e-learning process can be improved. This is supported by Respondent 7, who has shared that their institution has regularly been sending questionnaires to monitor the learning process and obtain feedback from the instructors regarding weaknesses and what could be done better. Respondents state that student feedback is just as important as the one that comes from the institution, and that is why Respondent 8 urges institutional management to *"design really good feedback templates customized specifically for e-learning, and what students feel about the e-learning experience, and feed that back quickly and accurately to instructor in order for them to be able to respond. This is also allowing students to speak about practical things"* (R.8).

These perceptions are relevant to sub theme 2.6, instructor characteristics, where respondents have stated that a fundamental component is to develop the pedagogical skills of the instructor.

- **Provision of flexibility and autonomy to instructors by management**

Most respondents have stated that the rules and guidelines imposed by their institution should not be at the expense of flexibility, and this is something instructors expect from their HEIs.

> *"Flexibility and autonomy, yes, and I speak for myself. I would like to have the flexibility and autonomy, which to a very large extent I have. Where I do not have flexibility and autonomy it is usually because of the regulations of CYQAA, not the university"* (R.15).

Other respondents have mentioned that their institutions should consider being more flexible in terms of providing instructors with the option of conducting some of their physical courses online. Respondent 15 well sums up that autonomy and flexibility need to be paired with robust monitoring procedures, therefore HEI management should try to strike the balance between the two.

> *"But, despite the fact that as a university I would give autonomy and flexibility to lecturers, at the same time I would have procedures for close monitoring and control"* (R.15).

The answers under this node are relevant to sub theme 2.6, instructor characteristics, and more precisely informants recommending that one of the desired traits for e-learning instructors is to be flexible and present for their students. This should therefore be bolstered by the institution, in the form of providing instructors with the desired autonomy and flexibility to allow them to be present for their students and to be able to address their needs.

- **Provision of tools and resources by management**

It is the belief of most respondents, that their institution provides instructors with good tools to assist in the e-learning process. It has been stated that some of the most important things that the institution can provide for e-learning instructors is good information technology tools to assist them in the course delivery. What some respondents have requested, is if their institution can provide them with the means to find and access more precise digital educational resources. As shared by Respondent 3:

> *"The university gives us the opportunity to access for example the library. Through the library, we have access to peer-reviewed journals and e-books. All these are really important educational resources. Educational resources are important not only to satisfy our own needs, but also the needs of our learners"* (R.3).

Other respondents have focused on the fact that online courses are more efficient than conventional ones, and this is epitomized by Respondent 6:

> *"If you want to build a physical lab for instance, it would cost you triple as compared to building the same lab virtually. The most important job of the management of the university is just to provide the resources. The tacit knowledge belongs to the instructor and they know better how to deliver a course"* (R.6).

The provided insights are relevant to sub theme 2.1, learning quality and environment, and 2.5 technological infrastructure. More precisely, under sub theme 2.1, respondents call for better organization of tools on the e-learning platform, and under sub theme 2.5, there is consensus that institutional management should give consideration to how various digital tools can be embedded into the technological infrastructure of a HEI, to make the e-learning process more effective. Embedding the tools effectively, would also have a positive impact on student characteristics, discussed under sub theme 2.7, as well as on improving social factors and interaction (sub theme 2.10), by integrating the technological tools to introduce more interactivity in e-learning courses.

- **Provision of training organized by management**

Respondent 5 has shared that instructors generally receive a lot of online training on how to use the platform, and how to use some of the tools that the platform offers. This is further supported by various respondents:

> *Our university often conducts and offers seminars especially for newly hired online staff and faculty, or collaborators who will be teaching an online course"* (R.11).

> *"The university provided me with training by having various videos to show us how to develop how to develop an online teaching course and various ways of how to engage students in those videos. So, this helped me as an academic to understand how I could do my online class better"* (R.12).

> *"I have also been receiving trainings organized by the institution on how to cover the material. All these have made it easier for the instructors to be able to prepare for the lectures properly and to teach more effectively"* (R.19).

The offered perceptions are relevant to sub themes perceived usefulness/ease of use (sub theme 2.4), instructor characteristics (sub theme 2.6), student characteristics (sub theme 2.7), support

and training conditions (sub theme 2.2).

- **Provision of infrastructure by management**

One of the main expectation of instructors, as per informants' responses, is for the institution to provide robust infrastructure. Respondent 15 supports that *"if they offer me the infrastructure, then I can do my job well, and to the degree that I can judge, they are offering it quite well"* (R.15). Respondent 5 also states that their institution has evolved a lot in terms of online learning and teaching, and they attribute this largely to the infrastructure, which has enabled HEIs to scale up the volume in terms of e-learning courses. However, the respondent also advises that *"now we need to go to the next step, from the quantity part to the quality part"* (R.5). Respondent 18 has shared that the infrastructure also extends to creating new units and developing a network which would form the backbone of effective e-learning courses provision *"There is a network that was established for enhancing e-learning, and this is not just for academics but also for students"* (R.18).

It is evident from respondents' replies that HEIs should focus their efforts on strengthening and expanding the infrastructure and these ideas are relevant to sub theme 2.5 technology infrastructure, which was identified by respondents as a CSF to e-learning effectiveness.

- **Provision of administrative and technical support by management**

Respondents are overall happy with the administrative and technical support received from management, and according to Respondent 19, these efforts have enabled instructors to teach their online classes more effectively. Additionally, Respondent 18 believes that their institution is exhibiting the willingness and momentum to help academics go further in terms of online learning. Respondents have generally stressed that this kind of support is very important and Respondent 6 has stated that support by the top management is of utmost importance for these initiatives to work. This would have the effect of assisting instructors in a timely manner, as pointed out by Respondent 3:

> *"Ok first of all, in terms of technical support, this is provided. When I encounter problems during my online teaching, I know the people that I need to contact, and the problem will be resolved within the day. Also, if I go to the premises of the university, there are available digital devices to be used for online teaching"* (R.3).

Good organization by management would result in institution-wide positive initiatives and

these have far reaching implications in terms of the quality of support received by instructors, concerning the effectiveness of e-learning courses, as shared by Respondent 5:

> *"They have set up an entire unit, the distance learning unit, which does all the administrative work, that I'm sure we wouldn't want to be doing ourselves. They have set up the technical support unit, that provides a lot of support as well" (R.5).*

One area where respondents have advised that management should focus their attention, is to ensure that there are the appropriate people in an institution who are able to provide high-level support related to translating available technologies into effective pedagogical actions:

> *"If I had the opportunity or the technological know-how to do this kind of more interactive presentations or courses, that would be really amazing. And I think what I am missing here at the university is not the knowledge of the technology, since we have a lot of people who know the technology, but rather we do not have the people who know how to translate these technologies into pedagogical actions"* (R.5).

The ideas shared by respondents are relevant to sub themes: support and training conditions (sub theme 2.2), instructor characteristics (sub theme 2.6), student characteristics (sub theme 2.7), and technological infrastructure (sub theme 2.5).

- **Management focusing on the quality of e-learning**

Respondent 15 has recommended that despite institutions striving to offer autonomy to their e-learning instructors, they should also focus on maintaining the e-learning quality high, and this could be done by ensuring that a degree of uniformity exists:

> *"Distance learning students need to have a very methodical approach to how they are studying. You also need to have, to the maximum possible degree, similarity between the teaching methods of the various lecturers, so I would monitor and control very closely to ensure uniformity, logic in structure, and quality"* (R.15).

This is important to address because certain respondents have shared that some of the biggest concerns instructors have with e-learning, is with regards to the quality of these courses.

> *"I think e-learning is becoming something that we are using more and more, and this is something that will continue despite any motivations or any management actions. The difference comes in where you want to be in terms of quality and effectiveness. So if you want to have good quality courses and to be effective, your instructors to be*

effective in what they are doing, be happy with what they are doing and feeling that they are gaining as well and are developing professionally, then you need to cultivate instructors' intrinsic motivation or bring in extra help. Otherwise, everybody will deliver online courses, but it is the quality that matters" (R.18).

Respondent 8 has provided the valuable insight, that should institutions wish to turn their attention to addressing quality issues in the e-learning process, they need to understand that the instructors form a fundamental component of this process, and they should therefore be included:

"The e-learning department's aim still seems to be just delivering the course, rather than to also include the teachers into the process and listen to them. So, the institution does not see the instructors as a part of what makes the e-learning experience. And it is something so easy to do, it is just giving out a survey and then acting on the results" (R.8).

These ideas are relevant to sub theme 2.1, learning quality and environment.

- **Provision of motives and benefits to instructors by management**

This notion is supported by Respondent 4:

"So, no matter what technical capabilities the instructor has, in order for them to be motivated, it is not going to be reinforced simply by those practical or technological means. Something more needs to be done in order for them to feel better overall in order for them to be able to do their job properly, which is essentially to perform. Because, what instructors do, its like a performance. And we also need motives to move on with our teaching. It is not only about being passionate about your work, but also feeling that you have the right support to be motivated" (R.4).

These ideas are relevant to sub theme 2.6 instructor characteristics, where respondents have advocated that instructors should be motivated and willing.

5.1.5.2 Sub Theme 4.2: Instructors' perceptions towards institutional management actions to reduce e-learning barriers

This subtheme was examined through IQ9. Respondents were asked to share their views on what they think and feel about the quality, extent and ways of management support offered by their HEIs to reinforce the reduction of the negative effects of e-learning barriers discussed in

Theme 3 of the Thesis. Respondents were also asked about their opinions on how management support may be improved.

Most of the respondents view institutional management actions to reduce e-learning barriers positively, and respondents were also asked to share their views on what further actions they would like to see from their HEI. The results were coded into the following sub nodes, and the researcher linked each category of actions suggested by the respondents, to the corresponding barrier dimensions examined under Theme 3, as well as to Theme 5, to discern how these factors reduce instructors' demotivation to acceptance of e-learning.

- **Alleviation of instructors' workload**

This is one major way in which barriers to e-learning can be reduced, and as shared by Respondent 11:

> *"One challenge with e-learning is for management to be able to understand that just because a course is delivered online, that doesn't make it easier. Sometimes there is this notion that because you teach online you can be credited with less instructional hours and it might be considered by institutional management that an online course requires less of your time, which is not true"* (R.11).

Therefore, for HEI management to be able to control the amount of workload of e-learning instructors, there should be a clear perception of the extent of work that e-learning courses entail. Respondents have shared that instructors are academics, who also have other responsibilities and aspirations, and if their teaching load is too heavy, this will be counterproductive in other areas of their academic work. Striking the balance is very important, because Respondent 2 counsels that *"this has a direct relation with our mental state, happiness, and level of motivation. You cannot have a good performer when this performer is tired or even exhausted"* (R.2).

Management should ensure that the workload is reasonable, especially where the instructor teaches both conventional and e-learning courses, and with increased amounts of students wishing to obtain degrees via e-learning mode, institutions should also consider expanding their faculty work force accordingly.

> *"Hire more full-time faculty. Because full timers have a triple pipeline of responsibilities: teaching, research, admin duties. If you overload a full-time faculty member with teaching, how are they going to perform research, and admin duties? And*

If you are talking about a professor who is 60 years old, I mean the answer is obvious here" (R.6).

These ideas are relevant to sub theme 3.7, increased workload, where respondents advocate that administrative workload should be reduced, and institutions should consider having more teaching assistants to reduce this barrier.

- **Provision of administrative support by management**

Respondents are of the opinion that administrative support by the institution is indispensable, especially when it comes to addressing problems and issues with e-learning courses.

"What is needed, is to have a good distance learning support office receiving those incidents and trying to resolve them expediently" (R.2).

"I think it is very important to hire people that can help the academics in terms of using the technology. Because for us, ok we learn some things, but we don't know the technical parts so well. So, it's important to have somebody to help, especially when problems emerge" (R.18).

The presented views are relevant to sub theme 3.1, limited HEI resources, and 3.2 lack of administrative support, where respondents have advocated that institutions should invest more heavily in HR, in terms of specialized administrative personnel.

- **Provision of resources by management**

Respondents have addressed various types of resources which would be useful in reducing barriers, if provided by institutional management. Some of these are related to the process of invigilation and assessment and Respondent 1 gave particular examples:

"We have Turnitin. That's a really good tool that is offered by the university to make sure that at least plagiarism wise, I get some sort of a check about student's work if it's original or not. Proctorio helps in the delivery of the exams to make sure that there's not cheating going on which is something that you worry about with online exams. This kind of support that is offered to us to be able to at least get some quality out of the assessments is good" (R.1).

Respondent 2 has mentioned that institutions should avoid developing over-complicated systems, as the resources could be provided more easily:

"When you are developing and using over-complicated e-learning systems that involve too many moving parts and have too many interdependencies, then the probability of having a buggy or faulty system and processes, is increased. So, you need well-designed and developed systems that fit and suit their precise and well-calculated purpose, and these systems need to be trustworthy and robust" (R.2).

Respondent 6, in this vein, has suggested that it is a matter of reallocating resources to prevent the barriers that sometimes arise. Responded 13 has given the example of allocating more resources to tools that help with the proper assessment of students such as databases with cases and problems, and answers, which could lead to designing exams that are fairer.

The consensus is that even though institutions are providing resources, more would always be advisable as long as they are channeled in the appropriate ways.

"I would like to have more resources. For instance, for my students to have a better access to libraries, to more e-books, so that students can read more, for free. Because being in a private university, everything needs to be paid for. So, definitely more resources with respect to books and libraries, and notes" (R.7).

These are related to: Lack of instructor IT competencies (sub theme 3.6), Limited HEI resources (sub theme 3.1), and lack of proper student assessment (sub theme 3.9).

- **Provision of technical support by management**

Respondents have stated that the main way they receive technical support is through the IT departments in their institutions, which they consider to be indispensable. Respondent 12 has added that it is important for the IT department to be on stand-by to resolve barriers quickly, and overall respondents have shared that they are happy with the IT support they have been receiving. However, Respondent 13 recalls that technical support used to be better in the past, with the onset of the pandemic, however it has waned more recently:

"In the past we used to have a much better technical support and occasionally we had help in putting up exams. Uploading the exams and making them available with restrictions, but now it is something messy. People left, there are no substitutes for those people that left, we were told that suddenly it was our responsibility to upload the exams on the platform and put the necessary restrictions on Proctorio" (R.13).

It is important for institutions to maintain the level of technical support high, even post-pandemic, because technical barriers are one of the most common types of problems that have been cited by respondents, referring to occurrences like technical issues, and micro incidents.

These views are related to sub theme 3.3 lack of technical support where respondents have backed the need to have a properly staffed IT department.

- **Provision of technology and other trainings for instructors**

Respondents are strongly advocating for this, despite the fact that it is provided to a large extent currently in institutions:

> *"They could of course try to do more in the issue of training instructors. I am not saying that the current degree of training we receive is not useful, it is something that needs to be done, and the organizations need to keep investing in it"* (R.20).

Training should be focused on improving the online skills of instructors, as some of them have reservations and are concerned that lack on online teaching skills might be causing barriers for both them and the students.

> *"The problem cascades into the e-learning process as well, and to that you also need to add the ability to navigate through the e-learning environment. So, this would presuppose not only just an hour of training or so, but instead having an actual degree which would be subsidized by the institution. That is really important, because I don't think there are innate characteristics, I think the instructor characteristics can up to a large degree be acquired. I mean, if someone is still using transparencies, they will need training in technology matters for instance"* (R.8).

These notions are related to the following barriers: lack of instructor IT competencies (sub theme 3.6), resistance to change (sub theme 3.8), and lack of personal interaction (sub theme 3.5).

- **Responsiveness and promptness by management in dealing with instructors' issues**

Informants advise that management should be responsive toward the satisfaction of basic criteria, and should be taking into account the needs of instructors to avoid barriers relevant to resistance to change.

"I think it is important for management to actively listen to the needs of faculty not just in terms of e-learning but also any form of learning because the needs are changing and evolving and you need to be open-minded and responsive to the faculty needs. If you are not responsive, then you need instructors who are very very self-motivated" (R.18).

This also has to do with instructors reaching out when there is an issue and communicating this issue to management, to establish a two-way communication for resolving problems:

"To be quite honest with you, it is up to us to reach out to them and ask them for assistance if we have any problems. So far, my experience has been that they would not say no because let's face it, e-learning nowadays is one of the main sources of revenue for academic institutions" (R.10).

"The management might reach out if they notice something, for instance how frequently an instructor will be accessing the platform, and they are reminding us of the minimum requirements that need to be satisfied on the part of the instructor, for the purposes of maintaining quality" (R.11).

These notions are related to barriers arising as a result of resistance to change (sub theme 3.8).

- **Provision of invigilation tools by management**

Management should be on the look-out for new invigilation software and should be giving consideration to investing in any new tool that could improve the invigilation process, especially if these are recommended by national regulatory bodies.

"You have some regulations that you need to follow and for instance when you want to conduct an examination in an online teaching environment, there it becomes a bit more complicated because you need to have the consent from all students to have the microphones and cameras turned on, and consent that they are being recorded, all in order to enable the invigilation process. This has been the main problem that I had" (R.12).

"I understand that e-invigilation software is not perfect, and I think we are still not using it as we ideally should. I think that the e-invigilation program that enabled online exams to be held, is a really good step forward. Most of my colleagues hate it and I

have heard stories of cheating, but I personally think that such programs are an enormous help to teaching online" (R.8).

These notions are related to reducing lack of proper student assessment (sub theme 3.9), and non-compliance with accreditation criteria (sub theme 3.10).

- **Provision of infrastructure by management**

One area that respondents have covered, is the need for improving the infrastructure:

"The infrastructure definitely needs improvement. It has been improved, over the last two years, I cannot say otherwise. But instructors need to be supported more as far as the equipment is concerned. I mean, you shouldn't have to wait for like 10 years to get a laptop. So yes, we need more support in terms of newer equipment, and upgrading equipment all the time" (R.7).

To avoid issues like this, the management should devise a digital strategy and implement it across the organization.

"What could be done more is that the organization should formulate a digital strategy. It is important to have a strategy that is going to be developed together with the instructors, also they need to involve companies in this strategy. If there is no adequate funding, for instance being able to equip me with a good laptop to do my job, they need to involve and collaborate with companies to overcome this" (R.3).

These notions are related to sub themes limited HEI resources (sub theme 3.1), and lack of administrative support (sub theme 3.2).

5.1.5.3 Discussion of theme 4 and its sub themes

The literature review revealed that in order to be able to support the process of addressing e-learning CSFs and barriers, Al-Karaki, Ababneh *et al.* (2021) suggest that instructors must be provided with effective supporting actions by HEI management. Additionally, there is a need for further exploratory research on HEIs leadership initiatives, management actions and processes required to support these disruptive academic changes in the HE industry (Ives and Walsh, 2021). According to the empirical results, institutional management actions should focus on making sure that technology is up to date, innovative tools are being introduced, instructors are trained on these, and that people's time is appreciated in terms of the effort that is needed to design and deliver the courses. Additionally, the research results revealed more

precise actions that instructors believe and expect their HEIs to take like the provision of guidelines for e-learning instructors. Enfolding with the literature review, HEIs require regulations and proper criteria for e-learning course design. Such frameworks include relevant guidelines and standards ensuring quality (Ashfaq *et al.,* 2017). Pedro and Kumar (2020) have suggested that HEI management guidelines and standards for online course design, are areas that could be included within the e-learning quality framework adopted by management.

The empirical results suggested that HEI management actions should also cover areas like provision of instructor supervision, assessment and feedback, flexibility, and autonomy, as well as tools and resources. Additionally, instructors expect their institutions to provide training, infrastructure, administrative and technical support, as well as motives and incentives for instructors. Further management actions expected by instructors are alleviation of instructors' workload, responsiveness by management in dealing with instructors' issues and provision of invigilation tools. These management actions should have as a focus the improvement of e-learning quality, which is one of instructors' biggest concerns with e-learning, as revealed by the results of the empirical study. The research results are in line with extant literature, which suggests that online program management support should be supplemented by the existence of a teaching assessment process (Pedro and Kumar, 2020). Furthermore, literature shows that a distinct request by e-learning instructors towards HEI management, has been for recurring feedback concerning aspects of their role (de Metz and Bezuidenhout, 2018), and for HEIs to give trainings to e-learning instructors so they are able to reap the benefits from the flexibility and convenience of teaching e-learning classes (Cherry and Flora, 2017). The literature review also showed that instructors place autonomy very highly (Choudhury and Pattnaik, 2020), coupled with provision of tools and resources which should be invested in the most cost-effective way, based on instructors' needs (Atim *et al.,* 2021). The research results revealed that instructors expect their HEIs to provide them with a robust infrastructure, and this is affirmed by literature, since the creation of non-cost-effective infrastructures is an essential form of management support, as per Orozco-Messsana *et al.* (2020). E-learning instructors should also have access to the appropriate infrastructure support services and facilities to ensure that their skills are fully utilized (Almas, Machumu and Zhu, 2021), and infrastructure, support services and administrative services is paramount, as identified by Bryan, Leeds *et al.* (2018). Institutional incentives provided to instructors are important management actions as per Meriem and Youssef (2020), whereas lack of such incentives could lead to barriers (Pedro and Kumar, 2020), and this is in line with the empirical results. The research also revealed that

instructors expect one of the management actions to be alleviation of instructor workload. This is compliant with extant literature, since according to Al-Karaki *et al.* (2021), management can address barriers to e-learning by providing instructors with proper training, compensation and realistic workload requirements. Instructors must be compensated for their training time and only a reduction in teaching load, accompanied by appropriate other incentives, can guarantee quality instruction in larger e-learning classes.

The empirical investigation into instructors' perceptions towards expected management actions to address CSFs and barriers gave rise to the factors included in the final framework. Novel contributions to theory were added by converging the insights provided by informants on how management actions affect the achievement of e-learning CSFs and mitigation of barriers, as studied in the present Thesis.

5.1.6 Theme 5: Instructors' acceptance of e-learning

This theme was examined through IQ10, IQ11 and IQ12. Respondents were asked to share their perceptions on how management support to reinforce the achievement of CSFs and reduction of barriers influences their willingness to teach e-learning courses.

Acceptance is influenced by management actions

Most of the respondents have indicated that their acceptance of e-learning would be influenced by appropriate institutional management actions to reinforce the achievement of CSFs and reduction of barriers.

> *"Of course. I believe that the more the institution invests in providing guidance, help and support, the more and more instructors will be willing to engage in e-learning and they will be less frustrated and they will use their time more productively to improve the learning materials"* (R.13).
>
> *"I think they have been very helpful throughout my whole online teaching experience. They did help a lot so that had a positive effect on my experience for sure"* (R.14).
>
> *"Yes, of course. And it is also the course that I had to do on online teaching that influenced me positively, and then I wanted to teach online because of that course. So, it is definitely influencing. And you learn a lot of things through these courses offered by the institution"* (R.17).

"Yes, definitely. My experience and the way that I am doing my online teaching, is definitely affected by the way that the organization is also facing these. It couldn't be otherwise, I mean if the university did not support and facilitate this procedure, did not provide me with the insights and all the trainings, then my teaching approach and my teaching experience would be completely different" (R.7).

"Yes, absolutely. And they have also been adding to the amount of effort" (R.8).

"Yes, definitely it has been influenced, because if I didn't have this support, maybe I wouldn't put in that much effort" (R.5).

The responses indicate that institutional support affects instructors' acceptance of e-learning. The researcher further elaborates that this relationship is mediated by both intrinsic and extrinsic factors, as suggested by respondents' replies.

"I think it is influenced yes, and also by internal factors that have to do with the instructor, so it is both. You need the external support from the organization, and you also need the internal passion, so if you want to have an effective e-learning course and experience, I think you need to have internal motivations, and also receive adequate support from management, otherwise if you just have the passion without adequate support, you will burn out" (R.11).

"Yes, of course. I would say that there is a relationship here. I mean, the more support you receive from your institution, the more willing you would be to teach online courses. Yes, but it is not only this, it is the hourly rate as well, let's say it's 50-50. 50% of it is due to the fact that we cannot raise our voice as a staff member of a private HEI, and the remaining 50% is the remuneration" (R.16).

"It is both influenced by the organization and intrinsically. Everything starts from the instructors' willingness. Also, the university tries to have a more systematic evaluation process, and introduce metrics and measurables, for our online teaching" (R.4).

"So essentially there is this internal, intrinsic element of self-motivation, and obviously if it is there, and it depends on the character of each instructor, then they would find ways to motivate themselves. But then there is also those external sets of factors which arise as a result of the organization's involvement, which could reinforce these internal

self-motivation factors and also serve to eliminate barriers or problems, which if present, obviously it might be difficult for the faculty member to truly utilize this internal self-motivation that they have. I think people can be motivated and they can continue to have this intrinsic motivation if you respond to their needs and you help them with all these external factors" (R.18).

Informants have indicated that the way the organization affects instructors' acceptance of e-learning is two-fold. Firstly, since respondents acknowledged that instructors should have the appropriate internal motives, the institutional management should ensure that they have ways to foster these internal motivation drivers. Secondly, the HEI is expected to provide the means for instructors, by which external factors affecting the acceptance level of an instructor would not be negatively affected, thus leading to demotivation for acceptance.

5.1.6.1 Sub Theme 5.1: Intrinsic factors

This emergent subtheme was examined through IQ10, IQ11 and IQ12. The researcher attempted to gain an insight into how intrinsic factors for instructor acceptance of e-learning can be fostered through appropriate institutional management actions. The subtheme is related to achievement of CSFs and to benefits of e-learning. HEIs should provide adequate support to address the CSFs that instructors view as important to allow them to develop their intrinsic motives.

- **Character and internal motives**

Respondent 18 has cautioned that organizations are relying on instructors' self-motivation capacity, and this is dependent on the instructor's character and internal motives, however institutional management should be responsive to their needs, to reinforce these internal capabilities.

> *"If you are not responsive, then you need instructors who are very very self-motivated. So you only get the very self-motivated people to be involved. I found that a lot of the things I myself have achieved and also the group of faculty I have been closely working with, were because we viewed e-learning as an opportunity to learn new things and develop and we didn't look at it from the perspective that we weren't receiving sufficient support to the extent of the effort we were putting in"* (R.18).

However, it should be noted that these internal factors need to be supported by proper institutional actions, since they need continuous reinforcement.

> *"But at some point people will saturate their self-motivation, and then they will stop doing things. So, if you don't actively listen to their evolving needs, they will then just say, ok, I have done what I have done, I personally have gained this and I am not going to gain anything more by doing anything extra, so that's it, I am not doing anything more. So, if the institution wants to be doing clever management, they need to be responsive, and first of all seek opinions, and then be responsive towards faculty needs"* (R.18).

To better address these, HEI management should be trying to address instructors' personal circumstances, as advised by Respondent 2:

> *"HEI Management also need to take into account the personal circumstances of instructors. Perhaps some of them have specific individual needs, and HEI management should try to address those to keep e-learning instructors happy"* (R.2).

By doing so, management would be earning instructors' appreciation and gratitude, therefore helping towards satisfying their intrinsic motives to get engaged with e-learning, as demonstrated by Respondent 3's insights.

> *"The reason I teach online is because the university invested a lot of time and money to build these distance learning programs before my arrival at the University. So I am teaching online because they gave me this opportunity. Without them building the distance learning programmes, I wouldn't have any experience for online teaching. So, the university gave me the opportunity to do so. I need to acknowledge the fact that the university invested time and money to build these distance learning courses and the distance learning unit, which does fabulous work"* (R.3).

- **Enjoying academic freedom**

Respondents have suggested that instructors should have the freedom to conduct e-learning courses in their style, while also receiving professional assistance on technical and pedagogical matters, to help them best express themselves, and get the most out of their teaching experience. Affording academic freedom is important, as demonstrated by Respondent 15:

"They do a good background and supportive work, it hasn't caused any problems, inefficiencies or barriers to my teaching. Ideas and notions that might be there, and maybe I should have expected them or even demanded them that could have made my online teaching experience better, but from what I can see they have avoided placing constraints to my teaching, and having this freedom is the goal from my perspective" (R.15).

This is further supported by Respondent 9, who suggests that instructor's motivation is driven by the freedom they enjoy as an e-learning instructor:

"In my opinion, the motivation that would drive an instructor to choose to teach an e-learning course, is the freedom that it provides for the instructor. I can teach from any place I want, I personally like the facilitator characteristic of the tutor, so that is closer to my character" (R.9).

- **Use of imagination and innovation to solve online teaching challenges**

Respondents have indicated that for e-learning to be accepted, institutional effort should be focused on cultivating and reinforcing the ability of the instructors, who are experts in teaching and in their subject matters, to be able to use their innovation, imagination and to be able to express themselves through the online teaching process.

"To me what matters is if instructors are allowed to use their imagination, problem-solving skills and innovation capacity in designing something that will be effective for the students. So, I think, moving forward this will be achieved by giving instructors new technological tools that will reinforce these things I have mentioned, and by having less restrictions arising from the university management, the institutional strategy, and the quality assurance agency. Because at the end of the day, especially if you have experienced academics who know through their experience what works well and what needs to be changed, you need to give them the flexibility to design effective e-learning courses which are hands-on, applicable and relevant to the needs of the industry as well" (R.18).

Allowing instructors to satisfy these desires to use imagination and innovation to solve online teaching challenges, would also enable them to learn new things and expand their skills, which is valued by Respondent 7:

"Overall I think I have learned a lot of things both good and bad, but regarding the teaching experience, it helped me a lot, I learned many things and I tried to pass on what I had learned to my students. I think they also appreciate it the same way I appreciate it" (R.7).

- **Achieving job satisfaction**

Respondent 18 has offered the illustrative insight that *"it is about job satisfaction at the end of the day, and the institution should pay attention to that. If the instructor is satisfied, then the quality of the courses will be better* (R.18). Other respondents have indicated that within job satisfaction is contained the joy and gratification of transferring knowledge to their students:

"The substantial thing of the process, which is the experience, is because of the joy and satisfaction of transferring knowledge to new learners. The experience in my opinion is robust, meaning it does not depend on peripheral parameters like digital tools. I'm focusing on the core teaching elements which are intrinsic" (R.2).

"You have to have the inner instinct to work for the best of your students. Of course, the support from the University makes me motivated to work and give the best and create the best online environment that I can, but I think everything depends on the person. They can give you the financial support, they can give you the equipment, but if you don't care and if you don't have this mentality of creating a course based on your students' needs and give them the opportunity to engage in authentic learning experiences, take into consideration the fact that all come from different backgrounds and have different abilities" (R.3).

Respondent 17 has specified that transferring knowledge is enabled by the aspect of good online interaction between instructors and students. If the institution takes actions to improve this aspect of interaction, then this would affect instructors' experience greatly in a positive way, so it would help to increase the job satisfaction levels of instructors. Respondent 17 has emphasized the importance of this component by stating that: *"For me this feels like a very serious thing and if it is addressed I would get more satisfaction out of teaching"* (R.17).

- **Having access to training, resources and infrastructure**

Respondents have indicated that provision of further teaching resources and robust infrastructure by their institution would reinforce their motivation to accept and engage in e-

learning to a higher extent:

> *"For sure their actions are influencing my online teaching quality, but it is not enough. It's approximately 60%-40%. 60% is the knowledge that you gain as an instructor, from the infrastructure in the university that includes development courses, trainings and seminars"* (R.9).

> *"Obviously! If you ask for a specific software and the university says no, what are you going to do? The effectiveness and the quality of the course is going to be reduced"* (R.6).

The same also holds true for valuable training sessions offered to instructors, to help them improve their skills. Respondents have stated that this would show instructors, that the organization is willing to invest in their development, further reinforcing intrinsic feelings of motivation:

> *"Yes of course, I mean imagine not having the training when I first began teaching online courses, and only being given the regulation that I need to begin teaching online courses. Comparing no training with training, yes this greatly helped, and it was an institutional activity for the instructors to be able to do the classes better"* (R.12).

Respondents have advocated that more extensive training sessions are needed to fully address instructors' needs, especially to master the various tools available to help them improve their e-learning courses.

> *"I think what is mostly lacking currently in trainings, is addressing the issue of how far I can get my lesson with the available technology. If I knew where I could get my lessons to, then this would add great value to my courses. You need to see the bigger picture first, like addressing the issue of how you can transform your lesson with the current technology"* (R.18).

- **Work-life balance**

Respondents have indicated that if the institution helps them maintain their work-life balance, the motivation for acceptance of teaching e-learning courses is higher:

"I can have a great online teaching experience if I feel that the institution is helping me to maintain my work-life balance. This is one of the most important things in my opinion" (R.2).

Institutional management should therefore realize that instructors are academics, and they have multiple responsibilities. Therefore, the course workload should be managed properly, because as stated by Respondent 3, *"how is this possible to happen when you have to teach and build so many courses. It's not feasible. At some point if you tried to work both ends, your work-life balance would be affected"* (R.3).

- **Achieving self-improvement**

The ambition for self-improvement is an important intrinsic factor to e-learning acceptance by instructors, and institutional management should pay attention to it. As indicatively shared by Respondent 1: *"this improvement comes intrinsically more than anything else"* (R.1). To accomplish this, Respondent 2 states that the institutions should strive to encourage instructors to intrinsically want to teach e-learning courses:

"The tutor must want to teach the e-learning courses. It is an intrinsic feeling. If HEI management are not doing anything to satisfy it, this cannot be masked by the organization introducing extra technology for example" (R.2).

This way, instructors will be driven to also want to self-improve, so as to maximize the benefit of the e-learning experience for both them and the students:

"In regard to teaching online, of course I had to educate myself. I had to read; I remember I started self-educating and watching videos so that I could be able to develop my courses online. There was a large degree of self-study and self-learning to get myself prepared for this" (R.11).

Some respondents have shared that institutional management assistance to self-improve has helped them to increase their self-confidence:

"If they are close to their faculty, I would say they are helping me teach better, and I feel that this way I am also enhancing my own professional and academic capabilities. This helps me build up my confidence more, and therefore I am able to enjoy the online teaching experience as a result. I feel that now I am able to use these tools a lot better than when I first started teaching online, and this is largely because of the training courses my institution has been organizing" (R.19).

Respondents have also shared that if they believe they are gaining from the e-learning experience, they would actively try to improve themselves, and this would result in higher motivation to adopt and excel at delivering online courses:

> *"When you know something very well, it is easier to provide this service to students. So, if I am feeling very familiar with the platform, and with the pedagogical model, by obtaining the relevant knowledge from the seminars and from the development of the faculty, my willingness to offer e-learning courses will be higher. I would try to improve myself if I feel that the institution is making a conscious effort to assist me"* (R.9).

5.1.6.2 Sub Theme 5.2: Extrinsic factors

This emergent subtheme was examined through IQ10, IQ11 and IQ12. The researcher attempted to gain an insight into how extrinsic factors for instructor acceptance of e-learning can be fostered through appropriate institutional management actions. The subtheme is related to reduction of barriers and to challenges of e-learning. HEIs should provide adequate support to address the barriers that instructors are facing to allow them to develop their extrinsic motives. As stated by Respondent 19:

> *"My experience is influenced not only from internal motivations and factors, but also by external factors arising as a result of the efforts that my institution has made to help me"* (R.19).

- **Receiving praise and appreciation by institutional management**

This is considered to be important by informants, to reinforce the extrinsic factors affecting acceptance of e-learning:

> *"It is important that people's time is appreciated in terms of the effort that is needed to design and deliver online courses. I think these are the areas where I would want to see management being more responsive in order to make sure that the e-learning quality is there"* (R.18).

- **Having an appropriate amount of workload**

Respondents have shared that it is important for institutions to regulate the amount of workload they have, as it would affect demotivation for acceptance. Mainly, Respondent 5 has suggested that instructors shouldn't be teaching too many online courses per semester, and for a maximum number of students to be allowed to register per class. Respondents seem to be aware of the financial implications of such actions, but this is something relevant to the prevention of the

quality of e-learning courses from dropping, which is one of the main concerns for e-learning instructors.

Respondents have suggested practical ways for management to not overload instructors so there is room on the part of the organization to contribute, through the provision of human resources and infrastructure. Then it is up to the lecturer to elevate the teaching process because they will be less overloaded by other not-so-related things to the pedagogical approach such as all the administrative aspects that are associated with the online course. So if the organization finds ways to reduce or eliminate these administrative components that the lecturers have to be involved in, then that would be one way to restrict demotivation. More precisely, Respondent 13 suggests that:

> *"Management should not expect the faculty to be doing trivial technical things like uploading notes, putting up quizzes. That eliminates my frustration, so I can spend my time productively designing materials, and then I won't have to spend hours to find out how to put up just one quiz, for instance"* (R.13).

This view is also supported by Respondent 15:

> *"If I had the time, or the support, I could have done a better job. There is a lot of load on the shoulders of lecturers with general administration, research, general scholarly work, funded projects, and so on, that really they cannot dedicate the time and effort to teaching to the degree that they could have"* (R.15).

- **Receiving adequate administrative and technical support**

It is important for instructors to feel that they have the institutional support by their side, to help them resolve challenges that they face with the e-learning process:

> *"Definitely the institution helped us a lot to overcome technical barriers, social barriers as we have mentioned, psychological barriers but also they were there. I mean we knew that whenever we would need to face any problems, they would always be there to support us" (R.7).*

That being said, Respondent 11 has offered a practical insight of how institutions can help instructors resolve the challenges, and reduce demotivation:

> *"I don't not think it should be a part of my job to continuously keep looking for online tools that I could add to my courses. Offering us with resources that we can use in our online courses, is something very important. Support is always needed, because it is*

not just support that would help you begin your course if you are new to teaching online. It is not just that. If you want your course to be dynamic and interactive, you need to have this support environment as well" (R.11).

Respondents feel that management actions extend largely to offering administrative and technical support to overcome challenges, and Respondent 1 believes that if this is done properly, it would take a lot of weight off of the complications of teaching online. This is supported by other respondents' answers too:

"There is definitely a positive correlation there. The more technical support I feel I will have, the more courses I will be willing to teach online. But I need technical support. At this stage, I am now frustrated for the fall semester because I want to do changes to the material that I currently have, and I don't have the time to spend to find out how the platform works so that I can be able to do all these changes that I want." (R.13).

"Instructors have a lot of support to be honest, because for example I don't have to contact the student that hasn't logged in for a few weeks, but the administration is going to do it. And this is very helpful" (R.5).

These views are summarized by Respondent 16:

"It is not that I am fully negative with the online teaching, I am able and willing to teach online, I love teaching in any case regardless of the mode of delivery, but with the proper level of students, proper facilities and the correct approach from the management of the institution" (R.16).

- **Convenience of e-learning courses**

Informants have acknowledged the convenience of e-learning courses in terms of overcoming physical barriers like distance, time and stress for students.

"I do believe that you create less stress to the students, the students don't waste any time travelling to campus, the lecturer is more relaxed, he doesn't have to spend time travelling to campus" (R.10).

"Because I tend to travel a lot, or at least I used to pre-pandemic, and hopefully we will catch up now, it was always convenient to have at least half of my courses online. We teach four courses, and if I could do two of them physically, and two online, it gave

me some flexibility so that I could also travel and participate in conferences and international networks" (R.17).

"When you live let's say far away from the university for example, you don't lose time commuting to go to the university, because nowadays the traffic is unbearable, so you save time" (R.3).

- **Job security**

This is another extrinsic factor that serves to reduce demotivation for acceptance of e-learning courses among instructros:

"I remember management was telling us we need to develop e-learning courses. We had to, because instructors saw that even if things didn't work out at the university, and if we decide to close some programs because we don't have enough students, that would be a project which has a lot of income. So even if we "lost our job" with the traditional students, we still had something. So, we had to invest in that to feel the sense of security that at least we're also doing online so they're not going to get rid of us if the rest of the programmes are not going well" (R.1).

Institutional management should communicate to e-learning instructors the serious intent concerning online courses, so that they would be able to accept them as a viable mode of delivery, and feel assured that if they invest in them, this will be reciprocated by job security.

- **Adequate remuneration**

Respondents have identified monetary rewards as another factor which reduces demotivation:

"If you give me more money, ok, and that is more motivation. Again it depends on the character of the instructor, but if someone is not paid well, sooner or later they will not be putting so much effort in creating a high quality e-learning experience. And of course, the salary is a crucial form of motivation. If you want me to be more efficient and productive, and to have a positive effect on the students, management has to be aware of all these things" (R.9).

"If you are not getting the salary increase that you want, then the motivation of being a better teacher, or teaching more effectively kind of starts shaking a little bit" (R.14).

Institutional management should also consider increasing the course set-up fee, as there was consensus among respondents, that this is one of the most demanding parts of teaching online courses:

> *"A way to get faculty onboard e-learning may be increasing the amount of compensation they give for the set-up. I think it's too low, it's sort of a disincentive for new people to get on board"* (R.1).

- **Time release**

Additional to monetary rewards, some respondents have also mentioned that time release is an important factor that reduces demotivation to accept teaching an e-learning course:

> *"In terms of motivation, not so much salary but perhaps some more time release to be able to construct or rebuild a course in a more effective way, because we are working on the modification of our e-learning courses while we teach, as we run the courses, and while also conducting research"* (R.4).

> *"It might be about compensation but in terms of time, and not in terms of money. For me it would make more sense if, for example, management told me that for this semester, you don't have any teaching, and instead of teaching you have to use your time to set up three courses online using specific techniques that an expert will teach me. This makes more sense"* (R.5).

> *Honestly, and I know that a lot of people talk about the monetary aspect, but for me it is less important. I think the way to support or attract academics to e-learning teaching is to actually free up more of their time so that they can use it the way they want. So I think this is a good way to incentivize instructors to take up e-learning courses and to try to teach effectively"* (R.8).

- **Train the students**

Respondents have mentioned that having disinterested students is a source of demotivation to teach e-learning courses. For this reason it has been suggested by Respondent 20, that to deal with this barrier, HEIs should consider providing preparatory training sessions for students who are about to join an e-learning class:

> *"If they want to do something, then train the students. Added courses about how to conduct themselves in e-learning classrooms. Something that has to do with online etiquette. These kinds of notions, decency, respect, etiquette, are not so easily and*

commonly used today. We use terms like innovation, but not these. And it is a problem. Because at the bottom if it, learning is an affective activity where you need to have these basic skills in order to be able to go through the process, besides the needed technology of course" (R.20).

5.1.6.3 Discussion of theme 5 and its sub themes

According to the Literature Review, instructors' acceptance of e-learning is deemed to be crucial (Kumar *et al.,* 2019), and it is a timely topic in light of COVID-19, which has forced faculty to make a quick shift to different types of online or remote instruction (Pedro and Kumar, 2020). Consequently, literature calls for important factors influencing instructor acceptance of e-learning to be investigated more thoroughly (Chavoshi and Hamidi, 2019) because the significant investment made by HEIs has shifted instructor acceptance to be an increasingly critical issue for technology implementation and management (Barclay, Donalds and Osei-Bryson, 2018). Empirical findings indicated that instructors' acceptance of e-learning would be influenced by appropriate institutional management actions to reinforce the achievement of CSFs and reduction of barriers. Participant's responses suggest that institutional support affects instructors' acceptance of e-learning, and the researcher further elaborates that this relationship is mediated by both intrinsic and extrinsic factors, as suggested by respondents' replies. This is validated by extant literature, since the implementation of a solid e-learning strategy demands well-prepared instructors and a great degree of management support (Orozco-Messana, Martínez-Rubio and Gonzálvez-Pons, 2020) with instructors requiring "*both extrinsic and intrinsic motivation as well as practical training on several e-learning features"* (Almas, Machumu and Zhu, 2021, p.88). Research findings support literature, because participants shared the need for both intrinsic and extrinsic motivating factors, arising as a result of management actions to address CSFs and barriers, for e-learning to be accepted by them as a viable mode of course delivery.

Research findings indicate that the way the organization affects instructors' acceptance of e-learning is two-fold. Firstly, instructors should have the appropriate internal motives, and the institutional management should ensure that they have ways to foster these internal motivation drivers. Secondly, the HEI is expected to provide the means for instructors, by which external factors affecting their acceptance level would not be negatively affected, thus leading to demotivation for acceptance. Enfolding this with literature, it is indicative that since instructors

are intrinsically and extrinsically motivated, if they perceive that there is worthy effort on the part of HEI management to meet e-learning CSFs and overcome barriers, this will likely increase their propensity to accept e-learning (Chin *et al.,* 2020). The researcher has utilized the Technology Acceptance Model (TAM) to discern the factors that drive up motivation for acceptance in instructors, as the TAM has been used as a framework in various instances in subsequent scientific literature in order to measure technology acceptance of e-learning stakeholders by also introducing additional variables (Chin *et al.,* 2020). Human and social factors in online education, as identified by Chavoshi and Hamidi (2019), are determinants that need to be addressed in terms of encouraging acceptance of e-learning. Subsequently, studies by Chin, Puong *et al.* (2020) recommend that by incorporating the emotional or affective elements of motivation factors into the TAM, researchers would obtain a better understand instructor acceptance, and in this vein, Kordrostami and Seitz (2021) suggest that investigations into whether any additional elements might be present in an expanded TAM are worthwhile. Using the TAM, Chavoshi and Hamidi (2019) have investigated the role of social, individual, technological, and pedagogical factors impacting e-learning acceptance in HE. In terms of reinforcing instructors' acceptance of an e-learning system, integrating the emotional components of motivational factors to better understand intentions of academic staff to use e-learning (Chin *et al.,* 2020) is a practice that should be prioritized by HEI management.

The literature review has shown that instructor perceptions are partly formulated through an intrinsic process of reasoning, acceptance, and motivation and are closely connected to their individual experiences with e-learning (Cherry and Flora, 2017). This is in line with empirical findings, since the instructor's character and internal motives play a large part in e-learning acceptance. Furthermore, the research findings showed that instructors are intrinsically driven by components like enjoyment of academic freedom, use of imagination and innovation to solve online teaching challenges, achieving job satisfaction, having access to training, resources, and infrastructure, achieving work-life balance, and self-improvement. The extant literature makes reference to proper innovation practices being vital for e-learning acceptance by instructors (Al-Hunaiyyan, Al-Sharhan and Alhajri, 2017), ensuring satisfaction by removing barriers for instructors (Luongo, 2018), appropriate instructor training (Meriem and Youssef, 2020), and provision of resources towards instructors (Hanif, Jamal and Ahmed, 2018). The integration of these intrinsic factors with the management of CSFs and barriers constitutes novel contributions to theory.

Furthermore, the research findings showed that instructors are extrinsically driven by components like receiving praise and appreciation by institutional management, having an appropriate amount of workload, receiving adequate administrative and technical support, the convenience of e-learning courses, job security, adequate remuneration, time release, and HEIs training the students to cope with e-learning courses. Mention of some of these extrinsic factors has been made in prior literature, like the cruciality of evaluating e-learning instructors' workloads (Harrison *et al.,* 2017), appreciation for instructors' competence (Ives and Walsh, 2021), flexibility and convenience of teaching e-learning classes (Cherry and Flora, 2017), and sufficient pay for increased workload (Cherry and Flora, 2017). The integration of these extrinsic factors with the management of CSFs and barriers constitutes novel contributions to theory.

Concluding, existing literature indicates that one of the most important factors influencing continuous commitment and therefore instructor acceptance, is their perception of e-learning quality (San-Martín *et al.,* 2020). The empirical research results have shown that one of the biggest concerns for instructors with e-learning is the quality it offers to students. As instructors' motivation and acceptance to use e-learning is largely perception-based, investment in improving human and social behavior to impact intention can drive up instructors' acceptance of e-learning concurrently with the changes in the human and social landscape (Olasina, 2019), by incorporating the management actions to address e-learning CSFs and barriers, being elucidated through the present Thesis.

5.2 Consclusion

In Chapter 5, the researcher presented and discussed the Themes comprising the data analysis of the present Thesis. By analyzing the primary data collection through categorization and development of the five themes, this chapter provided a complete exploration of the research questions of this study. The reliability of the findings was ensured by interpreting the results for each theme and triangulating them with current theory. Continuing, the primary research findings are summarized in Chapter 6, and the thesis's final framework is presented and explained.

CHAPTER 6 CONCLUSIONS AND FINAL FRAMEWORK DEVELOPMENT

6.0 Introduction

An extensive examination of the study's main findings was provided in the preceding chapter (Chapter 5). The important discoveries are presented in this chapter, and they are connected and thoroughly integrated into a framework which expands and contributes to theoretical knowledge. Regarding the research questions of this study, this chapter specifically summarizes and condenses the significant concluding findings and elaborates on the key pertinent themes and subthemes. The final conceptual framework is then developed in this chapter by incorporating the key findings from the primary data. Following a clarification of the study's theoretical and practical contributions, the research limitations are presented and recommended directions for further research are proposed.

6.1 Summary of the main findings enfolded with the RQs

This Thesis provides a theoretical examination and an empirical validation of the effect of institutional management actions to address e-learning CSFs and barriers, on instructor's acceptance of e-learning, in the context of Cyprus's higher education industry. This study, consequently, integrates the manners in which instructors perceive e-learning benefits and challenges, CSF enablers, barrier mitigators and associated management actions to address them, with the eventual acceptance of e-learning by instructors, in the contextual dimension of the Cyprus higher education industry. Through an analysis of the manners in which instructors perceive e-learning CSFs and barriers, the expected institutional actions to enable achievement of CSFs and mitigation of barriers, and by comprehending the subtleties of drivers for instructors' acceptance of e-learning (Choudhury and Pattnaik, 2020), new mechanisms can be found for ensuring motivation for acceptance and continuance commitment of instructors to e-learning. According to the current literature and the empirical results of this study, instructors perceive that e-learning creates both benefits and challenges, and these lead to associated CSFs and barriers. Related theory and research also suggest that effective institutional support in terms of addressing CSFs and barriers, create reinforcing intrinsic and extrinsic factors that drive up instructors' propensity to accept e-learning as a viable teaching method. The HE sector in Cyprus was the subject of primary qualitative research to evaluate this theoretically supported link. The study specifically addresses the research questions of the thesis, as described below, by gathering primary qualitative data through interviews and analyzing them.

6.1.1 Research question 1

The first RQ investigates instructor perceptions toward e-learning effectiveness and implementation, and their relationship with e-learning CSFs and barriers. This RQ is divided into two sub-RQs, as shown next:

RQ1: How do e-learning instructors perceive and evaluate factors for e-learning effectiveness and barriers to e-learning implementation?

RQ1a: How do e-learning instructors perceive and evaluate critical success factors for e-learning effectiveness?

RQ1b: How do e-learning instructors perceive and evaluate barriers to e-learning implementation?

Generally, the respondents discussed the benefits and challenges of e-learning, and the ways in which they relate to the effectiveness and implementation of this mode of course delivery. Consequently, the primary data identified a balanced number of advantages and disadvantages. Both the e-learning benefits and challenges comprised within instructors' views were upheld by various opinions that confirm the positives and negatives linked with instructor perceptions towards effectiveness and implementation of e-learning. Instructors generally associate benefits with an enjoyable teaching experience, flexibility, preparation of students for their professional lives, and customizability. Despite this, there is a consensus in respondents' answers, that e-learning cannot be considered as a replacement to the conventional method, thus indicating that an innovative approach is required to make it effective. Institutional efforts should be concentrated on obtaining the benefits provided by e-learning, rather than focusing on how it can replace conventional learning.

Specifically, the benefits of e-learning are mainly described as offering an enjoyable and useful experience, while also offering flexibility and helping to reach out to more students that would otherwise not have the chance to obtain HE. Further, the research revealed other benefits being technology helping students to study and prepare for their future lives, and e-learning offering the ability for customization and the creation of micro credentials in HE courses, which would be more valuable considering students' future attempts to find employment after graduation. Moreover, the participants described that these benefits enable them to appreciate e-learning more. Therefore, participants explained that, by teaching e-learning courses, they are able to

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enjoy the benefits of this mode of delivery and also offer these benefits to their students, not all of which are also included in the traditional courses. Similarly, participants described that in order to obtain these benefits, associated CSFs must be achieved with the support of HEI management, thus reinforcing the literature review findings. This association among e-learning and instructors' perceived benefits of e-learning effectiveness, was described and supported through the empirical insights provided by informants.

On the other hand, the negative aspects of e-learning are generally linked by instructors with themes like lower quality, stress and fatigue, lack of interactions with students and issues with the proper validations of student assignments. The perceived challenges are mainly associated with a lower level of quality in e-learning courses as compared to conventional ones, and this is in part due to reduced interactions between students and instructors, as well as the overwhelmingly varying levels and backgrounds of students attending e-learning courses. This has the effect of making e-learning feel more challenging for the instructors. The research revealed that according to instructors' perceptions, the true potential of e-learning in HE is currently quite underutilized by HEIs, and there is ample room for growth and improvement in terms of using e-learning to build capacity in HE. Unless these challenges are dealt with by institutions, instructors perceive that the true potential of HE in terms of capacity building would not be achieved with e-learning courses.

Specifically, the challenges of e-learning are mainly associated with technological stress for instructors and students, and less interaction with students as compared to conventional courses due to the asynchronous nature of e-learning. Results also revealed that teaching e-learning courses is demanding and tiring, and it is difficult to validate and assess student exams and assignments. Moreover, the research outlined that the presence of these challenges inhibits instructors from appreciating e-learning more. Therefore, participants explained that, to commit to teaching e-learning courses, they should receive management support to overcome the challenges. Similarly, the empirical findings showed that to combat these challenges, associated barriers must be mitigated with the support of HEI management, which is in line with the literature review findings. This association among e-learning and instructors' perceived challenges in implementation, was also described and supported through the empirical insights provided by informants. The final conceptual framework of the present research includes the following figure, which summarizes the significant findings in connection to the overarching RQ1.

Figure 6.1: E-learning benefits and challenges: construct from the final framework
(Source: Author's own)

Instructor perceptions to e-learning effectiveness and implementation	
E-learning Benefits	**E-learning Challenges**
Enjoyable and useful experience	Technological stress
Flexibility and wider student reach	Less interaction with students
Technology helps students in their future lives	Too demanding and tiring
Ability for customization and microcredentials	Difficult to validate student assessments

Concluding from this, the empirical findings of this investigation under the overarching RQ1 indicate that e-learning consists of both benefits and challenges (Figure 6.1), as perceived by instructors. Next, RQ1a aimed to ascertain how instructors perceive that the benefits and effectiveness of e-learning can be enabled by achievement of CSFs, and RQ1b how the challenges of e-learning can be addressed, by mitigating barriers to implementation.

Research question 1a

Overall, the results validated all CSFs included in the preliminary conceptual framework, and the informants outlined the positive effects of CSFs achievement on instructors' willingness to accept e-learning. Further, informants discussed how, in their view, the positive effects of e-learning CSFs can be enabled. This positive relationship was supported by the CSF enablers that informants suggested for HEI management to implement. Next, Figure 6.2 shapes the key results stemming from RQ1a, representing a construct of the Thesis' final conceptual framework.

Figure 6.2: CSFs enablers: construct from the final framework (Source: Author's own)

Research question 1b

Continuing, participants focused on the challenges of e-learning as well. Overall, the results validated most barriers included in the preliminary conceptual framework, and two new barriers emerged. The participants discussed the negative effects of not attending to the barriers, on instructors' willingness to accept e-learning. Further, informants discussed how, in their view, the negative effects of e-learning barriers can be reduced. This positive relationship was supported by the barrier mitigators that informants suggested for HEI management to implement. The following figure summarizes the main findings in relation to RQ1b, representing a construct of the Thesis' final conceptual framework.

Figure 6.3: Barrier mitigators: construct from the final framework (Source: Author's own)

Summing up, the empirical findings of this study under RQ1a,b show that benefits and challenges relating to e-learning effectiveness and implementation can be addressed by enabling the achievement of positive effects of CSFs and by mitigating the negative effects of barriers. The research results provided a plethora of CSF enablers and barrier mitigators which may be further explored in future research.

The results of RQ1, RQ1a and RQ1b, were analysed under Themes 1, 2, and 3 of the template analysis qualitative research methodology that was adopted by the researcher. The following figure shows the integration of these three themes, resultant from the exploration and analysis of RQ1 of this Thesis.

Figure 6.4: Integration of themes 1, 2 and 3: construct from the final framework (Source: Author's own)
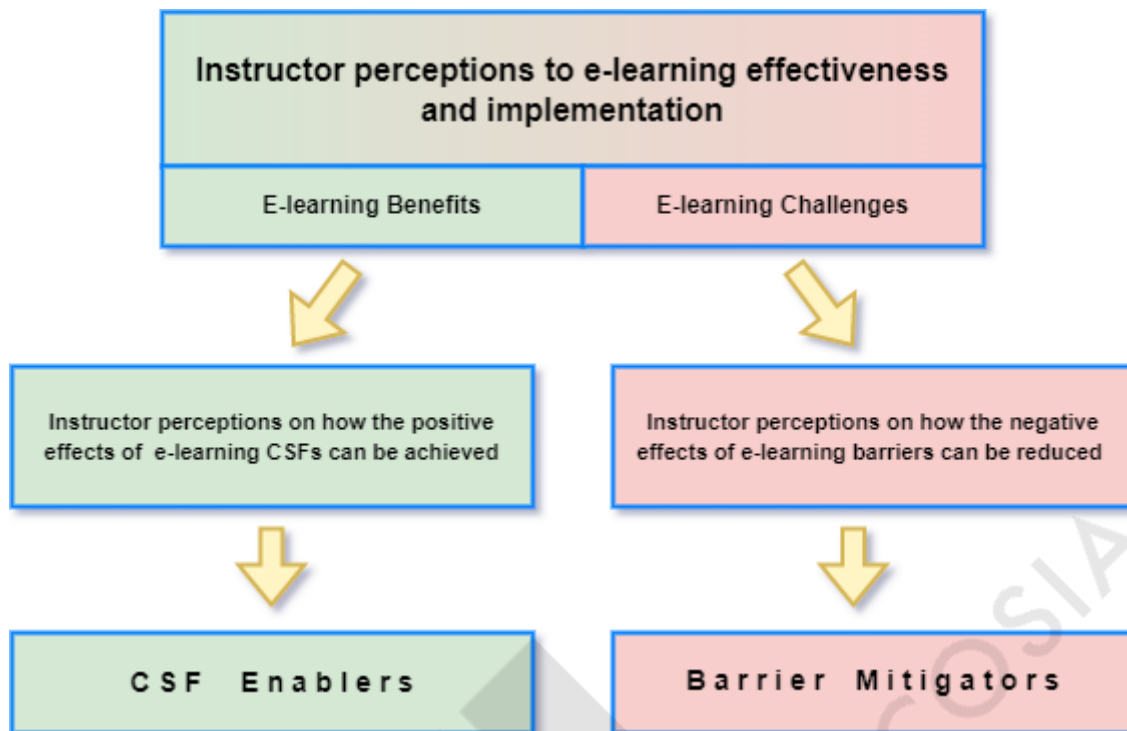
The integration of Themes 1, 2, and 3 clearly shows the perceptions of instructors toward the relationship between benefits of e-learning, CSFs to achieve them, and actions that enable their achievement of the CSFs, and resultantly the benefits of e-learning. The integration further shows the instructors' perceptions of the relationship between e-learning challenges, barriers that cause these challenges, and the associated mitigating actions that can be taken to reduce the barriers, and therefore manage the challenges of e-learning.

6.1.2 Research question 2

RQ2 of this Thesis explores and analyses the instructors' perceptions of institutional management actions that are being taken or should be taken at their HEIs to address effectiveness and implementation factors and barriers, assisted by two sub-questions, shown below.

RQ2: What do e-learning instructors think and feel about management actions taken towards e-learning effectiveness factors and barriers to implementation?

RQ2a: What do e-learning instructors think and feel about management actions taken towards achieving e-learning critical success factors?

RQ2b: What do e-learning instructors think and feel about management actions taken towards overcoming e-learning barriers?

Overall, most of the participants exhibited a positive stance toward the supporting management actions that they feel are being taken at their HEIs toward enabling the achievement of e-learning CSFs and mitigating the barriers. There are numerous arguments that espouse this link, by confirming the CSF enabling and barrier mitigating actions taken by HEI management, as reinforced by empirical data based on participants' personal experiences. The majority of participants discussed that institutional management support is very important both for enabling the CSFs to achieve e-learning's effectiveness and benefits, as well as for mitigating the barriers to reduce challenges of e-learning implementation. Both elements, if present, make instructors feel that they are receiving proper management support. Additionally, it was argued that if instructors feel they are supported by their HEI management, they would also feel better about teaching e-learning courses.

Research question 2a

Most of the respondents view institutional management actions to address e-learning CSFs positively, and respondents were also asked to share their views on what further actions they would like to see from their HEI. Specifically, the management actions to enable achievement of e-learning CSFs were perceived by instructors as provision of guidelines to instructors, supervision, assessment and feedback to instructors by management, as well as provision of flexibility and autonomy to instructors. Respondents also identified actions such as provision of tools and resources, training organized by management, provision of infrastructure and administrative and technical support. Finally, the result revealed that through their supporting actions to enable achievement of e-learning CSFs, management should be focusing primarily on the quality of e-learning and there should be provision of motives and benefits to instructors by management.

Research question 2b

Most of the respondents view institutional management actions to reduce e-learning barriers positively, and respondents were also asked to share their views on what further actions they

would like to see from their HEI. Specifically, the management actions to mitigate barriers to e-learning implementation were perceived by instructors as alleviation of instructors' workload, provision of administrative support, resources, technical support and technology and other trainings for instructors, by management. Results indicated that instructors value responsiveness and promptness by management in dealing with instructors' issues, and provision of infrastructure and adequate invigilation tools by management, to properly address the e-learning barriers instructors are facing.

The following figure summarizes the main findings in relation to RQ2, and it forms a part of the final conceptual framework of the present Thesis.

Figure 6.5: Management actions to achieve CSFs and reduce barriers: construct from the final framework (Source: Author's own)

RQ2 was examined through Theme 4 of the final template used for the qualitative analysis.

6.1.3 Research question 3

Finally, RQ3 of this study inspects the combined resultant effect of institutional management actions to address e-learning CSFs and barriers, on instructors' acceptance of e-learning. Essentially, this RQ links HEI behaviors with significant organizational impacts, gauging the

level of instructors' motivation and willingness to accept and continually commit to e-learning as a viable mode of HE course delivery.

RQ3: How do management actions taken to achieve e-learning effectiveness factors and to overcome barriers to implementation, influence instructors' acceptance of e-learning?

The study's primary results have a substantial impact on the body of literature since they highlight the significance of an indirect process by which HE management support influences instructors' motivation to accept e-learning, through enabling achievement of positive effects of e-learning CSFs and mitigation of negative effects of e-learning barriers. Most of the respondents have indicated that their acceptance of e-learning would be influenced by appropriate institutional management actions to reinforce the achievement of CSFs and reduction of barriers. Attempting to rationalize this relationship, most informants suggested that supporting management actions from their institutions lead to an increased motivation on their part to engage in and continually commit to teaching e-learning courses. Besides, the majority of participants agreed that lack of management support leads not to outright refusal to accept teaching e-learning courses, but to not putting in so much effort as compared to when strong management support is being received.

In accordance with this research's primary results, the relationship between supporting management actions and instructors' acceptance of e-learning is mediated by both intrinsic and extrinsic factors. Empirical research results revealed that the way the organization affects instructors' acceptance of e-learning is two-fold. Firstly, since respondents acknowledged that instructors should have the appropriate internal motives, the institutional management should ensure that they have ways to foster these internal motivation drivers. Secondly, the HEI is expected to provide the means for instructors, by which external factors affecting the acceptance level of an instructor would not be negatively affected, thus leading to demotivation for acceptance.

The research sheds light on how intrinsic factors for instructor acceptance of e-learning can be fostered through appropriate institutional management actions. This is related to achievement of CSFs and to benefits of an effective e-learning process. HEIs should provide adequate support to address the CSFs that instructors view as important to allow them to develop their

intrinsic motives, which reinforce their motivation for e-learning acceptance. The following figure summarizes the main findings in relation to intrinsic factors crystalizing through answering RQ3, and it formulates one of the constructs of this Thesis' final conceptual framework.

Figure 6.6: Intrinsic factors of instructor e-learning acceptance: construct from the final framework (Source: Author's own)

Intrinsic factors that reinforce motivation for acceptance	
Character and internal motives	Achieving job satisfaction
Enjoying academic freedom	Having access to training, resources and infrastructure
Using imagination and innovation to solve online teaching challenges	Maintaining work-life balance
	Achieving self-improvement

The research also sheds light on how extrinsic factors for instructor acceptance of e-learning can be fostered through appropriate institutional management actions. This is related to mitigation of e-learning barriers and to challenges of improper e-learning implementation. HEIs should provide adequate support to mitigate the barriers that instructors are facing to allow them to develop their extrinsic motives, which reduce demotivation for acceptance of e-learning. The following figure summarizes the main findings in relation to extrinsic factors crystalizing through answering RQ3, and it represents the last construct of this Thesis' final conceptual framework.

Figure 6.7: Extrinsic factors of instructor e-learning acceptance: construct from the final framework (Source: Author's own)

Extrinsic factors that reduce demotivation for acceptance	
Receiving praise and appreciation by management	Receiving adequate administrative and technical support
Having an appropriate amount of workload	
Utilizing convenience of e-learning courses	Having job security
	Receiving adequate remuneration
Having time release	E-learning training to students

Moreover, all interviewees mentioned that proper management support actions lead to higher e-learning acceptance of instructors. In essence, these positive management actions are linked to specific instructor behaviors that benefit the HEI. These behaviors mostly result in

instructors willingly accepting to teach online courses and to make a conscious effort to continually commit themselves to the process. Instructor acceptance was examined through the final Theme 5 used in the template analysis.

The results of RQ2, RQ2a RQ2b, and RQ3 were analyzed under Themes 4 and 5 of the final template that was adopted by the researcher. The following figure shows the integration of these two themes, resultant from the exploration and analysis of RQ2 and RQ3, forming a part of the final conceptual framework of this Thesis.

Figure 6.8: Integration of themes 4 and 5: construct from the final framework (Source: Author's own)
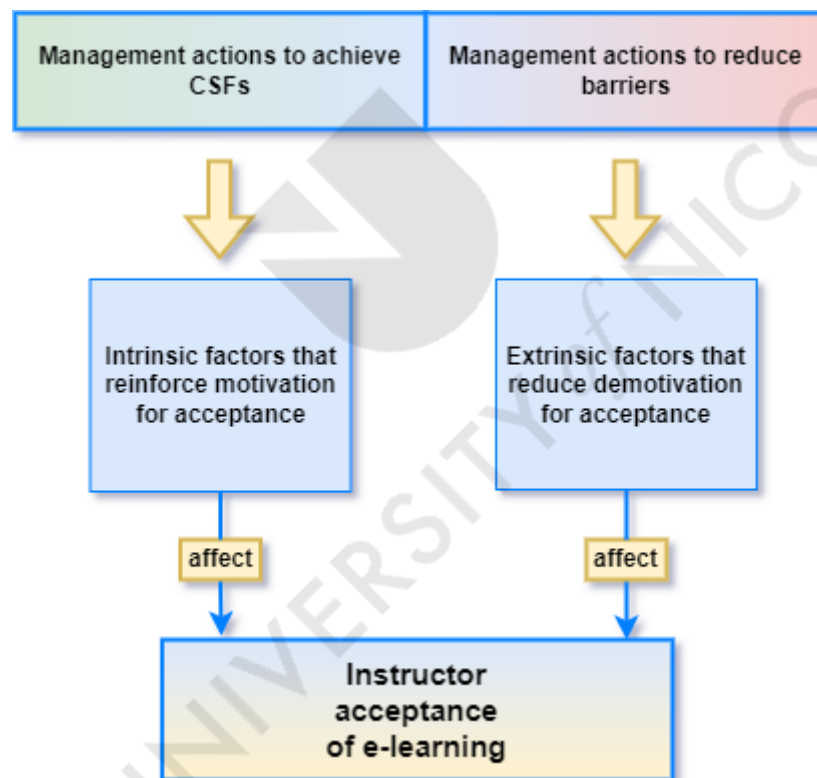
6.2 The final conceptual framework development

The research's findings indicate that it makes significant advances to already accepted theories. The researcher expounds on how the study results have addressed the gaps found throughout Chapter 2 Literature review, and during the course of the Thesis overall. The literature review indicates that there are not sufficient studies in the topic of instructor perceptions toward e-

learning effectiveness and implementation, and that the emphasis is mainly placed on students´ perceptions (Kumar *et al.,* 2019). Thus, this research furthers theoretical investigation into HE e-learning effectiveness and implementation by focusing on the instructors´ perspective, while attempting to enrich the theoretical knowledge of how understanding instructors' perceptions of e-learning CSFs and barriers, can be used to positively affect their willingness to accept e-learning as a viable mode of course delivery in HE.

The researcher innovatively uses an integrated framework of instructor perceptions for both CSFs and barriers of e-learning so as to demonstrate the widely accepted methods of effectively managing the positive effects of CSFs and the negative effects of barriers. The researcher, as a critical realist, addresses CSFs and barriers through a deductive logic, and attempts to obtain instructors' views on these preliminary factors, preexisting in literature. The researcher approaches inductively the exploration of the ways in which proper management support of these would affect instructors' willingness and motivation to accept e-learning. Thus, the final framework that was constructed mirrors the anticipations and impressions of e-learning instructors in HE, a strategy that assures effective management of CSFs and barriers, and the positive reinforcement of instructors' propensity to accept e-learning.

This study has examined the effect of instructor perceptions toward management support actions on instructors' propensity to accept e-learning, through instructor intrinsic and extrinsic motivation. Therefore, the intrinsic and extrinsic factors of instructor motivation resulting from supporting management actions, were factored in and investigated as connecting factors that facilitate instructor e-learning acceptance and lead to continuance commitment of instructors to the e-learning system. In an attempt to examine how instructors perceive e-learning CSFs and barriers and relevant HEI management actions to address them, it was identified that proper supportive management actions in this regard, affect positively instructors' acceptance of e-learning.

Also, taking into account the study's main findings, most respondents shared that two significant elements are influencing the relationship between supporting management actions and instructors' acceptance, under examination. These two elements are the intrinsic and extrinsic instructor motivators of e-learning arising from HEI management actions. Particularly as concerned with the intrinsic factors, the research revealed that instructors associate these with character and internal motives, enjoying academic freedom, use of imagination and

innovation to solve online teaching challenges, achieving job satisfaction, having access to training, resources and infrastructure, maintaining work-life balance and achieving self-improvement. Extrinsic factors that mediate the relationship between supportive management actions and instructor acceptance of e-learning are associated with receiving praise and appreciation by institutional management, having an appropriate amount of workload, receiving adequate administrative and technical support, the convenience of e-learning courses, job security, adequate remuneration, receiving time release, and teaching students who are well-trained on how to use the e-learning system.

The present Thesis' conceptual framework is presented and explained below, and this relationship, along with the elements influencing it, is further addressed.

Final Conceptual Framework Development

The initial conceptual framework presented in Chapter 2 was processed, improved, and finished in light of the empirical results as well as the main conclusions drawn from critically analyzing the narrative and systematic literature review. The final conceptual framework is presented in Figure 6.9 below.

Figure 6.9: Final conceptual framework (Source: Author's own)

Instructor perceptions to e-learning effectiveness and implementation

E-learning Benefits	E-learning Challenges
Enjoyable and useful experience	Technological stress
Flexibility and wider student reach	Less interaction with students
Technology helps students in their future lives	Too demanding and tiring
Ability for customization and microcredentials	Difficult to validate student assessments

Instructor perceptions on how the positive effects of e-learning CSFs can be achieved

CSF Enablers

Learning quality and environment
- VLE functionality
- Platform reliability
- Organization of tools
- Group assignments and forum

Support and training conditions
- Regular training updates
- Practical and hands-on
- Differentiated and needs-based
- Provide support for self-training

Instructional design
- Create an expert team
- Communication with experts
- Course design flexibility
- Transparent design process

Perceived usefulness/ease of use
- Simplicity and functionality
- Learn by practicing

Technology infrastructure
- Invest in technological innovations
- Embed digital tools and devices
- Flexible support for large groups
- Centralized knowledge-sharing

Instructor characteristics
- Develop pedagogical skills
- Being flexible and present
- Appropriate teaching philosophy
- Technological literacy
- Willingness and motivation

Student characteristics
- Screening of student applications
- Create an online community
- Offer digital tools and trainings

Course content
- Accreditation regulations
- Focused on student needs
- Appropriate study materials
- Examine outsourcing solutions

Ease of system access
- Provide accessibility
- Availability on different devices

Social factors and interaction
- Enable exchange of ideas
- Assign online group work
- Integrate technological tools
- Clear communication

Management actions to achieve CSFs

- Provision of guidelines
- Supervision, assessment and feedback
- Provision of flexibility and autonomy
- Provision of tools and resources
- Provision of training organized by management
- Provision of infrastructure
- Provision of administrative and technical support
- Management focusing on the quality of e-learning
- Provision of motives and benefits to instructors

Management actions to reduce barriers

- Alleviation of instructors' workload
- Provision of administrative support
- Provision of resources
- Provision of technical support
- Provision of technology and other trainings for instructors
- Responsiveness and promptness by management in dealing with instructors' issues
- Provision of invigilation tools by management
- Provision of infrastructure

Instructor perceptions on how the negative effects of e-learning barriers can be reduced

Barrier Mitigators

Limited HEI resources
- Realize financial potential
- Prepare financial plan
- Proper channeling of budget
- Invest in human resources

Lack of administrative support
- Create organizational chart
- Improve communication between administrative departments

Lack of technical support
- Ensure basic IT competencies
- Hire sufficient IT staff
- Optimize bandwidth

Lack of student motivation, participation and engagement
- Access to interactive materials and tools
- Assess student needs
- Small study groups

Lack of personal interaction
- Synchronous interaction
- Foster discussion
- Establish course interactivity
- Arrange social sessions
- Keep cameras switched on

Lack of instructor IT competencies
- Assess technological literacy
- Reduce technology-related stress

Increased workload
- Streamline course set-up
- Hire teaching assistants
- Reduce administrative workload

Resistance to change
- Encourage voluntary participation
- Cultivate open-minded instructors
- Outline benefits of e-learning
- Reinforce initial course support

Lack of proper student assessment
- Improve assessment methods
- Proper invigilation
- Detect plagiarism and commissions

Non-compliance with accreditation criteria
- Ensure compliance with regulations
- Provide guidance to instructors
- Maintain academic freedom

Positive instructor perception

Intrinsic factors that reinforce motivation for acceptance

| Character and internal motives | Achieving job satisfaction |
Enjoying academic freedom	Having access to training, resources and infrastructure
Using imagination and innovation to solve online teaching challenges	Maintaining work-life balance
	Achieving self-improvement

Extrinsic factors that reduce demotivation for acceptance

Receiving praise and appreciation by management	Receiving adequate administrative and technical support
Having an appropriate amount of workload	Having job security
Utilizing convenience of e-learning courses	Receiving adequate remuneration
Having time release	E-learning training to students

affect → **Instructor acceptance of e-learning** ← affect

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After undergoing empirical validation, the final conceptual framework of this Thesis shows that instructors associate the notions of e-learning effectiveness and implementation with a range of benefits and challenges. When instructors consider what effective e-learning is, they associate this with the means of obtaining the benefits of the process, which are offering an enjoyable and useful experience, while also offering flexibility and helping to reach out to more students that would otherwise not have the chance to obtain HE. Further, the research revealed other benefits being technology helping students to study and prepare for their future lives, and e-learning offering the ability for customization and the creation of micro credentials in HE courses, which would be more valuable considering students' future attempts to find employment after graduation. The research revealed that instructors most often associate effectiveness with the concept of e-learning quality. When instructors consider implementation issues, they relate them to the challenges of e-learning. The perceived challenges are mainly linked with a lower level of quality in e-learning courses as compared to conventional ones, and this is in part due to reduced interactions between students and instructors, as well as the overwhelmingly varying levels and backgrounds of students attending e-learning courses.

The empirically validated final framework revealed that instructors perceive that achievement of CSFs is integral to obtaining the benefits of e-learning. The CSF dimensions which were validated by the framework in this respect are: learning quality and environment, proper support and training conditions for instructors, instructional design, viewing the e-learning system as useful and easy to use, technology infrastructure, the characteristics of the instructor and student, the course content, the ease of system access, and social factors and interactions. Through the final framework, it was also revealed that instructors perceive the mitigation of barriers to e-learning implementation as integral to reducing the challenges that e-learning presents. The following barriers were empirically validated through this study: limited HEI resources, lack of administrative and technical support, lack of student motivation, participation and engagement, lack of personal interaction between instructors and students, lack of instructor IT competencies, increased workload, resistance to change, lack of proper student assessment, and non-compliance with accreditation criteria. The insights of the research shed light on the CSF enabling actions, and the barrier mitigating actions suggested by instructors, which can be used as a basis for HEI management in ensuring that the supporting actions they provide to instructors, are in line with their perceptions and expectations.

This positive relationship between CSFs and benefits is a strong indicator concerning the management actions HEIs should be aiming at. Similarly, the positive relationship between barriers and challenges, serves the same purpose.

The empirically validated final framework revealed the expected management actions that should be associated with enabling achievement of CSFs and mitigation of barriers. Specifically, instructors expect that management actions would be effective if on one hand they address the CSFs and benefits of e-learning, and on the other hand they also address the barriers and challenges of e-learning. The management actions that aim to achieve e-learning CSFs are identified by instructors as provision of tools and resources, training organized by management, provision of infrastructure and administrative and technical support. Finally, the result revealed that through their supporting actions to enable achievement of e-learning CSFs, management should be focusing primarily on the quality of e-learning and there should be provision of motives and benefits to instructors by management. The management actions that aim to reduce e-learning barriers according to instructors are alleviation of instructors' workload, provision of administrative support, resources, technical support and technology and other trainings for instructors, by management. Results indicated that instructors value responsiveness and promptness by management in dealing with instructors' issues, and provision of infrastructure and adequate invigilation tools by management, to properly address the e-learning barriers instructors are facing.

The final framework reveals that a positive perception of instructors towards these management actions would reinforce their acceptance of e-learning in HE. According to the research results of this study, the relationship between supporting management actions and instructors' acceptance of e-learning is mediated by both intrinsic and extrinsic factors. Therefore, the eventual acceptance and continuous commitment to e-learning by instructors, is dependent on and influenced by the management actions to achieve CSFs and remove barriers, with this relationship being mediated by both intrinsic and extrinsic factors of instructor motivation for acceptance. The intrinsic factors that mediate this relationship are character and internal motives, being able to enjoy academic freedom, use of imagination and innovation to solve online teaching challenges, achieving job satisfaction, having access to training, resources and infrastructure, achieving work-life balance and self-improvement. Extrinsic factors that mediate the relationship between supportive management actions and instructor acceptance of e-learning are associated with receiving praise and appreciation by institutional management,

having an appropriate amount of workload, receiving adequate administrative and technical support, the convenience of e-learning courses, job security, receiving adequate remuneration, and time release, and teaching students who are well-trained on how to use the e-learning system. Both sets of factors should be fostered by HEI management as part of the supporting actions they provide, towards reinforcing the instructors' acceptance to use the e-learning system at their HEIs.

In total, it is concluded that HEI management actions to achieve e-learning CSFs and mitigate e-learning barriers affects positively the instructors' acceptance to teach e-learning courses and continually commit to this mode of delivery. This is due to the achievement of CSFs, and reduction of barriers, which are positively connected with instructors perceptions of e-learning benefits and challenges, and if HEI management actions are seen by instructors as being supportive of these, this will lead to acceptance of using the e-learning system.The research has revealed that non-achievement of these, will not lead to outright rejection of e-learning by instructors, but would affect their motivation and effort they put into the process. Informants' qualitative replies indicate that this process is dependent on the perceived quality of the e-learning process. This is because if instructors perceive that the quality of the e-learning teaching, as compared to the conventional one, is a lot lower they would not exhibit high propensity to accept e-learning as an equally viable method of course delivery in HE. Further, regarding the positive view toward e-learning, informants stated that this is affected by both intrinsically and extrinsically motivated factors. If instructors readily accept the e-learning system their institutions are using, they will exhibit desirable behavior in terms of putting in a lot more effort themselves to improve the quality of their online courses. Consequently, the mechanism that leads to positive e-learning acceptance by instructors, is majorly influenced by these two significant sets of factors.

By evaluating the impact of proper supportive management actions on instructor acceptance of e-learning systems in HE, this framework emphasizes on the evocative significance of considering the views of this very significant stakeholder on e-learning effectiveness, implementation, barriers and challenges, while utilizing these views to mold proper management actions which leads to instructor motivation and positive e-learning acceptance. The theoretical contributions gained from this framework can be applied to help HEIs to attain instructor acceptance and appreciation of the e-learning process and practitioners to redefine and redesign e-learning instructor motivation strategies. The theoretical, methodological, and

practical contributions of this Thesis are covered in detail in the following three sections of this chapter.

6.3 Contribution to literature and extant theory

The Thesis' primary results bring innovative knowledge and substantially advance existing theories. By providing answers and explanations, this part covers relatively recent literature gaps and refines and examines new information which the experimentally tested framework contributes to associated fields and the phenomena of the research. It clarifies the contribution to the HE industry in the first step. It subsequently builds on its contribution to the three theoretical domains under investigation (e-learning effectiveness and implementation, HEI management actions to address effectiveness CSFs and implementation barriers, and instructor acceptance of e-learning). It then highlights the theoretical contribution of this thesis on the inspiration of instructors in HE. This part concludes by describing this thesis' methodological contribution to the qualitative research approach.

First off, the particular study has added to what is already known about the relevant area, which is the HE sector. As deliberated in Chapter 2 Literature Review, e-learning in the HE industry could benefit from further empirical analysis of the perceptions of instructors that teach e-learning courses in HE (Kumar *et al.,* 2019). The literature review showed that additional areas in need of further empirical investigation are e-learning effectiveness and CSFs (Graham, 2018; Miranda *et al.,* 2017; Naveed and Ahmad, 2019; Van Wart *et al.,* 2020), e-learning implementation barriers (Ahmad *et al.,* 2018; Ali, Uppal and Gulliver, 2018; Almas, Machumu and Zhu, 2021; Msomi and Hoque, 2018; Atim *et al.,* 2021), and management actions and processes required to support instructors (Ives and Walsh, 2021; Al-Jedaiah, 2020; Al-Karaki *et al.,* 2021; Bryan, Leeds and Wiley, 2018; Singh and Hardaker, 2017). Moreover, extant literature calls for further research on instructors' acceptance of e-learning (Barclay, Donalds and Osei-Bryson, 2018; Choudhury and Pattnaik, 2020; Chavoshi and Hamidi, 2019). This study focuses on e-learning in the HE industry, to address the identified literature gaps.

It should be considered that instructors' acceptance of e-learning is considered a major factor affected by both the effectiveness and implementation of e-learning in HE (Kordrostami and Seitz, 2021), consequently, studies revolving around this topic are very important for improving e-learning's quality and therefore the student experience. The present research work

has shown a means in this regard through which HEIs can gauge instructors' acceptance of the e-learning system to further enhance the quality, image and reputation of their online courses, since as stated by da Costa and Pelissari (2017) , the HEI image is associated most strongly with e-learning quality.

The theoretical contributions of this Thesis extend to two e-learning management-focused areas, mainly the management of CSFs for effectiveness and management of barriers to implementation in the HE industry. Further theoretical contributions are achieved in a human resource management-oriented area, which is instructor behaviour, further broken down into perceptions, motivation, and acceptance. Hence, revised correlations between critical affecting characteristics with significant implications for human resource management have been established in this study's final framework, for instructor motivation and acceptance of e-learning, and essential e-learning management HEI outcomes, such as achievement of e-learning CSFs and reduction of e-learning barriers, thus leading to improved quality courses and better student perception. The final framework pinpoints novel ideas and areas of theoretical interest that lay the foundation for future studies in e-learning management.

Initially, the present study enriches knowledge of instructor perceptions to achievement of CSFs for effectiveness in HE. This contribution is significant since numerous scholars have emphasized the need for additional empirical study on how instructors view CSFs and how this might improve the business context of e-learning in HE (Alhabeeb and Rowley, 2018; Miranda *et al.,* 2017; Graham, 2018; Naveed and Ahmad, 2019; Van Wart *et al.,* 2020). Second, the final framework communicates insights into the theoretical areas of instructor perception and management of e-learning barriers in the HE setting (Ahmad *et al.,* 2018; Uppal, Ali and Gulliver, 2018; Almas, Machumu and Zhu, 2021; Msomi and Hoque, 2018). It identifies the way instructors perceive and evaluate e-learning CSFs and barriers to implementation in the context of the Cyprus HE sector. Prior research on the topic mostly concentrated on examining student perceptions. Nevertheless, recent literature calls for additional studies on evaluating the perceptions of instructors in more depth, since they are key stakeholders in the e-learning process (Alhabeeb and Rowley, 2018; Ahmad *et al.,* 2018; Kumar *et al.,* 2019; San-Martín *et al.,* 2020). This theoretical need is clarified by the research's findings, which identify the barriers and challenges instructors relate to e-learning in HE, accompanied by empirical results on their perceptions of how CSFs and barriers can be addressed. Hence, this study makes a theoretical contribution to the topic of obtaining a stronger understanding of the views of this

key stakeholder group. Third, to satisfy gaps in comprehending the instructors' perceptions of supporting management actions to address these issues (Al-Jedaiah, 2020; Al-Karaki *et al.,* 2021; Bryan, Leeds and Wiley, 2018; Singh and Hardaker, 2017), this Thesis extends research in institutional management actions to enable the achievement of the positive effects of e-learning's CSFs and mitigate the negative effects of e-learning barriers to implementation. This framework, therefore, explains the ways in which HEIs could offer supporting management actions, to synthesize novel methods and strategies that will enable HEIs to focus their efforts on resolving e-learning effectiveness and implementation issues, while considering the instructors' perspectives. Fourth, from the human resource management perspective, this study contributes to the research on how instructors' motivation and propensity for e-learning acceptance can be influenced by HEI management and reduce the level of resistance to adopt e-learning courses, and to strengthen the quality of teaching in e-learning courses, which is perceived as very important by both instructors and students, and is linked to the global image that a HEI has.

Finally, from the management of e-learning perspective, this empirical investigation supports the exploration of instructors' role in the quality of e-learning and the global image of the HEI. Specifically, it adds knowledge to this theoretical field which according to existing literature needs further research, and provides knowledge into the role of instructors' perceptions that offer an insight on how these issues can be tackled, through the prism of enabling the achievement of CSFs and mitigating barriers for implementation. This helps to fill in gaps in the body of knowledge on the subject (Alhabeeb and Rowley, 2018; Ahmad *et al.,* 2018; Kumar *et al.,* 2019; San-Martín *et al.,* 2020), as previous scholarly work has examined instructors' general perceptions to CSFs and barriers, without integrating them into an encompassing study, while also ascertaining how proper management actions in this regard may influence the motivation and acceptance of e-learning concerning this important stakeholder group.

6.4 Contributions to methodology

The methodological approaches to the study area are also improved by this research work. The abductive research approach within the HE e-learning management domain is strengthened by this research. This promotes heightened levels of theoretical awareness by giving both theory and empirical data equal weight, while examining qualitatively the in-depth perceptions of e-

learning instructors, as advised by scholars in recent literature (Alhabeeb and Rowley, 2018; Cherry and Flora, 2017).

Although several studies have focused on the viewpoints of e-learning stakeholders by addressing varying perceptions by adopting a quantitative method, fewer research investigations have engaged in a thorough qualitative analysis of these perceptions toward the theoretical areas covered by the present Thesis, instead focusing mainly on general perceptions, without attributing the reasoning for the differences in stakeholder perceptions. As Alhabeeb and Rowley (2017) suggested, person-to-person qualitative data collection methods help to gather important and rich information that will illuminate or open new conceptual grounds, by understanding the reasons for these varying perspectives. In order to get insights into relationships and elements that aid in explaining the perceptions of the instructor stakeholder group, this study used a qualitative research approach that included in-depth interviews and direct contact with respondents.

6.5 Contribution to practice

The ways in which this work contributes practically are emphasized and explained in this section. Many HE faculty members now spend a significant portion of their time teaching online courses, and HEIs must be prepared to respond to this new situation and its potential effects on the broader HE sector. So, from a practical standpoint, this study offers recommendations to institutional management on how to handle the instructor motivation and acceptance of e-learning as a viable mode of course delivery, by truly appreciating its quality and contribution toward providing students with a valuable and positive learning experience. Specifically, examining instructors' perceptions towards e-learning CSFs and barriers, and the suggested actions for HEI management to address them, aids organizations in understanding the connections and pertinent links that will help them redefine their HRM strategies concerning faculty that teach online courses, for achieving institutional goals both internally and externallly (Ali, Uppal and Gulliver, 2018; Patterson, 2018; Chin *et al.,* 2020; Barclay, Donalds and Osei-Bryson, 2018; Lee, Song and Hong, 2019; Alhabeeb and Rowley, 2017).

The management and administrative teams of e-learning are encouraged to adopt the findings of this study in order to obtain favorable internal organizational benefits. According to other studies, if a HEI is successful in addressing the CSFs and obstacles to e-learning, the potential

advantages are vast, like having better equipped instructors who are able to deal with the implications of this mode of course delivery (Ives and Walsh, 2021), and higher levels of instructor commitment and satisfaction (Kirkova-Bogdanova, 2021). According to the results of this study, through addressing instructors' perceptions toward e-learning effectiveness and implementation, HEIs can have more targeted plans and strategies for e-learning courses. Therefore, through adopting the proper management actions, instructors' perceptions towards e-learning can be greatly improved (Kumar *et al.,* 2019; Cherry and Flora, 2017). Consequently, as this addresses human and social factors in e-learning, a major contribution of the present research is that instructors' positive views toward e-learning in HE may be viewed as a management tool that helps to solidify instructor bonds with their institution. This is resultant from the primary study data, since when instructors perceive that their organization is expending significant effort to improving the quality of e-learning courses, they are also more willing and motivated to spend extra effort in this regard, they feel that the quality of e-learning courses their institution offers is higher, and they therefore feel more satisfied in their role. Using instructors' perceptions of the quality of e-learning is crucial for practitioners and organizations alike.

More specifically, HEIs should support instructors' intrinsic and extrinsic drivers for acceptance of e-learning by appropriate institutional management actions. For example, intrinsic factors such as achieving self-improvement and job satisfaction can be reinforced by HEI management providing targeted training sessions to instructors, as indicated by the empirical study and also supported by the extant literature. HEI management should also support instructors' work-life balance by regulating the workload appropriately. Intrinsic factors such as use of imagination and innovation to solve online teaching challenges, can be supported by HE institutions providing the proper resources, infrastructure and guidelines to instructors, whereas the ability of instructors to enjoy academic freedom should also be supported by the institutions policies and regulations, safeguarding this privilege of being part of an academic community. Extrinsic factors for motivation and acceptance such as receiving praise and appreciation by institutional management, could be reinforced by HEIs through evaluation and assessment procedures adopted at the organization, whereas the convenience of e-learning courses could be further supplemented by offering instructors with flexible teaching arrangements, allowing them to conduct their courses remotely. Other extrinsic factors influencing instructors such as job security, receiving adequate remuneration, and time release,

can be addressed by HEIs operating a robust human resources department that effectively addresses the needs of employees.

In relation to this, effective e-learning implementation must not be seen only as an educational tool that addresses the needs of the students but also, as the findings of this study imply, as a tool for engaging instructors whose emotional and social needs throughout the teaching process are met. Therefore, HEIs are implored to manage their instructors' acceptance and continuance commitment to e-learning in different ways by encouraging and enabling instructors to cultivate their intrinsic and extrinsic drivers toward e-learning acceptance. Appropriate HE management methodologies can be adopted that meet the specific needs. Moreover, instructors' motivators need to be fostered to accept and commit to teaching e-learning courses effectively. Targeted training created and conducted by managers, organizations, HR professionals, and e-learning experts might therefore be helpful for instructors to obtain skills and expertise on specific e-learning components, in technical, social, and pedagogical areas. This Thesis' final framework has indicated that internal benefits of addressing instructors' perceptions to e-learning effectiveness and implementation, lead to positive effects in terms of acceptance and continuance commitment of e-learning by instructors.

This framework's final but crucial contribution—the external organizational advantages which would result from instructors' acceptance and continuous commitment to teaching e-learning courses —is discussed below. Practically examining the empirical results of this research, leads to the conclusion that addressing instructors' perspectives may lead to significant improvements in the quality of e-learning courses, and this is vital since from the instructors' viewpoint, the quality of the e-learning system is deemed to remain the most significant factor influencing both the organizational impact and, to a lesser degree, the dedication to continuance commitment (San-Martín *et al.,* 2020). This is an important promotional tool for a HEI, since it has been established by Da Costa and Pelissari (2017) that e-learning quality is associated with the perception of HEI corporate image, from the viewpoint of e-learning students. The determinants of HEIs' corporate global image are multidimensional; however it has been shown that the image is associated most strongly with e-learning quality (da Costa and Pelissari, 2017). Today's e-learning managers and HEIs must recognize this as a unique marketing-related instructor mindset. The primary research findings of this study can essentially assist organizations, e-learning experts, and managers in creating e-learning instructor support and training initiatives that will assist them with enhancing not only their e-

learning teaching abilities but also how to enhance the quality of the e-learning process, and consequently, how to enhance the reputation of the HEI globally. In general, they can inform e-learning teaching staff about corporate awareness initiatives and how they help HEIs build their reputations.

6.6 Limitations of the study

Upon presenting the essential contributions of the present doctoral dissertation to both theory and practice, the researcher explains the limitations of the study, which are mostly characteristic of its qualitative research approach.

First off, because this study used a qualitative research methodology, associated biases might be present. This is mostly due to the fact that no quantitative method was used and that using only qualitative methods makes it impossible to generalize the findings. Yet, one of the key goals of this research is not generalizability. The qualitative approach was used for a number of reasons, as was stated in this thesis's gap section and Chapter 3 Research Methodology. One of the key goals was to close a gap in the methodological framework of earlier investigations on e-learning effectiveness, implementation, acceptance and associated instructor perspectives. Further qualitative studies in this field are required, according to several academics, for a more thorough investigation of the topic and to explain more linkages and mechanisms regarding the phenomena of instructor views and acceptance of e-learning in higher education (Cherry and Flora, 2017; Alhabeeb and Rowley, 2018; Daniela *et al.,* 2018; Almas, Machumu and Zhu, 2021; Kordrostami and Seitz, 2021). Lastly, by thoroughly presenting and characterizing the core data, the difficulties of interpreting qualitative data were overcome. This Thesis contains many verbatim quotes from interviews in order to provide a comprehensive overview using a thorough and in-depth thematic analysis methodology.

Also, only one qualitative technique—in-depth semi-structured interview—was used to collect data. As data are better validated and triangulated using mixed methods approaches, the use of a mono-method could also be criticized and seen as a drawback. However, this constraint is overcome by the fact that participants were given the chance to comment on their feelings and opinions during in-depth, semi-structured interviews. There was also room for discussion and deeper explanation of particular ideas relating to the field of e-learning in HE. As a result, the method of acquiring data used in this methodology is said to be adaptable, allowing study

participants to express themselves more freely and honestly. Last but not least, a single-method approach might provide novel and crucial information that other approaches could not (Ryan, 2018).

A limitation of this study might potentially be its purposively chosen sample. This is due to the participants in this study being chosen based on a set of criteria, and consequently the sample used in this study is purposive. Precisely, the selected sample included HE instructors who are PhD holders, full-time faculty in a Cypriot university, and have at least three years' experience in teaching online courses. Participants were employed at the six largest universities in Cyprus in terms of distance learning student enrolments and provision of e-learning courses. However, sample restrictions might be justified because qualitative research presupposes that the investigator can select examples that are rich in information and context by obtaining data from informants who are very knowledgeable and possess a great level of expertise in the topic of examination (Le, Janssen and Wubbels, 2018). Also, because this study focused on full-time faculty members' impressions of e-learning, part-timers were not included. The difference in perceptions between full-time and part-time instructors can be used to explain this. Purposive sampling thus has advantages that outweigh the drawbacks stated above. The researcher was able to satisfactorily respond to the study's research questions owing to the significant teaching experience that all the participants possessed in the subject area.

The small number of informants who took part in this study is another research drawback that could be criticized. In particular, there were a total of 20 interviews. The generalizability of the results is not crucial in qualitative studies, hence a small sample size is expected. However, Graebner's (2007) recommendation that the amount of interviews be predicated on obtaining a theoretical saturation of findings also addresses this limitation. It is possible to get over the aforementioned methodological restrictions by conducting more research. Similar to this, further exploration into new connections and underlying mechanisms related to the study's premise may yield results that are more current on the topic at hand. Section 6.7 Avenues for future research, presents and discusses these.

6.7 Discussion of the potential impact of the COVID period on the documented aspects of instructor acceptance of e-learning

The potential impact of the COVID period on the documented aspects of instructor acceptance of e-learning might be considered as a further drawback of the present Thesis. This research project originated prior to the COVID-19 pandemic, which fundamentally reshaped higher education's landscape, particularly e-learning practices. Consequently, some cited literature references conditions preceding this transformative shift. To ensure the findings' relevance and address potential limitations, the researcher presents a discussion analyzing how he has addressed the potential impact of the COVID period on the documented aspects of instructor acceptance of e-learning.

Firstly, the researcher carried out additional literature review post-pandemic to ensure that significant contributions to extant literature reflecting on the implications of the COVID pandemic were included in the Thesis. Secondly, the researcher reviewed the literature and ensured that it reflected the conditions that existed after the pandemic, and in cases where the situation had changed due to the pandemic, the author ensured to clearly and precisely state that. Additionally, the interviews took place post-pandemic and the researcher ensured that the interview protocol was designed in a way to also reflect the exceptional conditions imposed by the COVID-19 pandemic. Furthermore, respondents inevitably incorporated the conditions imposed by COVID within their answers. Finally, the data analysis of the empirical findings also took place post-pandemic, reflecting the conditions that existed at that time.

6.8 Avenues for future research

By shedding light on instructors' views towards effectiveness, implementation, and acceptance of e-learning in HE, the Thesis outlines future research avenues. This section more precisely offers possible directions in terms of methodology, context, and content for future studies.

Content Avenues

Prospective research directions manifesting through the present Thesis' final framework can serve as the foundation for further research, which in turn may uncover content possibilities that look at original relationships and develop novel theories. Next are presented some proposals that fall within this category specifically.

1) This Thesis' framework has embodied and explored the relationship between management of CSFs and barriers, and instructors' acceptance of e-learning. Future studies might look at the instrumental or linking aspect of specific institutional activities aimed at addressing these concepts to examine whether they influence teachers' intrinsic and extrinsic motivation in a similar way, by empirically examining and validating direct relationships. This could be done by employing them as mediators and assessing whether they result in the effective adoption of online learning by instructors.

2) Looking at the content of CSFs and barriers that instructors perceive as important, it could be advisable to examine if specific enabling and mitigating actions resulting in differentiated outcomes, or if different institutional actions have differentiating influences on instructor motivation and acceptance of e-learning.

3) The number of e-learning platforms is expanding rapidly, with new ones continuously being developed over the past several years. Given that the gathering process of primary data was finished by November 2022 and that it was mostly focused on opinions about the Moodle platform, certain e-learning platforms did not yet exist or were brand-new at the time. As a result, continuing study is required in this field to keep track of any developments regarding new e-learning systems (Al-Karaki *et al.,* 2021), and in particular those that have emerged after the timeframe containing the empirical data gathering.

4) Furthermore, future study may take into account various organizational or instructor outcomes at the level of the individual employee, such as instructors' commitment or instructors' innovation, in addition to the results of the analyzed relationship in the present Thesis, which indicate positive or neutral e-learning acceptance based on institutional actions.

5) Based on the framework of this study, more interrelations and mechanisms may be examined and included in future empirical research. Future research directions might incorporate other factors that could influence how the relationship turns out. These kinds of factors include gender disparities, additional organizational factors, and even the direct e-learning manager involvement and their methods to tackle instructors' adoption of e-learning, which could be favorable or unfavorable. Finally, from a social and psychological standpoint, additional individual traits and qualities of instructors than the ones examined in this Thesis may have an impact on the outcomes within the domain of instructors' acceptance.

6) In light of the aforementioned recommendations and the qualitative findings of this study, it appears that the variable of perceived e-learning quality is crucial and requires additional research. Therefore, further study is required to determine how instructors view the quality of the online courses provided by their HEIs and how this affects their motivation and propensity to e-learning acceptance.

Methodological Avenues

1) Ongoing with the various paths that can be followed in terms of methodology, future research could take other trajectories to investigate the final framework of this Thesis. There is only one qualitative approach used in this study. Future research would not only be intriguing but would also address the methodological shortcomings of this study while looking at the same interrelated themes from a different methodological perspective. To be more precise, the results could be triangulated, validated, and then made generalizable using a mixed-method design or a quantitative technique.

2) Regarding the sample used in this study, it would have been intriguing to see if the same outcomes would be seen if the same research methodology had been used, but with the addition of part-time instructors.

Context Avenues

1) The cultural context is a significant external aspect that may have an impact on the findings of this research when considering context-based research routes. Given this, it is crucial to check and determine if the findings hold true in other cultural contexts. For further investigations, a cross-cultural study is advised because it will also aid in the generalization of the research's findings.

2) Similarly, it would be crucial to conduct this research study again in other local contexts. It is recommended that this study, which was carried out in the context of Cyprus's HE sector, be repeated at the primary and secondary levels of the country's educational system.

Foci Avenues

Last but not least, considering the area of focus, future scholars will be anticipated to concentrate on particular constructs and components of the conceptual framework arising as a

result of this study, with the purpose of thoroughly analyzing them. Particularly, several correlations that represent intriguing directions for additional investigation are instructor IT competencies and stress levels, or provision of training and instructors' confidence levels, or utilization of innovative online invigilation tools and improvement of instructors' perceptions towards the quality of e-learning assessment.

6.9 Conclusion

Concluding, this Thesis' researcher aimed to explore and understand the effect of e-learning instructors' perceptions towards CSFs, barriers, and management actions, on instructors' acceptance of e-learning systems in HE. More precisely, this doctoral dissertation offers theoretical and practical contributions to the theoretical domains of instructors' perceptions of e-learning effectiveness factors and implementation barriers, and instructor acceptance and continuance commitment to the e-learning mode of delivery by investigating this relationship through the relevant institutional actions to achieve the positive effects of e-learning CSFs and mitigate the negative effects of e-learning barriers. This thesis therefore contributes to the body of knowledge in the aforementioned fields and suggests how practitioners and managers might restructure their methods to benefit from the positive effect of institutional actions, on instructors' acceptance and continuous commitment to using the e-learning mode of delivery.

More importantly, the HE industry serves as a crucial background for this study, which is why it is so significant. As a result, stimulating insights are provided that boost instructors' well-being within the e-learning experience and prepare the ground for the involvement of instructors in the e-learning design process. Practitioners of e-learning in higher education might use the findings and the recommendations of this Thesis, to boost the management actions, better direct investment efforts, and in this way, promote positive instructor perceptions towards e-learning. As a result, the present Thesis adds knowledge to the relatively recent area of e-learning design and policy, where instructors can offer their views. This can be viewed as an innovative management tool, showing a lot of promise, since it can provide tremendous advantages to contemporary HEIs.

The study's final conceptual framework is crucial and thorough because it can serve as a foundation for the creation of further underlying mechanisms and relationships that will examine additional advantages of instructor positive perceptions and willingness to accept the

e-learning mode of delivery. This Thesis is expected to motivate HEI e-learning management to re-evaluate their approach, plans and strategies, and make investments that will be useful for the improvement of e-learning quality.

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Appendices

Appendix I: Research keywords

• Online education	• Online education stakeholders
• Traditional	• System
• Ground based	• Distance learning
• Face to face	• Online learning
• In class	• Distance education
• E-learning	• Quality
• Technology enhanced learning	• Framework
• Effectiveness	• Implementation
• Cost effective	• E-learning Acceptance
• Cost effectiveness model	• Key Performance Indicators
• Critical Success Factors	• Problem
• Barrier	• Constraint
• Issue	• Instructor Perception
• E-learning benefits	• E-learning challenges
• E-learning Management	• Higher Education
• Instructor Motivation	• Engagement
• Human Factors	• Social Factors
• Technology Acceptance Model	• Psychological Factors

Appendix II: Search strings

1. "Online education" OR "distance learning" OR "e-learning" OR "elearning" OR "online learning" OR "technology enhanced learning" OR "TEL" AND "faculty" OR "academic staff" OR "educator*" OR "lecturer*" OR "instructor*" AND "motivat*" OR "engag*" OR "inten*" OR "accept*" OR "satisf*" OR "perception*" OR "perspective*"
2. "Online education" OR "distance learning" OR "e-learning" OR "online learning" OR "technology enhanced learning" OR "TEL" AND "Critical success factor*" OR "CSF*" AND "faculty" OR "academic staff" OR "educator*" OR "lecturer*" OR "instructor*"
3. "Online education" OR "distance learning" OR "e-learning" OR "online learning" OR "technology enhanced learning" OR "TEL" AND "Critical success factor*" OR "CSF*" AND "faculty" OR "academic staff" OR "educator*" OR "lecturer*" OR "instructor*" AND "motivat*" OR "engag*" OR "behavioral intention" OR "acceptance" OR "continuance satisfaction"
4. "Online education" OR "distance learning" OR "e-learning" OR "online learning" OR "technology enhanced learning" OR "TEL" AND "faculty" OR "academic staff" OR "educator*" OR "lecturer*" OR "instructor*" AND "motivat*" OR "engag*" OR "behavioral intention" OR "acceptance" OR "continuance satisfaction"
5. "Traditional" OR "ground based" OR "face to face" OR "in class" AND "education" AND "differen*" AND "Online education" OR "distance learning" OR "e-learning" OR "online learning" OR "technology enhanced learning"
6. "Online education" OR "distance learning" OR "e learning" OR "online learning" OR "technology enhanced learning" AND "universit*" OR "tertiary education" OR "higher education" OR "professional training" OR "organiz/sation*"
7. "Problem*" OR "barrier*" OR "issue*" OR "constraint*" AND "traditional education" OR "classroom based" OR "conventional education"
8. "Quality" AND "cost effectiveness" AND "Online education" OR "distance learning" OR "e-learning" OR "online learning" OR "technology enhanced learning"
9. "Framework" OR "model" AND "Online education" OR "distance learning" OR "e-learning" OR "online learning" OR "technology enhanced learning" AND "stakeholder*"
10. "Characteristic*" OR "constituent*" OR "component*" OR "element*" OR "factor*" AND "Online education" OR "distance learning" OR "e-learning" OR "online learning" OR "technology enhanced learning"
11. "Constraint*" OR "limitation*" OR "problem*" AND "Online education" OR "distance learning" OR "e-learning" OR "online learning" OR "technology enhanced learning"

12. "Online education" OR "distance learning" OR "e-learning" OR "online learning" OR "technology enhanced learning" AND "stakeholder*" OR "investor*" OR "educator*" OR "lecturer*" OR "instructor*" OR "technical support" OR "accreditation bod*"
13. "Online education" OR "distance learning" OR "e-learning" OR "online learning" OR "technology enhanced learning" AND "stakeholder*" AND "interest*" OR "power"
14. "Critical success factor*" OR "CSF*" AND "Online education" OR "distance learning" OR "e-learning" OR "online learning" OR "technology enhanced learning"
15. "Key performance indicator*" OR "KPI*" AND "Online education" OR "distance learning" OR "e-learning" OR "online learning" OR "technology enhanced learning"
16. "Financ*" OR "profit*" OR "cost" OR "fee*" OR "revenue*" AND "Online education" OR "distance learning" OR "e-learning" OR "online learning" OR "technology enhanced learning"
17. "social factors" OR "social CSF" OR "psychological factors" OR "psychological CSF" AND "Online education" OR "distance learning" OR "e-learning" OR "online learning" OR "technology enhanced learning"
18. "behavioral economics" AND "Online education" OR "distance learning" OR "e-learning" OR "online learning" OR "technology enhanced learning"
19. "Critical success factor*" OR "CSF*" AND "cost effective*" OR "cost effective*" AND "Online education" OR "distance learning" OR "e-learning" OR "online learning" OR "technology enhanced learning"
20. "sustainability" OR "sustainable" AND "Online education" OR "distance learning" OR "e-learning" OR "online learning" OR "technology enhanced learning"
21. "TAM" OR "Technology Acceptance Model" AND "cost effective*" OR "cost-effective*"
22. "motivat*" OR "engag*" AND "Online education" OR "distance learning" OR "e-learning" OR "online learning" OR "technology enhanced learning" AND "stakeholder*"
23. "community of inquiry" OR "CoI" AND "Online education" OR "distance learning" OR "e-learning" OR "elearning" OR "online learning" OR "technology enhanced learning" OR "TEL" AND "teaching presence"
24. "social factor*" OR "human factor*" AND "Online education" OR "distance learning" OR "e-learning" OR "elearning" OR "online learning" OR "technology enhanced learning" OR "TEL" AND "faculty" OR "academic staff" OR "educator*" OR "lecturer*" OR "instructor*"

Appendix III: Interview cover letter

UNIVERSITY
of NICOSIA

Interview Cover Letter

To Whom It May Concern

PARTICIPATION IN PhD RESEARCH

Title of the Study: An Integrated Framework of the Effect of Critical Success Factors, Barriers and Management Actions on Instructor Acceptance of E-learning in Higher Education

My name is Theodoros Millidonis, and I am a PhD candidate at the University of Nicosia. My research is focused on the possible effects that management of e-learning critical success factors and barriers have on the acceptance and continued use of e-learning systems by faculty members in higher education institutions in Cyprus. The participants in this study will be faculty members of Cypriot universities that have at least three years of experience in teaching e-learning courses.

Through conducting this research, I will attempt to:

1. Explore and understand e-learning instructors' perceptions towards e-learning effectiveness factors and barriers to implementation.
2. Investigate what e-learning instructors think and feel about HEI management actions to achieve e-learning effectiveness factors and to overcome barriers to implementation.
3. Examine the combined resultant effect of management actions to achieve e-learning success factors and overcome barriers to implementation, on instructors' acceptance of e-learning.

I will attempt to add to the existing body of knowledge in the field of e-learning management, by developing a conceptual framework that illustrates instructor acceptance of e-learning by converging instructor perceptions towards e-learning success factors, barriers, and management actions to address these issues.

Thank you for your willingness to participate in this interview. Your participation is voluntary, and you do not have to answer any questions you do not wish to. If at any time you

do not wish to continue with the interview, you may choose to interrupt it. The entire interview will take approximately 60 minutes, and the time you contribute to this cause is greatly appreciated.

On behalf of my supervisors Prof. Petros Lois, Dr. Ifigenia Georgiou, and Dr. Evangelos Tsoukatos I wish to express our gratitude for your kind assistance. Should you wish to receive the final results of my PhD thesis, I would be happy to provide them to you. Thank you for your valuable contribution.

Sincerely,

Theodoros Millidonis, PhD Candidate

School of Business

University of Nicosia, Cyprus

Email: Millidonis.t@unic.ac.cy

Address: University of Nicosia, 46 Makedonitissas Avenue, 2417 Engomi, Nicosia, Cyprus

Appendix IV: Pre-interview briefing

Title of Study: An Integrated Framework of the Effect of Critical Success Factors, Barriers and Management Actions on Instructor Acceptance of E-learning in Higher Education

Time: The interview will take approximately 60 minutes.

I would like to thank you for agreeing to take part in this study, and for the time you will dedicate for this interview. I would like to let you know that your responses will be kept strictly confidential, and your name will not be linked with the research materials and will not be identified or identifiable in the report that results from the research. Your participation is voluntary, and you are free to withdraw from the interview at any time, and should you not wish to answer any particular question or questions, you are free to decline.

I would like to ask for your permission to record the interview in video, and to produce a typed transcript of it. The video recording will be used only for analysis and extracts from the interview, from which you would not be personally identified, may be used in conference presentations, reports or journal articles developed as a result of the research. The transcript of the interview will be analyzed by myself as research investigator and access to the interview transcript will be limited to myself and academic colleagues and researchers with whom I might collaborate as part of the research process. No other use will be made of the recording without your written permission, and no one outside the research team will be allowed access to the original recording. The actual recording will be destroyed after results have been transcribed and your anonymized data will be kept for future research purposes such as publications related to this study after its completion.

My research is focused on the possible effects that management of e-learning critical success factors and barriers might have on the acceptance and continued use of e-learning systems by faculty members in higher education institutions in Cyprus.

The interview will be separated into three stages. In the first stage, I will ask you questions concerning your perception and evaluation of factors for e-learning effectiveness and barriers to e-learning implementation. Subsequently I will be interested to find out about your thoughts and feelings about management actions at your institution taken towards e-learning effectiveness factors and barriers to implementation. Finally, I will attempt to examine how management actions taken to achieve e-learning effectiveness factors and to overcome barriers to implementation, might influence your level of acceptance and continued use of e-learning.

Appendix V: Interview protocol

	Interview Protocol
IQ1	Could you please share some information about yourself such as: your age, nationality, professional background, title, and how long you have been teaching online courses?

IQ2	Share your story of how you began teaching online courses. What do you believe generally about the use of e-learning in higher education?
	
	(Ask the informant about their involvement with online teaching by engaging in an informal discussion on the following topics:
	
	    • *Are you currently teaching any online courses?*
	    • *What types of courses and subjects do you teach?*
	    • *How often do you usually teach online?*
	    • *Was it a matter of choice, convenience, or because it was necessary?)*

IQ3	When was the last time you taught online? What did you do and how would you describe the experience?
	
	(Encourage the informant to talk about the feelings, thoughts and emotions they experience while teaching online. Support the discussion if needed with any of the following:
	    • *Describe what you had to do. Do you have any routines while you teach? Do you use the same routines in all the courses you teach?*
	    • *Why do you follow these activities/ routines?*
	    • *How do you prepare?*
	    • *Did you enjoy the experience?)*

IQ4	Are there any elements that help you to improve your online experience and enable you to teach more effectively?
	
	(Elaborate, if needed, that effectiveness means that the e-learning course is able to achieve its purpose, learning outcomes and good passing rates. Ask the informant for examples from their personal experience in relation to each element they mention.)
	
	Follow up with for example, elements that help you to:
	    • *teach more effectively?*
	    • *teach with less stress?*
	    • *feel that you can complete your online session easily and fluently?*
	    • *create a positive learning experience and atmosphere for students?*

	- *Why are those elements that you mentioned above important, to ensure that an effective e-learning course takes place?* - *Which one(s) is/are the most important, and why?* - *How can they be achieved? Can you give me some examples from your personal experience?* *Elaborate the discussion in terms of what the informant believes is important for enabling them to teach effectively/ensuring e-learning effectiveness. If the informant has mentioned some elements, expand on them, otherwise the interviewer gives a brief example of a CSF that could improve e-learning effectiveness, as per Table 2.6: Thesis' preliminary factors, and moves onto the next question.)*
IQ5	*(The interviewer then brings up any of the CSF preliminary factors that were not mentioned and asks the same follow-up questions as per IQ4. If the informant does not understand a term, provide a brief description as per Table 2.6: E-learning effectiveness CSFs examined through the Thesis' conceptual framework. For each preliminary factor discussed, ask the informant to provide examples from their personal experience.)* Are the following elements important in helping to achieve e-learning effectiveness, what are their positive effects, and how can they be attained?
	a) learning quality and environment
	b) proper support and training conditions for instructors
	c) instructional design
	d) instructors to view the e-learning system as useful and easy to use
	e) the technology infrastructure
	f) the characteristics of the instructor
	g) the characteristics of the students
	h) the course content
	i) the ease of system access

	j) social factors/interactions with students and peers
IQ6	Have you faced any issues, problems, difficulties or barriers with e-learning? If yes, can you give me some examples and describe them? *(Ask the informant for examples from their personal experience in relation to each issue, problem, difficulty or barrier they mention and encourage them to elaborate. If they mention some barriers, follow up with the questions below, otherwise give a brief example of a barrier as per Table 2.8: Thesis' preliminary factors and move straight onto IQ7.)* • *To what extent, and why, do those issues, problems, difficulties or barriers that you mentioned above, prevent you and your institution in general from successfully implementing an e-learning course?* • *Which one(s) is/are the most difficult to overcome, and why?* • *How can they be overcome? Can you give me some examples from your personal experience?*
IQ7	*(The interviewer then brings up any of the barriers preliminary factors that were not mentioned and asks the same follow-up questions as per IQ6. If the informant does not understand a term, provide a brief description as per Table 2.7: E-learning barriers to implementation examined through the Thesis' conceptual framework. For each preliminary factor discussed, ask the informant to provide examples from their personal experience.)* Have you faced any of the following issues, what are their negative effects, and how can they be reduced?
	a) limited HEI resources/institutional financial resources/budget allocated to e-learning
	b) lack of administrative support
	c) lack of technical support
	d) lack of student motivation, participation and engagement
	e) lack of personal interaction between instructors and students
	f) lack of instructor IT competencies

	g) increased workload
	h) inadequate incentives, compensation and promotion opportunities
	i) not including instructors in institutional decision making
	j) Resistance to change
IQ8	What does your institution do to help you teach more effectively? *For example, what does your institution do to ensure that:* • *you feel successful in your teaching?* • *the students learn effectively, and they achieve the expected learning outcomes?* • *both you and the students are satisfied with the e-learning experience?* *Can you give me some examples from your personal experience?* *What more can your institution do?* *(Elaborate the discussion in terms of what the informant thinks and feels about management actions that have been taken/could be taken by their institution, to achieve the preliminary factors/CSFs that the informant feels are important, and any additional CSFs mentioned by the informant.)*
IQ9	What does your institution do to help you overcome the issues, problems, difficulties or barriers that you face? *Can you give me some examples from your personal experience?* *What more can your institution do?* *(Elaborate the discussion in terms of what the informant thinks and feels about management actions that have been taken/could be taken by their institution, to eliminate the preliminary factors/barriers that the informant feels are difficult to overcome, and any additional barriers mentioned by the informant.)*
IQ10	a) Has management support affected your willingness to teach online courses in the past? For example, in the past were there more barriers or less supporting elements at your institution? b) What happened in cases where the institution took actions to overcome barriers or introduce supporting elements? *(Encourage the informant to give examples of any management actions towards CSFs and barriers taken in the past/currently/potentially, and how those actions*

	have/could affect their willingness to accept, engage with and continually use the e-learning system used by the institution.)
IQ11	Do you think that your online teaching experience might be influenced by the amount of effort your institution makes to: • help you teach more effectively and • to help you overcome barriers that you face? Why or why not? Can you give me some examples from your personal experience? *(Interviewer could ask this question in the past tense as well to see whether the experience has been influenced in the past. Assist the discussion with the examples below if needed:* *Would you be more/less willing to:* • *Spend more time teaching e-learning courses, preparing e-learning course material, engaging in extracurricular online activities with students, performing administrative tasks related to e-learning, through the institution's e-learning system?* • *Spend more effort to use your institution's e-learning system on a regular basis?* • *Be more organized, energetic, and communicative with online students?* • *Feel more accomplished as a result of the e-learning process?* • *Give up anything (and what) in order to get more support from your institution?)* • *Refuse to teach an e-learning course, if there is lack of support from your institution?)*
IQ12	What else would you want to see done by your institution in order to improve your online teaching experience, and to be more enthusiastic in terms of e-learning? *What would it take for you to be able to commit to using your institution' e-learning system in the long run?*
IQ13	Would you like to add anything in conclusion? *(Trace any closing remarks that may belong to particular themes within the data analysis.)*

Appendix VI: Exemplary transcribed interview excerpts

What do you believe generally about the use of e-learning in higher education?

Quality, which is controversial. Delivering online teaching is more difficult than traditional teaching. So, the knowledge that the student will gain at the end, depends to a high degree on the tutor. I know that the tutor is not responsible to teach in an online course, but plays more the role of a facilitator, however if the tutor does not fulfill the necessary actions to provide quality to the student, the end result in terms of quality is low. And this is the main disadvantage, so in a face-to-face course even if the tutor is not so good, he will go to the class and teach three hours, but this is not the case in online teaching. Because in e-learning students have two main difficulties: stress and uncertainty. And these are interrelated. So, apart from the tutor having to provide the material and guidance, they should also eliminate these two factors as well, and it is not easy. In the end, I am not too sure about the quality of the knowledge that the students will acquire at the end. I am not saying the knowledge will be lower or higher, but we have to take the necessary actions for it to be high or at least the same as in traditional teaching.

(R.9)

Have you faced any issues, problems, difficulties or barriers while teaching online? If yes, can you give me some examples and describe them? How can they be overcome? Can you give me some examples from your personal experience?

The problems that arise are a natural consequence of the diminished communication between the lecturer and the students, and it is diminished both in terms of quantity as the contact is much less, and in quality. So, thereafter you don't have any particular problems which are distance learning related, it's just problems that arise naturally due to diminished quantity and quality of communication. So, for example, I explain to students in my limited hours with them online what their project should be like, I give them a description which is like three pages long, and most students will give me what I am asking for, but I have something like 5% that will give me something completely different. Of course, had they read the project well, and had they listened carefully to what I said, someone could say that it is their fault, and not distance learning's fault. But that's the whole point. Distance learning is not a system that is applied to an ideal world an you throw it at students. The whole point is to have a system that will accommodate the students that will not read. And online teaching doesn't allow me to have the control that I have in a normal class. And

also, when something goes wrong, which might be completely neither here or their project, or a person missing the whole point of what we are talking about, again when the problems arise, you have the issue of trying to solve a problem again with limited communication so it's sort of like a never-ending cycle.

(R.15)

Ok, so essentially these are the main things that you would say help generally improve the experience. If we can now move on and I can perhaps ask you about some of the things that we didn't mention just to get your opinion about whether you think these are important as factors for successful E-Learning courses and how they can be achieved if you believe that they are important factors. What about the instructional design itself?

I didn't mention it because it's something that is missing from the university. I have requested the support of an instructional designer many times and management say that the funding is not adequate enough to support the employment of an instructional designer. However, it is important to include instructional designers as integral members of our staff.

So, you would say that this is an element that would improve the experience?

Absolutely yes, because a strong collaboration between the academic and an instructional designer is the basis for the creation of an effective online learning environment. The academic is an expert on the content, on the subject matter, but the instructional designer design is an expert on design theories and user experience; these are practices that I am not familiar with. It shouldn't be a prerequisite for the academics to have the knowledge and skills to design a usable functional and attractive environment in terms of presentation and structure. That should not be my job, because my time is limited. I have to do research, I have to teach courses, therefore when instructional designers developers and instructors cooperate, the best possible meaningful experience is provided to learners, because we tackle technical and pedagogical issues at the same time. The instructional teams can also coordinate online activities, provide technical support, create guidelines for the use of digital platforms and tools in education. Therefore, the collaboration among the two parties is really important, and we currently don't have it.

(R.3)