Technologically disadvantaged students' perceptions of blended learning in a higher education institution: the case of students at Walter Sisulu University

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Declaration

I, Onke Gqokonqana, hereby declare that the dissertation entitled **TECHNOLOGICALLY DISADVANTAGED STUDENTS' PERCEPTIONS OF BLENDED LEARNING IN A HIGHER EDUCATION INSTITUTION: THE CASE OF STUDENTS AT WALTER SISULU UNIVERSITY** and its contents of this dissertation submitted for the degree Master of Accounting at the Durban University of Technology, represent my original unaided work, which excludes contributions in the form of guidance from subject matter experts, my supervisor, and my promoter. The dissertation furthermore has not previously been submitted to any other institution of higher education towards any qualification. I further declare that all sources cited or quoted are indicated and acknowledged employing a comprehensive list of references. Furthermore, the dissertation represents my own opinions and not necessarily those of the Durban University of Technology.

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Abstract

Students at Walter Sisulu University come from rural areas and are generally unfamiliar with technology as a learning tool. Similarly, Walter Sisulu University is categorised as a historically disadvantaged institution of higher learning, with face-to-face instruction being the preferred approach. Under apartheid, historically disadvantaged institutions were founded to meet the educational “needs” of the former “rural homelands,” which were marked by demographic areas and market variation in comparison to their affluent equivalents, resulting in social hierarchies.

The conventional chalk-and-talk technique of teaching and learning has become less effective as more educational institutions integrate technology in teaching and learning. Walter Sisulu University is attempting to incorporate technology into teaching and learning by implementing blended learning, which is the addition of online components to the traditional face-to-face form of instruction. The learning management system was not completely utilized despite the university purchasing a license for Blackboard customised as ‘Wise-up' at Walter Sisulu University seven years ago. It was implemented three years ago in the Accounting and Finance department.

The purpose of this study was to examine the technologically disadvantaged students' perspectives of blended learning particularly for Cost Accounting 2 with students from a technologically disadvantaged background and the use of blended learning. This is critical for determining the learning management system modifications that must be made as well as the course design on its own.

The data was collected using a quantitative technique from all second-year National Higher Certificate: Accountancy students at Walter Sisulu University. This census approach was chosen because it allowed the study to reduce sampling error by allowing all registered students to participate in the survey. According to the quota of registered students, 400 students were supposed to fill out the survey, however, only 119 (n=119) did. The data acquired through the use of the 'Question pro' application was analysed using a statistical package for social science version 25.

The study found that blended learning is an effective model to learn Cost Accounting 2 because the institution gave enough information on how to use the system. Students benefit from blended learning because it allows them to be involved in their studies. To be fully matched

with blended learning standards, changes were made to the Cost Accounting 2 module. A revamp of the course guide could be beneficial because it will make it apparent to students what will be covered in face-to-face mode and what will be covered through the usage of the learning management system. Due to connectivity concerns, some students expressed dissatisfaction with the use of the learning management system.

As a result of the Coronavirus epidemic, the study used an online questionnaire instead of face-to-face as lectures were in suspension. The study was confined to National Higher Certificate: Accountancy students because the goal was to learn about the students' perceptions of Cost Accounting 2 through blended learning. Future research could look into the perceptions of blended learning among the entire Accounting Department's students, as accounting-related disciplines differ at times. Other methodology could also be used to explore students' perceptions of blended learning.

Key words:

Cost Accounting 2; Blended learning; Student's perceptions; Blackboard (Wise-Up); Technological disadvantage background.

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List of abbreviation

WSU	: Walter Sisulu University
BL	: Blended Learning
NHC: Acc.	: National Higher Certificate: Accountancy
HEIs	: Higher Education Institutions
PU	: Perceive Usefulness
PEOU	: Perceive Ease of Use
A:	: Attitude
CAC:2	: Cost Accounting 2
LMS	: Learning Management System
Gen.Z	: Generation Z
Covid-19	: Coronavirus
SSPS: v.25	: Statistical Package for Social Science version 25
ERTL	: Emergency Remote Teaching and Learning

CHAPTER ONE:

INTRODUCTION

1.0 Introduction

The perception of students from technologically disadvantaged educational background on the adoption of blended learning as the mode of teaching and learning at Walter Sisulu University is unknown. Therefore, this is a need to explore the impact of blended learning to address the challenges faced by those students coming from schools where there is little or no technology-assisted learning aids. This chapter discusses the research's background and problem statement, as well as the study's aim, objectives, significance, and structure

1.1 Background to the study

The fourth industrial revolution (4IR) necessitates that higher education institutions expand their technology systems, implement new teaching and learning modalities, and remove impediments to innovation (Gleason 2018:217-219). Similarly, boosting education, training, and innovation in this knowledge-driven society is higlighted in Chapter 9 of the National Development Plan (National Planning Commission 2010:20). As a result, higher education institutions are expected to modify their teaching and learning methods in order to produce graduates with these 21st-century requisite skills. This includes: critical thinking skills, problem-solving abilities, and the ability to adapt to change as society grows (Mahanal *et al.*, 2019:419*)*). More so, the traditional chalk and talk method have become less effective as a result of this transition (Maycock, 2018:125). The Corona virus (COVID-19) pandemic have enforced the Higher Education Institutions (HEIs) to drastically move from face-to-face to Emergency Remote Teaching and Learning (ERTL) methods (Hodges et al., 2020:6; Czerniewicz et al., 2020:948) This move was dependent on the use of technology devices for teaching and learning activities

Students at Walter Sisulu University (WSU) are from rural areas and unfamiliar with technology as a learning tool (Hompashe 2018:12). Similarly, WSU is categorised as a historically disadvantaged institution of higher learning, with face-to-face instruction being the preferred approach. Under apartheid, historically disadvantaged institutions (HDIs) were founded to meet the educational “needs” of the former “rural homelands,” which were marked by demographic areas and market variation in comparison to their affluent equivalents, resulting

in social hierarchies (Africa & Mutizwa-mangiza, 2018:2-3,5). WSU primarily draws students from mostly rural and semi-urban locations. The quintile schools in these areas were under-resourced with little or no exposure to technology as a learning tool (van Dyk & White 2019:3). The socioeconomic level of each community where the school is located informs the quintile level of the public schools in South Africa (Ogbonnaya & Awuah 2019:106).

The government's desire to correct previous injustices that left schools with disproportionately low resources inspired the categorisation. Schools that feed WSU are mostly in the first to third quintiles of the five quintiles (Hompashe 2018:12). All public ordinary schools in South Africa are divided into five categories, known as quintiles, for the purpose of allocating financial resources. The 'poorest' quintile is quintile one, while the 'least poor' quintile is quintile five. According to Hompashe (2018:14), the eight poorest districts in the country are from the Eastern Cape and these are the districts that are regarded as feeder schools for WSU.

WSU is still making progress in incorporating technology with conventional instruction, which is referred to as blended learning (Hompashe 2018:24). Blended learning is frequently employed in education, according to Liu et al. (2016:1). WSU has implemented an e-learning platform that will be enabled by Blackboard, a learning management system (LMS) that was first implemented at WSU in 2015 (Ikedinobi 2015:15). This was in addition to regular face-to-face instruction in the classroom. However, for some time the use of the LMS was very minimum as it was only used for repository purposes. The Department of Accounting and Finance at WSU started using it for teaching and learning in 2018.

1.2 Research problem

The National Higher Certificate (NHC): Accountancy was designed to provide students with skills and knowledge that may be applied in the workplace. However, the program, according to Beukes *et al.* (2018:9), was criticised for failing to sufficiently prepare students for the workplace because, in addition to technical knowledge, they were also required to acquire professional abilities such as technical information skills. Therefore, it is imperative for students from educational backgrounds that are technologically disadvantaged to migrate from traditional face-to-face approaches to a blended learning approach.

In the digitalised teaching and learning environment, the traditional approach to teaching and learning is also becoming less efficient (McGuinness & Fulton 2019:15; Roy *et al*., 2019:6). Blended learning was found to be new in the department of Accounting and Finance learning

at WSU. Hence this study is intended to explore Cost Accounting 2 students from historically disadvantaged technologically school's perceptions on the blended learning approach.

1.3 Research questions

1. What challenges do students from a technologically-disadvantaged background experience with blended learning?
2. How do Cost Accounting 2 students perceive blended learning in WSU?
3. How effective is the adjustment of blended learning in Cost Accounting 2-course design in supporting the previously technologically disadvantaged students?

1.4 Research aim

The aim of this study is to deternine how students from a technologically-disadvantaged educational background perceived blended learning in the National Higher Certificate: Accountancy program, with the view of improving the design of blended learning for the Cost Accounting 2 module within the program.

The following objectives have been addressed in order to achieve the above-mentioned aim:

1.5 Research objectives

1. To explore the challenges that students from a technologically-disadvantaged background experienced with blended learning.
2. To investigate Cost Accounting 2 student's perceptions of blended learning in WSU.
3. To evaluate adjustments in Cost Accounting 2-course design that were needed to support previously technologically-disadvantaged students.

1.6 Scope of the study

Due to budget constraints, the study's scope was confined to second-year WSU NHC: Accountancy students, rather than the complete NHC student body at the Buffalo City campus in East London. As of the nature of the research, the study was limited to one qualification, NHC: Accountancy at WSU students from four campuses: Buffalo City, Queenstown, Ibika, and Zamukulungisa.

1.7 Research significance

By presenting students' opinions of blended learning from a technologically-disadvantaged educational background, this study contributed to the debate in accounting education. Accounting-related modules are practical in nature and BL advances the interaction and collaboration among students and instructors through the LMS (Aldosemani *et al.*, 2018:342) In their previous schooling, many students had little or no experience with technology as a learning aid.

This study aims to benefit a variety of stakeholders, including university administrators who are promoters and sponsors of blended learning. The consumers of blended learning are instructors and students. Finally, they include professional bodies that are responsible for quality assurance, as well as industry, which is interested in the quality of skills that university graduates possess that are relevant to the 21st-century labour market (Chalkiadaki 2018:7).

1.8 Outline of chapters

The thesis is organised as follows:

1.8.1 Chapter one – Introduction to the study

This chapter focused on the research specialty, meaning background, justification, and research significance. Research aims, objectives, and questions were outlined. The framework used to guide the study as well as the methodology is thoroughly explained.

1.8.2 Chapter two – Literature review

The chapter provides an extensive review of literature on:

1.8.2.1 Conceptual review

- Understanding the term: Perception
- The concept of Blended learning
- Students from a technological disadvantaged background
- Generation Z. (Gen. Z)
- Corona Virus – 2019 (COVID-19)

1.8.2.2 Theoretical review

- E-Learning theory
- Blended Learning theory

1.8.2.3 Empirical review

- Perception and Attitude
- Blended Learning
- Generation Z (Gen.Z)

1.8.2.4 Conceptual framework

- Technology Acceptance Model (TAM)

1.8.3 Chapter three – Research methodology

The research design and techniques are presented in Chapter three. This chapter also explains how the research instruments were administered, as well as the strategies that were employed to make data collection, sorting, and capturing efficient. This chapter also discusses the data analysis strategies used to get conclusions from the collected data.

1.8.4 Chapter four – Data analysis

The tool that was used to analyse the data collected from the participants is described in this chapter. Furthermore, an analysis of how the research questions are addressed as well as the findings of the study are presented in this chapter.

1.8.5 Chapter five – Summary, research implications, and recommendations

This chapter provides a summary of how students from technologically disadvantaged backgrounds perceive blended learning. What the study failed to accomplish is explained as the limitations. Lastly, the chapter's recommendations for future studies are presented.

1.9 Conclusion

This chapter provided a summary of a study of students' perceptions of blended learning from a technologically disadvantaged background. In this chapter, a mid-map guide captures well

how the investigation would be handled. The literature review is discussed in the second chapter.

CHAPTER TWO:

LITERATURE REVIEW

This chapter explores the literature on the term perception, as well as the concept and motivation for blended learning. Institutional roles and mixed learning design is also be highlighted. Finally, ethical issues and the future of blended learning are discussed. Much of the analysed information relevant to the blended learning environment comes from non-South African institutes due to the new emergence of blended learning in Southern African countries. As a result, the literature on the nature of Information and Communication Technologies in South African institutions, as well as public perceptions of technology's use in education, are assessed.

2.0 Chapter overview

Online learning, which is a teaching technique conducted through the internet and software programs, has merged the conventional face-to-face manner of teaching and learning. Institutions all over the world are actively encouraging students to pursue an education online in order to save money as a result of the growing popularity of this technique. In order to generate quality and responsive students, several institutions are considering merging online and face-to-face instruction.

At Walter Sisulu University (WSU), the traditional method of teaching and learning is predominantly face-to-face. However, on the other hand, it is one of few institutions that has infused technology into traditional face-to-face learning in order to achieve its educational goals and contribute actively to international educational reforms. Due to the cCOVID-19 pandemic, WSU employed Emergence Remote Teaching and Learning (ERTL) (Czerniewicz et al., 2020:946) beginning in July 2020 to accommodate students living far away from campuses and cities during the lockdown. Blended learning (Crawford & Jenkins 2017:52) is the term that describes this technology integration.

As a result, the purpose of this study is to investigate students' perceptions of blended learning from a technologically-disadvantaged educational background. The researcher examines the strengths and places for improvement in blended learning at South African higher education institutions, particularly at WSU. The aim is to get a more comprehensive and in-depth understanding of students' perceptions of blended learning and the support they have gotten from their institution, as well as their happiness with the facilities given and continuous

engagement with blended learning. Furthermore, the findings from the study will provide instructors the ability to further enhance the quality of Cost Accounting 2 using the blended learning mode of teaching. In addition, depending on students' insights into their learning experiences, recognising the strengths and flaws that could lead to e-learning improvements. According to previous studies, students' acceptance of online learning is growing among those who have used it because they see it as a more flexible way to learn that is less time demanding and allows them to learn from the comfort of their own homes (Aristovnik *et al*., 2020:9).

2.1 Conceptual review

2.1.1 Understanding the terms perception and attitude

Perception is a broad term that describes how people perceive and comprehend the world around them (Shackleton *et al*., 2019:11). Perception is defined in a variety of ways by social scientists. As a result, choosing an acceptable definition of perception for this study is crucial. The definitions of perception, as well as the elements that influence people's perceptions and the relationship between perception and attitude, are discussed in this section. The terms attitude and perception are commonly used interchangeably. The topic of attitude will be explored in the final section of the chapter due to the literature's interrelationship between perception and attitude.

Perception is the process by which humans extract meaningful information from a physical stimulus, according to Owston et al. (2019:41). It's a means of making sense of our feelings. According to Terry, Zafonte & Elliott (2018:405), perception is "the transformation of information obtained from the environment via the sense organs into experiences of things, events, sounds, tastes, and so on." (Owston *et al*., 2019:29–45). Perception is defined by Long, Van Hanh (2020:102) as a mental process that analyses sensory information and interprets the environment through the senses while avoiding ideas and behaviours resulting from detected input. Three important factors influence perception. (Aldosemani, Sheperd & Bolliger 2019:344).

Furthermore, perception is influenced by inputs, individual experience, intention, and society demands. Secondly, the perceiver gathers information and develops a hypothesis to figure out what's going on. Finally, perception is a set of higher mental processes that allow us to see the world, anticipate future occurrences, and respond correctly (Shackleton *et al*., 2019:13). The examination of the participants' perceptions, as indicated in the second statement, provides a

better knowledge of how the participants view and expect the future of blended learning at WSU in South Africa. According to Dipietro & Levitt (2019:106), perception is influenced not only by physical stimulation, which has little information value but also by experience and memory. Perceptions are formed as a result of social experiences and interactions within the school, home, and religion, according to this hypothesis. People's perspectives are influenced by their earlier experiences, according to Brothen & Wambach (2016:20). As a result, the physical stimulation is given by today's blended learning environment, which combines learning and teaching technology, as well as student-student, student-lecturer, and student-digital material exchanges, has the potential to modify participants' perceptions. All of these factors, as well as the lecturers' and students' prior experiences, are likely to influence how they perceive the blended learning environment.

There's also a case to be made for emphasising the importance of attention in perception creation. According to Atkinson (2017:49), paying attention is necessary for forming a well-rounded perception. "We perceive and observe only when our attention is directed to the report of the senses, whether reflexive or intentional and when the mind analyses the data," argues Atkinson. While the senses provide the raw material for perception, its ultimate fulfilment is entirely contingent on the mind's application. As a result, perception relies on focus. The participants' opinions must necessarily accord with Atkinson's point of view due to the nature of the study. Participants are invited to focus on the blended learning idea, difficulties, and benefits of blended courses during the data collection procedure in order to examine their perceptions through the research questions.

Furthermore, lecturers' and students' views toward a learning environment may have an impact on their activities. Attitudes are individual behaviours that are created in a certain context or setting and influenced by the cognitive process of information gained in that environment (Wilson *et al.* 2020:4). Cognitive representations, according to Wilson *et al.*, are not recovered from memory but rather recreated in a context-sensitive manner. Attitude processes are divided into three categories by Eagly & Chaiken (2007:590): cognitive, affective, and behavioural. They define an attitude as a psychological predisposition that manifests itself in the form of favouring or disfavouring a specific entity in some way. As a result, people's attitudes may influence whether or not they accept or reject particular behaviours. Attitudes and perceptions, according to Eagly & Chaiken (2007:587), share a common component: cognitive perspectives. This helps to explain why some authors use the terms *perception* and *attitude* interchangeably

and apply the same interpretation to both. On the other hand, behavioural techniques stress how each individual's unique views shaped their attitudes (Wei *et al.*, 2017:219).

2.1.2 The concept of blended learning

Blended learning does not have a single definition. Some authors define blended learning as a mix of instructional modalities or delivery mediums (Crawford & Jenkins 2017:52), while others define it as a mix of face-to-face and online learning (Ruokonen & Ruismäki 2016:110-111). In essence blended learning is described as a form of education in which students learn using electronic and online media in addition to traditional face-to-face instruction in this study. Blended learning not only allows teachers and students to exchange synchronous and asynchronous feedback, but it also meets educational needs such as increasing learning satisfaction, increasing convenience and flexibility, achieving and improving language learning skills, and developing critical thinking skills. Borglum (2016:7-9;) stated that by allowing students to express questions anonymously is critical because they may lack the confidence to do so in a classroom context or on a blended learning discussion board because they believe their queries are foolish. Yuerong *et al.* (2017:474) claim that students may experience culture and learning shock as a result of being exposed to a novel learning scenario.

Blended learning, also known as hybrid learning or mixed-mode learning, has grown in popularity in recent years as a result of the increased use of web-based training. According to the American Society for Training and Development, blended learning is one of the top ten emerging trends in the knowledge delivery business (Rojabi 2019:40). Blended learning has no universally acknowledged definition; the most commonly used term refers to the combination of online and traditional face-to-face learning (Vasudeva, Colthorpe, and Anderson , 2019:108). According to Wang *et al.*, (2017:11) online (web-based) learning and face-to-face learning have mostly remained different in the past due to variations in their techniques and audience needs. In contrast to the conventional face-to-face learning, which prioritizes human-human interaction, 100% online learning, also known as distant learning, necessitates more self-paced learning and learner-materials interactions. However, technological advancements that enable human interaction in both synchronous and asynchronous online learning contexts have prompted the merger of face-to-face and online learning environments (Czerniewicz *et al*., 2020:959).

2.1.3 Students from a technologically disadvantaged background

South Africa's educational system suffered greatly during colonisation and apartheid. South African higher education has been shaped by social, political, and economic inequality, as well as disparities of class, race, and gender (Kritzinger, Lemmens, & Potgieter 2018:159–166). Individuals are marginalized based on their social classes and groups. Under apartheid, historically disadvantaged institutions (HDIs) were created to meet the educational needs of the former Bantu Homelands, which were marked by discrepancies as compared to their affluent equivalents, resulting in social hierarchies (Africa & Mutizwa-mangiza 2018: 82-83, 85).

The democratic government adopted a scheme of subsidising basic education schools according to quantile categorization to bridge the gap created by the unfair apartheid regime. the socioeconomic situation (Ogbonnaya & Awuah 2019:14) The majority of schools in the Eastern Cape Province (EC) have been in quintiles one and three since the system's establishment. These are public schools that are fully sponsored by the government but lack sophisticated resources to carry out their educational operations. Because they rely on government financing, the priority is to have basic learning resources. As a result, they are not introduced to technology as a learning tool. These schools eventually became WSU's feeder schools (Hompashe 2018:12).

Being labelled HDI has an impact on those who choose which university to attend. Labelling has also instilled in the person working in a labelled institution a stereotypical way of thinking (Africa & Mutizwa-mangiza, 2018:84). Therefore, when blended learning was offered, the fact that WSU is designated as HDI may have had an impact on the learners' expectations. This technological infusion may excite students since they will respect the university's efforts in the face of adversity (Mohamedbhai 2020:31). Learners, on the other hand, may reject the learning process because they believe it will not work for them and is foreign to their learning because they have not been exposed to technology as a learning tool (Parker *et al*., 2021:4).

Blackboard has been introduced by Walter Sisulu University as a learning tool (registered as WiSeUp). This is a learning management system and platform designed for students and instructors to collaborate (Kasim & Khalid 2016:55). More lecture aids, such as graphics, charts, and videos, may have an impact on students' perceptions of blended learning. Although many are new to the blended learning paradigm of teaching and learning, the registered students in this course are classified as post millenniums or generation Z. (Dimock 2019:3-4).

2.1.4 Generation Z

Generation Z is defined as a technologically privileged generation born between 1995 and 2012 (Grace-Bridges, 2019:80). Because they're known as *internet kids*, it's assumed that they'll be interested in using the learning management system (WiSeUp). According to research, Gen.Z has an impact on the workplace (Seemiller & Grace 2018:11). Ninety-one percent believe that the technological sophistication of a company influences their decision to work for it (Stillman & Stillman, 2017:59). It is consequently imperative that higher education institutions take considerable care in preparing this generation for the workplace of the twenty-first century.

2.1.5 The COVID-19 pandemic

On March 8, 2020, South African officials announced the first Coronavirus infection. In order to prevent the spread of the virus, the South African government stopped all schools, including universities and other educational institutions, until March 26, 2020. (Government News Agency of South Africa, 2020). The ministers of basic education and higher education halted all ongoing educational activities in accordance with the government's order; as a result, lectures, and clinical sessions, as well as laboratories, began to provide support to their students via virtual, online channels such as ZOOM and Microsoft's Teams application (Rahiem 2020:7).

Most countries have issued a complete or partial border lockdown to prevent the spread of the virus among their nationals (Mhlanga & Moloi 2020:15). Various education ministries around the world have also made substantial efforts to reduce face-to-face interactions between students and lecturers. They proposed that all academic teaching be relocated to the internet at higher education institutions. As a result, during the semester, all face-to-face academic activities were suspended (Czerniewicz *et al.*, 2020:2). All academic activities were relocated to virtual teaching to avoid disrupting the delivery of lectures at academic institutions such as colleges and universities. In the not-too-distant future, the virtual online education system will be required, and it is currently being used as a regular teaching practice in various countries (JENA 2020:8). As a result, blended learning was the best option because virtual platforms like MS Teams and Zoom substituted face-to-face connections with students.

2.2 Theoretical review

The use of blended learning and electronic learning (e-learning) at institutions, as well as some literature, is a mix due to the new introduction of the term blended learning. The contrasts between e-learning and blended learning philosophies are explained in this section.

2.2.1 E-Learning theory

E-learning theory is founded on cognitive science concepts that explain how the usage and design of educational technology can improve student learning (Wang 2012:346). He (2019:5) goes on to say that the mind can only handle so much information at a time and that if it is overburdened, its functionality will suffer. To maintain a balance on this, eleven e-learning theory principles were developed. These are the guiding principles: The multimedia principle is to use two audios, visual, and text formats rather than one or three; Principle of modality: Instead of on-screen text, audio narration is used to explain visual content. Avoiding extraneous films and sounds is a principle of coherence. The principle of contiguity entails aligning relevant data with matching images at the same time. The premise of segmentation is to manage complex stuff by dividing it down into little chunks. Signalling principle: Using arrows, circles, and highlights to provide visual cues for the storytelling; Allowing the learner to regulate their learning speed is referred to as the learner control principle. The notion of personalization is to present words conversationally and informally. Pre-training principle: Before beginning the primary procedure of a class, provide descriptions or explanations for crucial ideas. Presenting images with audio or on-screen text but not both is a redundancy principle. Expertise effect: Design principles may have a varying impact on learners with various levels of prior knowledge.

Since 2002, web-based instruction, online learning, networked learning, computer-assisted learning, and computer-mediated learning have all been used to describe learning that is supported by technology through a variety of delivery mechanisms (Rienties *et al.*, 2019:350). All of these terms refer to the employment of information and communication technology in the classroom. In the case of open university programs, e-learning can also refer to integrated learning. The most prevalent usage of e-learning, according to Littlejohn & Pegler (2019:350), is for distance internet-based learning, although there is a blended model of e-learning that blends face-to-face and online learning. There is a difference between the terms e-learning and blended learning, according to the literature. To minimize confusion between blended learning

and e-learning, this study refers to Internet-enabled e-learning as online learning or web-based learning. Blended learning, on the other hand, is defined as learning that combines both face-to-face and online components. (see figure 2.2).

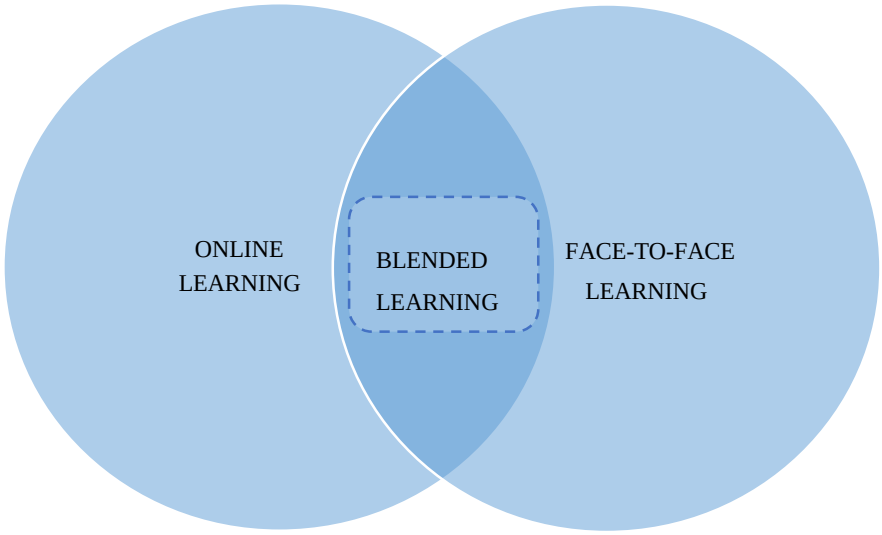

Figure 2-1 A Diagram of the Blended Learning Definition. (Redesigned by the researcher)

Furthermore, the study requires the use of these two terminologies. As a result, in South African higher education, the phrase "blended learning" is not yet well-known. A translation of e-learning is the most often used South African phrase (Fresen 2018:228).

In South African higher education, the term "e-learning" refers to extra online materials. E-learning courses are sometimes referred to as fully online and blended courses in South African higher education.

2.2.2 Blended Learning theory

In the twenty-first century, the use of the internet in education has had a major impact on teaching and learning. Universities are acknowledging the need for change across the board in Higher Education. For technologically challenged children, the traditional method does not appear to be acceptable, and the online approach may be troublesome. E-learning was a potential solution to the global problem of satisfying simultaneous demand for higher education (Banditvilai 2016:220). University courses were established to be taught online as the internet grew in popularity, allowing more people to attend higher education. On the other side,

completely online programs have been criticized for lacking the sociability and support that traditional training provides (Shin & Hickey 2020:982). Several changes, such as bad infrastructure and a lack of synchronous communication, according to the researcher, are likely to leave online students disappointed and disillusioned. Recognising that in terms of skills, knowledge acquisition, workload, and academic rigor, a fully online version of a public speaking course can be comparable to a face-to-face one.

Four key sources of pressure in e-learning are learning technology innovation, learner needs, and budget reduction. According to Garrison & Vaughan (2008:12), blended learning tackles the issue of teaching and learning quality. It's an opportunity to address issues while also distinguishing and boosting higher education institutions' reputations as innovative and high-quality learning institutions (Garrison & Vaughan 2008:153). Blended learning combines face-to-face and web-based learning to provide greater supervision for e-learners and more flexibility and accessibility for in-class learners. The most common purpose of blended learning is to integrate the best of both traditional and online learning (Wang *et al.,* 2017:11).

2.3 Empirical review

2.3.1 Perception and attitude

As illustrated in section 2.1.1 , perception is influenced by a variety of elements, including personal qualities, emotion, motivation, needs, and expectations. People's perceptions are influenced by a variety of things, including their culture (Markus & Kitayama 2020:760). This point of view is included in the study due to the peculiarity of South African culture. The environment, which includes culture, has an impact on perception. Individual characteristics are also linked to how students view their learning environment (Tan *et al.,* 2020:10). Teaching approaches, according to Tan *et al.* (2018:63), have a considerable impact on students' perceptions of their learning environment and, as a result, on their learning outcomes. The elements are regarded as general factors that influence a person's perceptions in the literature.

On the other hand, this research implies that each research environment has a distinct impact on the participants. As a result, the outcomes of this study are expected to disclose more specific variables that influence participants' perceptions of mixed learning environments. This argument explores the relationship between students' perspectives and their ability to learn, as well as how their perceptions are shaped by their classroom experiences. Exploring the participants' perspectives of their current mixed-course experience can surely assist to dispel

any misconceptions about blended learning. The study aims to better understand the viewpoints of lecturers and students on learning settings to improve teaching and learning (Albiladi & , Alshareef 2019:232). According to Albiladi & Alshareef (2019:232), and their colleagues, research into a lecturer and student perceptions of learning and teaching contexts produced several systematic connections relating lecturer perceptions and teaching approaches with student perceptions, learning approaches, and outcomes.

This study used Sainn and Atkinson's concepts to define perception as a mental process of gathering relevant information from stimuli and focusing attention on specific things while being influenced by the study's social and cultural context. Students' attitudes and behaviours in blended learning reflect their perceptions of the learning environment. As a result of their experiences, culture, and personality, people will always interpret things differently. As a result, students' perceptions of their future, behaviours, and teaching style mirror their perceptions of their future, behaviours, and teaching approach, and vice versa. As a result, looking into students' perspectives on blended learning at higher education institutions will help us better grasp how they think about it.

2.3.2 Blended Learning

According to Jones and Lau (2018:924), universities are shifting to a blended learning paradigm due to the need for a human element. Phakakat & Sovajassatakul (2020:814) argue by saying electronic engagement can no longer maintain the characteristics and multi-dimensionality of the tutor-student connection that actual learning appears to necessitate. In contrast, WSU is transitioning to blended courses to meet the needs of undergraduate students enrolled in completely traditional face-to-face courses.

Furthermore, local, and international undergraduate students prefer the blended model to solely online courses. In research on blended learning in Canadian universities by Owston & Malhotra (2019:48), professors at a Canadian school reported that face-to-face contact was helpful for some first-year university students who needed further support. The goal of converting a fully online course to a hybrid format was to achieve this. Hussain, Shahzad, & Ali (2019:189) conducted a study at Saudi Arabia's King Fahd University of Petroleum and Minerals to assess students' views on employing a hybrid model in an electrical engineering course that was delivered entirely online. Students were taught some course materials through the internet. According to the statistics, nearly 90% of students prefer hybrid learning to fully online

learning, and 80% of students emphasize the need for lecturer support. The online course content was preferred by the participants as supplemental material. Students were against the idea of completely online learning taking the place of conventional face-to-face instruction.

To highlight the value of blended learning, several international research studies have been conducted (Borglum 2016:2; Beukes 2018:35; Albiladi & Alshareef, 2019:233). The South African Council on Higher Education reaffirmed distance education institutes' mandate in the early 2000s, emphasising that contact institutions should not trespass on this territory. As a result, a slew of frameworks and standards have arisen that can be utilised to inform current dual-mode provisioning decisions. The University of Pretoria was in charge of this. It claims that combining face-to-face and online learning enhances learning results while also boosting accessibility, flexibility, and cost savings. In terms of cost-effectiveness, a hybrid model has the advantage of reducing building and facilities expenditures as well as transportation costs for off-campus students (Mazana 2018:5).

Wang *et al*. (2017:11) divided global blended learning approaches into four stages: activity level, course level, program level, and institutional level. Table 2.1 depicts the distinctions between these stages, as demonstrated by (Wang *et al*., 2017:11). They point out that in blended learning contexts, course-level blending is widespread. The authors further claimed that the course speaker is frequently in charge of course and activity level selection.

Table 2-1 Four Categories of Blending Levels

	Activity Level	**Course Level**	**Program Level**	**Institutional level**
How blend occurs	Learning activity contains both face-to-face and online elements	Distinct face-to-face and online activities are used in a course	A mix between face-to-face courses and fully online courses	Blended models created by institutions
	Using technological tools in class	tools in class (Oliver, 2019: 564 - 569) Owston, Garrison, and Cook 2017: 54) provide eight different cases of course level blending	A program in South Africa in which certain face-to-face courses are required and the rest are online courses	Walter Sisulu University has created courses in which face-to-face time is reduced when online elements are integrated

Graham *et al.,* (2019:232-238) highlighted three prevalent definitions of blended learning: combining online and face-to-face training, mixing instructional modalities or delivery mediums and integrating instructional methodologies. The first two requirements, according to Wang *et al*. (2017:11-12), are extremely broad because they embrace most learning systems that use at least two instructional techniques or modalities, that is face-to-face lectures and textbook readings. The final definition, which mixes online and face-to-face education, includes providing online materials that are similar to course content, distributing online materials as supplemental resources, and substituting portions of face-to-face content with online materials. These three categories are identified and classified as follows by Wang *et al*. (2017:12): Providing the same opportunity or learning experience in many modes, such as face-to-face and online, is referred to as enabling mix.

- Enhancing blend - providing online supplementary resources for courses that are conducted face-to-face or vice versa.
- Transforming blend - utilizing online learning approaches in teaching as the main instruction method combined with traditional learning.

When online or blended programs are given to support on-campus students, the enabling blend is more likely to be provided at the program level, whereas the enhancing blend is more likely to be provided at the course level. Graham *et al.,* (2019:232) saw that the boosting mix with more resources has gained a lot of attention in traditional academic settings. The most prevalent sort of blended learning, according to Vasudeva *et al.*, (2019:108), is the supply of extra materials for traditional courses delivered through a virtual learning environment supported by the school. Improving the mix is also a priority in the early phases of blended learning deployment in Saudi Higher Education. This appears to be the most efficient way to make a morphing mix that requires more effort. Shifting refers to the transition from an exclusively online or face-to-face learning environment to a mixed format that incorporates both modalities as primary instruction. Because students are exposed to both learning modalities, the first blended learning option for Cost Accounting 2 is the best. However, because more work was done utilising LMS as a result of the Covid-19 outbreak, a move to the third definition was required.

Finally, the altering blend may occur at the course level, where the designer or lecturer determines the activities. Furthermore, the dynamic blend might happen at the institutional level, with the institution determining the nature of the mix.

In this study's case, changing mixes at an institutional level can be considered the nature of blended learning. The most important type of instruction was considered to be both online and face-to-face instruction. In this study, there was no enhancing blend phase; instead, the transforming blend was used directly, and face-to-face content was turned into a blended course in which some face-to-face instruction was substituted with online activities.

A blended course was defined by the Rochester Institute of Technology (RIT, 2004) as any course in which instructor-guided online activities such as online quizzes, virtual team projects, and synchronous chat sessions replaced 25% to 50% of classroom lectures during the 2003-04 academic year. Blended courses at the University of Wisconsin–Milwaukee, on the other hand, are those in which online assignments and activities replace 20% or more of regular face-to-face classroom time.

Cost-effectiveness has been projected by universities such as WSU due to cost savings in physical infrastructure. However, there are hidden costs connected with e-learning support and infrastructure that must be taken into account. In South African public universities, the cost-effectiveness of blended learning is no longer a problem, as it formerly was. A substantial sum of money has been set aside for future higher education.

Therefore, this study explored the perspectives of students from a technologically disadvantaged educational background on blended learning. WSU's blended learning strengths and opportunities for improvement are examined by the researcher. The aim was to determine more about students' perspectives of blended learning and the help they've received from the institution, as well as their perceptions of the facilities available and their continuous engagement with blended learning. Furthermore, when a blended learning model is used as a tool to affect knowledge, the findings from the study may provide Cost Accounting 2 teachers with the chance to dramatically improve the quality of Cost Accounting 2. Furthermore, based on students' insights into their learning experiences, analysing the strengths and flaws that could lead to e-learning upgrades. According to a recent survey, students' acceptance of online learning is growing among those who have used it because they see it as a more flexible way to learn that takes less time and allows them to learn from the comfort of their own homes (Aristovnik *et al*., 2020:6).

2.3.3 Generation Z (Gen.Z)

Grace-Bridges (2019:80) pointed out that irrespective of the HEIs readiness, Gen. Z has entered the university. The use of technology is one of the contributing factors to stimulate their learning. In accommodating their needs many institutions started to embrace the use of technology in learning (Beukes *et al.*, 2018:27) The previous University of Pretoria blended learning research focused on comparing traditional and blended learning modalities, rather than on students from technologically disadvantaged educational backgrounds transitioning from traditional to mixed learning (Herdan 2012:2; Beukes *et al.*, 2018:27; Nkhoma *et al.*, 2019:22 -324; Fortin *et al.*, 2019:354).

Since the general age of first-year students is nineteen years, the study assumes that most registered students at WSU are of this age. As a result, the purpose of this study was to determine how students perceive blended learning in Cost Accounting 2.

2.4 Conceptual framework

Mohammed and Hassan (2015:42) emphasise the need of providing a venue for students to share their views on blended learning. The information systems theory Technology Acceptance Model (TAM) in figure 2.2, which is well represented in Hoong *et al.*, (2017:149) is used in this investigation

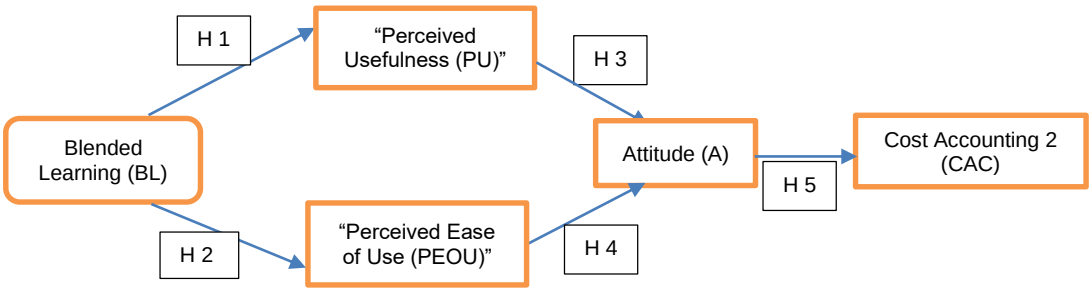

Figure 2-2 Technology acceptance model: the case of NHC: Accountancy

2.4.1 Technology Acceptance Model (TAM)

The TAM is a framework for determining why a new Information Technology is used or rejected (IT). As a result, it examines how people react to the adoption of a novel system. It accomplishes this by examining how users' perceptions, attitudes, and intentions regarding a new IT system are affected by a different method (Adams, Sumintono & Tan 2020:5).

Individual beliefs, also known as individual attitudes, concerning perceived usefulness and ease of use are the most important elements in technological acceptability (Kock 2015:2). According to the author, perceived usefulness is defined as the prospective user's subjective likelihood that using the new IT tool will improve their performance within the context of the organization, whereas perceived ease of use is defined as the prospective user's subjective likelihood that using the new system will not require much effort (Kock 2015:3; Lai 2017:26-27).

The addition of social impact and cognitive processes to the TAM model, such as the suggestion and launch of TAM 2, has reinforced this (Adams, Sumintono & Tan 2020:8). Traditionally, the TAM model has been utilized in cross-sectional studies (Diop *et al.,* 2019:3-4; Ehteshami 2017:4). In terms of the subjective norm, an individual will comply even if they disagree with a certain behaviour; this is more common in required systems, but not in a voluntary setting. TAM2 was extended as part of a larger effort to create a model that will aid in the adoption of a new model by identifying PU determinants (Im & Ha, 2015:98). The extended model's findings revealed that it works effectively in both voluntary and forced settings (Hoong *et al.,* 2017:1). In a mandatory context, the subjective norm is emphasized (Huang 2019:240).

TAM 3 includes additional variables of perceived ease of use and usefulness, such as individual differences, system characteristics, social effects, and supportive surroundings, to make the model more robust (Portz *et al.,* 2019:1). Because this study attempts to explore the impact of blended learning as a learning style on Cost Accounting 2, the TAM theoretical framework is relevant. The students' perceptions of the blended learning method's utility and convenience of use are also investigated. Finally, the framework will be utilised to look into how blended learning affects course creation and redesign.

2.5 Chapter Summary

This chapter examined the relevant literature to the study's aims to have a better understanding of the perspectives of other authors in this research area. It also revealed the disparity between

what is already known and what is being generated. Perception is a broad term that describes how people perceive and comprehend the world around them. Perception is defined in a variety of ways by social scientists. As a result, picking a suitable definition of perception for this study is crucial.

To summarise, the study defined perception as a mental process of obtaining meaningful information from stimuli and focusing attention on specific things while being influenced by the social and cultural milieu of the investigation. In blended learning, students' attitudes and behaviours reflect their impressions of the learning environment. As a result of their experiences, culture, and personality, people will always interpret things differently. Not only do our attitudes and behaviours depend on how we see things, but so does how we see other people. As a result, students' impressions reflect their expectations for future behaviour and instructional approaches, as well as the other way around. As a result, studying students' perspectives on blended learning at higher education institutions would help researchers better understand how they learn and teach in this new context.

To contain the escalating epidemic of COVID-19 transmission among their citizens, most countries enforced a full or partial lockdown within their borders. Several education ministries throughout the world have taken dramatic measures to decrease face-to-face contact between students and faculty, advising higher education institutions to transfer all academic teaching online. As a result, in the middle of the first semester of 2020, all face-to-face academic activities were discontinued, and all academic activities were shifted to virtual in order to prevent disrupting the delivery of lectures in academic institutions such as colleges and universities.

The next chapter presents the study's techniques, procedures, and data analyses in detail.

CHAPTER THREE:

RESEARCH METHOD

3.0 Chapter overview

This chapter presents the research methodology used in this study by describing the research paradigm adopted, the research design employed, the target population, sampling technique used, measuring instrument, data analysis, pretesting, validity, and reliability.

3.1 Research paradigm

This study employed a descriptive quantitative research method, which is used to describe the characteristics of a population being studied. It does not answer questions about how or when or why the characteristics occurred but explains phenomena by analysing numerical data using mathematically based methodologies, particularly statistics (Yilmaz 2013:315). This method was chosen because it allowed the researcher to capture the demographics of a population, measure how many participants participated in the research, examine attitudes and behaviours, or explain what is known anecdotally (Goertzen 2017:12). The total number of participants in this study is 110 (N = 110) which is a fair and acceptable representation of the total population.

3.1.1 Research questionnaire

According to Sekaran and Bougie (2010:779), a questionnaire is a tool for eliciting the sentiments, beliefs, experiences, perceptions, or attitudes of a group of people. The researcher on this study developed a questionnaire in a four Likert scale option to understand participant's perceptions, challenges, and suggested adjustments to Cost Accounting 2 module to comply with requirements of BL (see appendix C) Question 1 – 6 was biographical information followed by question 1.1 – 1.16 that addresses challenges experienced by participants on BL. After that, it was question 2.1 – 2.15 that talked to participants' perceptions on BL. Lastly, questions 3.1 – 3.10 allowed participants to contribute to Cost Accounting 2 design for BL mode.

3.2 Research design

The research design has been defined as a comprehensive framework detailing the research process utilised to achieve the research objectives. As stated by Fenton *et al*. (2020:10), the research design acts as a typical blueprint that will direct the methodological focus of a research project, as guided by the research questions. The design also serves as a roadmap that coherently and logically integrates various research components such as data collection, measurement, and analysis. Gao & Brink (2017:115) added that this design is used to study characteristics in a population to investigate probable solutions to a research problem. The choice of the appropriate research decision is informed by the research problem and the objectives to be addressed

The study design is descriptive in nature to describe a population, situation, or phenomenon accurately and systematically (McCombes & Van den Eertwegh 2019:10). This design is relevant for this study as it allows the researcher to collect large amounts of data and can evaluate user's satisfaction with participants' views; however, its limitation is that the researcher cannot make inferences about causality (McCombes &Van den Eertwegh 2019:10). Thus, a cross-sectional design will be employed because it is used to assess the burden of the needs of a population, and the data will be collected at one time; i.e., at the end of the semester.

3.3 Target population

The target population relates to the entire group of units from which the sample will be drawn. As stated by Gray, Grove and Sutherland (2016:9) the target population refers to the entire aggregation of respondents that meet the designated set of criteria. For this study, the target population is all the registered second-year NHC: Accountancy students who are enrolled for the Cost Accounting 2 module at WSU. There are approximately four hundred students in this course, and all are exposed to blended learning. The decision to focus on this cohort from WSU as mentioned in chapter one was motivated by the fact that Eastern Cape is one of the provinces that does not have enough resources and most students are from villages and poor backgrounds. Secondly, the instructional mode used in basic education is purely traditional face-to-face. Therefore, the study found it important to have the voice of students who are from this background.

Many of the studies that were carried out in blended learning focused on universities that are in developed cities, and their participants were from the middle class. As the researcher teaches

Cost Accounting 2 at the Buffalo City campus, it was easy to choose this particular cohort. Extending the study to additional campuses was also beneficial because it ensured that the study would not be limited to individuals who were the researcher's direct students.

3.4 Sampling method

The sampling process relates to selecting a sub-unit from the population that will be used to obtain information regarding the phenomenon of interest. (Sekaran & Bougie 2016:2). It is a statistical process involving the selection of a sample that is representative of the population of interest for observation (Franco & Vieira 2018:22). The process of determining the size of the sample is influenced by the desire to ensure that it is large enough to enable inferences and accurate generalizations can be made. The study undertook a census approach, that is, (n = 400). Census approach is adopted as it will allow the study to capture the students' perception on BL. This approach was effective in understanding the views, perceptions, and how the entire population feels about a newly introduced mode of learning in this study (Charman *et al.* 2015:40). As such, it included all students registered for the second year Cost Accounting 2. A class list was drawn from ITS (university system) to estimate the total number of participants across WSU.

Data collection relates to a systematic way of gathering information, which is relevant to the research purpose or questions (Gray *et al.,* 2016:118). Marchalot & Dureuil (2018:411– 415) stated that online surveys have become a popular method of data collection, and considering the COVID-19 induced restrictions on movements and lockdowns, this is the most appropriate method. The decision to utilise a questionnaire was also arrived at based on the understanding that the researcher will be able to ask questions that are consistent with the data analysis techniques adopted. Overall statistic report indicated a total of 208 responses and of this number only 119 have completed the questionnaire. The link was sent out a week before the semester break which was 05 July 2021 till 08 August 2021. A WhatsApp message to the group was constantly sent weekly to remind the participants not to forget to respond till the last week.

3.5 Recruitment process and data collection method

The participants were given the questionnaires at the end of the semester. The researcher designed an online survey in a Likert scale format using the Question Pro application to gather

the data and is chosen because it allows standardized and numerical data to be collected; then later will be analysed (Sarosa, 2019:117). The questionnaire was categorised into the following four sections to collect data from the respondents: (1) Demographic information, (2) Challenges experienced with BL, (3) Perceptions with BL, and (4) Cost Accounting 2 design with BL. The letter of information and informed consent (see Appendix C) to participate was attached to the online questionnaire.

The initial plan was to distribute the questionnaire physically to the participants. However, due to the outbreak of Covid-19, the online questionnaire became a safe option to collect the data as no contact or face-to-face lectures were permitted. On 8 March 2020, the South African government announced its first patient infected by Coronavirus. As a result, on 26 March 2020, the South African government suspended all face-to-face contact at universities and other educational institutes to control the virus outbreak. (Department of Co-operative Governance and Traditional Affairs 2020a). The online questionnaire was found to be a cheaper and faster way to administer than sending it by email or post. It allowed the researcher easier access to many potential participants and collected data on facts, attitudes, and beliefs (Taherdoost, 2020, p.38).

3.6 Data analysis

The data was captured on an excel spreadsheet and the Statistical Package for Social Science version 25 (SPSS v:25) package was utilised to analyse the data and assess student perceptions. The researcher made use of descriptive and inferential statistics to analyse the data. The process of data analysis has been defined as "the systematic organization and synthesis of the research data and the testing of research hypotheses, using those data" (Polit & Hungler 2016:6). It refers to "categorizing, ordering, manipulating and summarizing the data and describing them in meaningful terms" (Gao & Brink 2017:10). See figure 3.1

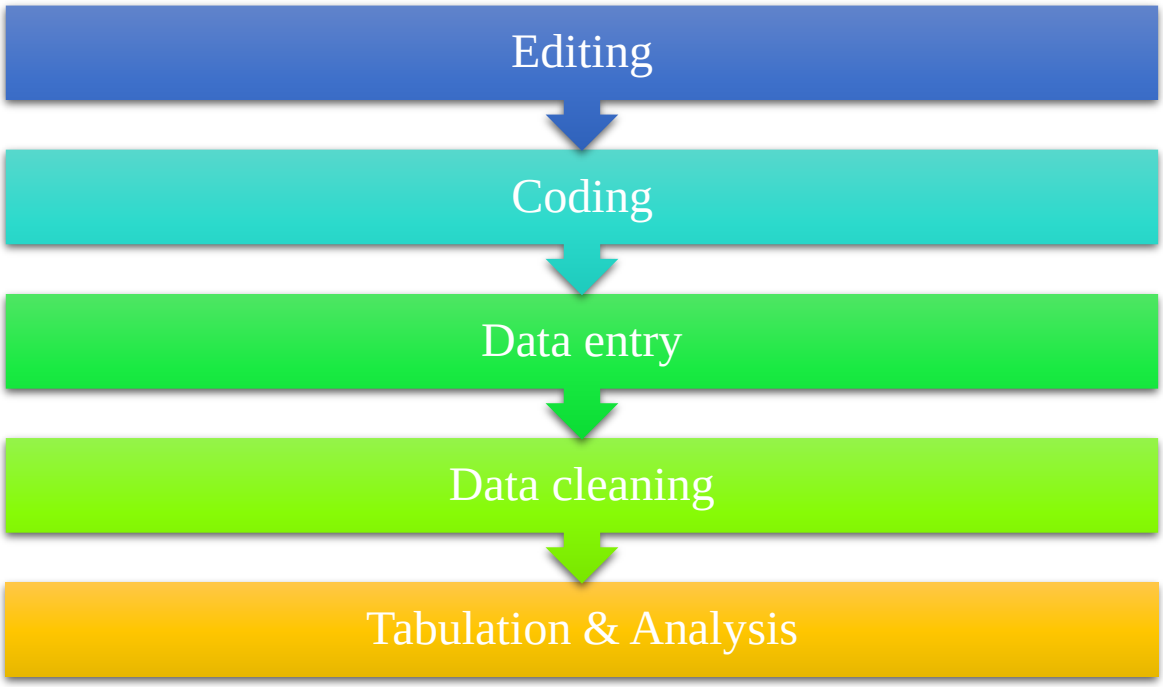

Figure 3-1 Data Analysis Procedure

In this study, the data analysis procedure highlighted in Figure 2 above was followed. In this process, raw data that was obtained from the questionnaires and tabulated in an Excel spreadsheet, cleaned for missing data and incorrect entries, before being imported into the SPSS program for further data analysis. A total of 119 responses was received. After cleaning the data the response rate was 110. This was deemed a suitable representation of the population. The data was analysed and correlated to check variances before transferred to excel graphs.

3.7 Reliability and validity

In research, reliability refers to the precision and accuracy of a research instrument measured in terms of the ability of a research instrument to produce comparable results in similar contexts. It relates to the extent to which a research instrument is dependable, consistent, stable, trustworthy, predictable, and faithful as synonyms for reliability. Polit & Hungler, (2019:18) state that validity refers to the degree to which the instrument measures what it is supposed to be measuring. In line with the above, Bond *et al.,* (2018:7) asserts that validity is foremost on the mind of those developing measures and that genuine scientific measurement is central in the minds of those who seek valid outcomes from assessment.

The following element of validity was observed in this case study:

- **Internal consistency** - In relation to Shuttleworth (2019:45) internal consistency reliability refers to the consistency with which a test's results are presented, ensuring that the numerous items measuring the various constructs produce consistent results. The focus groups in this study will be given identical questionnaires and given the same time frames to gather data. Cronbach's alpha coefficient will be utilized to assess the research instrument's dependability. A reliability of 0.70 or greater was considered suitable.

The questionnaire was piloted with ten students - not part of the main study - through a preliminary survey to clear and minimize ambiguity and confusion (Palmieri 2017:108). The results from the pilot study found that participants were not clear on the term ‘perception’ and a revision was made where necessary to eliminate the confusion. Feedback from the pilot participants contributed towards necessary revision; and this was essential to ensure the reliability of the measures and thereby meaningfulness of the data and knowledge unearthed through the study (Md Ariffin *et al.*, 2016:120).

3.8 Limitations

Due to resource constraints, the scope of the study was limited to second-year NHC: Accountancy students enrolled at WSU, not to the entire registered students. The nature of the research limits the study to one qualification, which is NHC: Accountancy at WSU students from the four sites which are Ibika Campus, Zamukulungisa Campus, Buffalo City Campus, and Queenstown Campus. Covid-19 limits the data collection mode to the online questionnaire as the face-to-face mode was prohibited due to lockdown regulations.

3.9 Ethical consideration

Malambe (2019:88) defines ethics as "*a code of behaviour considered correct*". This is a critical component of a research study, and the participants must be made aware of how the researcher took into consideration the research ethics. The researcher will ensure that fairness and justice are guaranteed by eliminating all potential risks. In addition, the respondents will be made aware of their right to withdraw from participating in this study. Other ethical issues that will be observed in this study include "informed consent, right to anonymity and confidentiality, right to privacy, justice, beneficence, and respect for persons" (Gao & Brink 2017:12). The researcher did comply with the process of the university to obtain ethical approval (Appendix A and B). Participants were asked to complete consent forms, which ensured their anonymity

and confidentiality. Leedy & Ormrod (2014:106-108) explain four categories of ethical issues which include, protecting participants from harm, voluntary and informed participation, participant's right to privacy; honesty with professionalism. The first page of the questionnaire made it clear that it was voluntarily to participate in this data collection process.

3.10 Chapter Summary

This chapter covered how data was collected from the selected participants before it was analysed. The instrument used was also explained in detail in this chapter. The selected methodology which is the quantitative method was outlined and deemed appropriate to guide the study to achieve its potential outputs which are, student voice will be heard on the use of a blended learning approach and contribute to the continuous improvement of the student learning experience. An analysis of the collected data is presented in the next chapter..

CHAPTER FOUR:

DATA ANALYSIS AND DISCUSSION OF FINDINGS

4.0 Chapter overview

The research methodology was discussed in the previous chapter. This chapter presents the study's overall findings and conclusions. SPSS version 27 was used to conduct the analysis. The researcher used descriptive statistics including graphical tables, pie charts, and bar charts to make data analysis easier and the results more visible. The study instrument's dependability was assessed using Cronbach's alpha coefficient. A descriptive technique was employed in conjunction with a non-parametric chi-square test of equal proportions to analyse differences in respondents' perceptions on various elements of the study instrument. The respondents' impressions of the study's theoretical variables and constructs were then subjected to a means analysis.

In order to identify whether parametric or non-parametric tests should be employed for inferential analysis, a normality test was conducted first. To establish the participants' and students' impressions of the blended learning difficulties, the mean responses were subjected to a descriptive analysis, which comprised a one-sample Wilcoxon signed-rank test and a one-sample T-test. The prevailing construct/s that exist within the blended learning problems and student views of blended learning was determined using Friedman's two-way ANOVA test. It was also vital to determine whether there was a direct link between students' impressions of blended learning and the challenges they faced. This was determined using a non-parametric Spearman's Rho correlation coefficient (two-tailed test).

4.1 Internal consistency

Table 4-1 Analysis of Reliability

Reliability analysis

Main Theoretical Variables	Valid N	Items Used	Cronbach's α
All constructs	110	41	0.917**
1. Blended Learning Challenges	108	16	0.724**
2. Student Perceptions on Blended Learning	106	15	0.903**
3. Blended Learning Course Design	101	10	0.805**

**Significantly acceptable reliability

Table 4.1 shows the results of the data collection instrument's internal consistency test. The study instrument's dependability was assessed using Cronbach's alpha coefficient. Dependability of 0.70 or more is deemed acceptable. The Cronbach's alpha for the scales, which are blended learning problems (alpha = 0.724), student perceptions of blended learning (alpha = 0.903), and blended learning course design (alpha = 0.805), reveal acceptable reliability coefficients for the research instruments. The study instrument's overall Cronbach's alpha was 0.917, indicating high reliability.

4.2 Section A: Biographical data of respondents

Before delving deeper into the data, basic distributions based on the study's biographical profile were run. The biographical factors in the study were documented using a descriptive method (see Table 4.2 below). The respondents indicated that the sample was made up of rural South Africans in their responses.

Table 4-2 Descriptive statistics for biographical variables

Variable	Levels	df	f	Valid %
Gender	Male	1	44	40.0
	Female		66	60.0
Race	Black	1	108	98.2
	White		2	1.8
Age	18 to 20 years	4	25	22.7
	21 to 25 years		66	60.0
	26 to 30 years		12	10.9
	31 to 35 years		6	5.5
	36 years and above		1	0.9
Home language	Xhosa	2	104	95.4
	English		1	0.9
	Zulu		4	3.7

N=110

4.2.1 The descriptive statistics of the biographical data are represented graphically and described below. Gender distribution of percentages

Figure 4.1 depicts the gender of the respondents. Many of the respondents (60.0%, n = 66) were female, while male respondents comprised 40.0% of the respondents (n = 44).

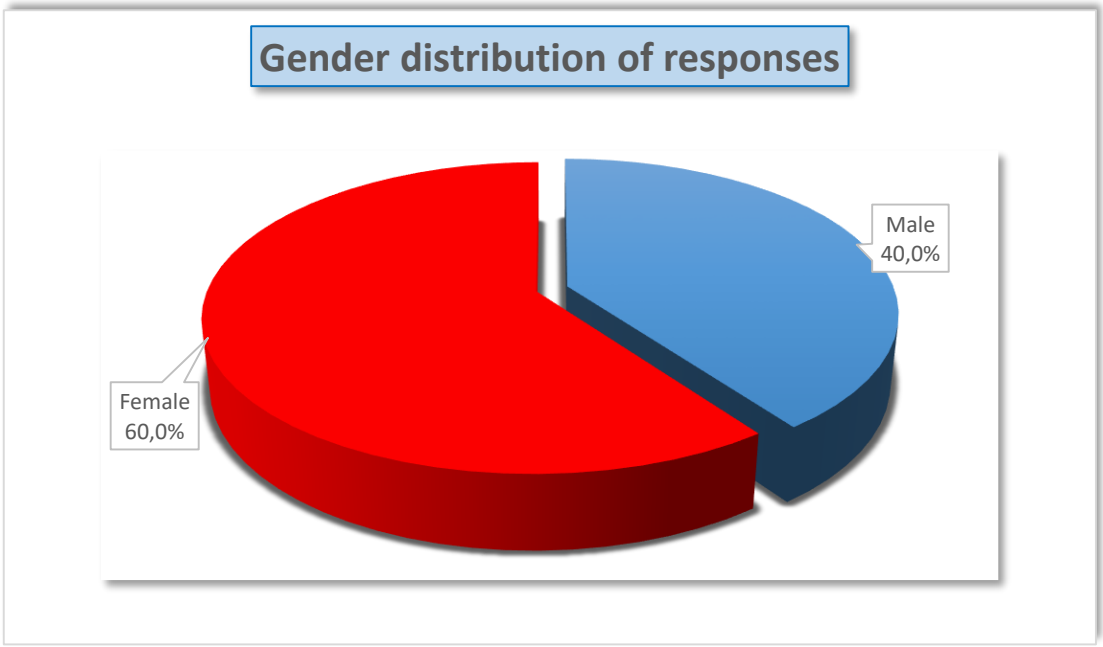

Figure 4-1 Gender distribution of responses

4.2.2 Race-based percentage distribution

The race-based percentage distribution is depicted in Figure 4.2. According to the graph, the bulk of respondents (98.2 percent; n = 108) are Black Africans, with only two White respondents (1.8 percent). There were no additional races in the sample.

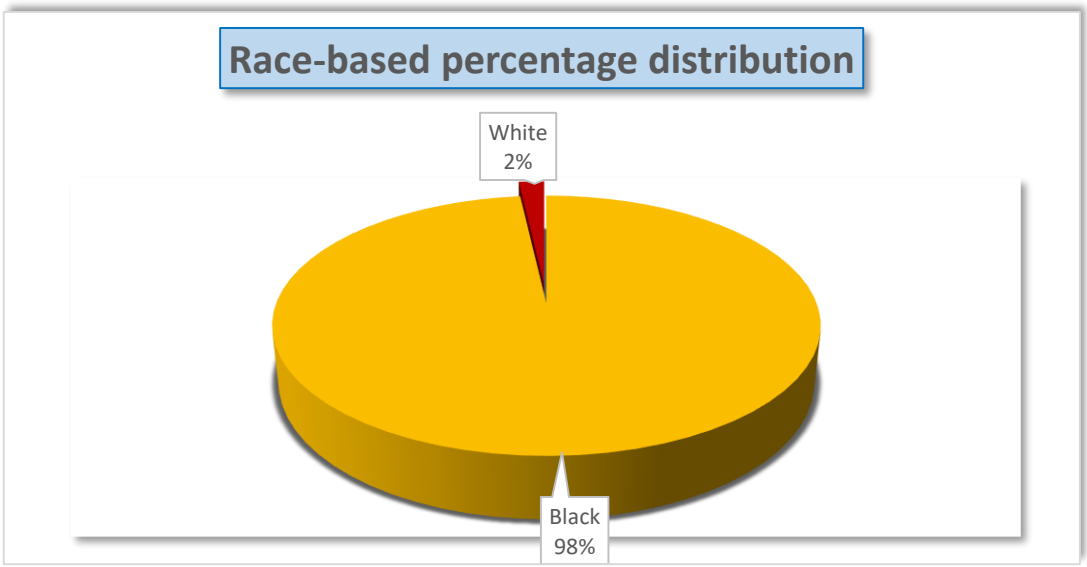

Figure 4-2 Race-based percentage distribution

4.2.3 Age distribution of percentages

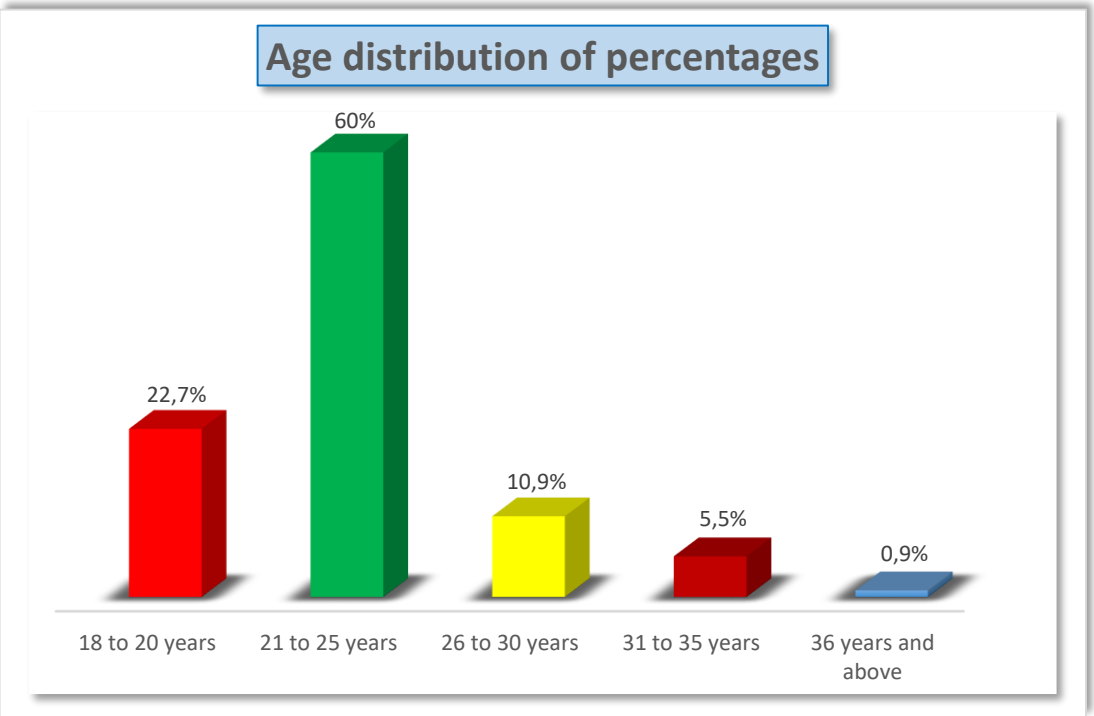

Figure 4-3 Age distribution of percentage

The distribution of respondents by age is depicted in Figure 4.3. The bulk of respondents (60.0 percent, n = 66) are between the ages of 21 and 25, with 22.7 percent (n = 25) between the ages of 18 and 20. Twelve respondents (10.9 percent) are between the ages of 26 and 30, while only one (0.9 percent) is between the ages of 36 and above. This demonstrates that Gen.Z is the university intake mentioned in the literature.

4.2.4 Distribution of percentages by home language

Figure 4.4 shows that most of the respondents (95.4%, n = 104) were isiXhosa speaking. On the other hand, 3.7% (n = 4) reported that their home language was isiZulu, whilst only one (0.9%) respondent reported English as a home language.

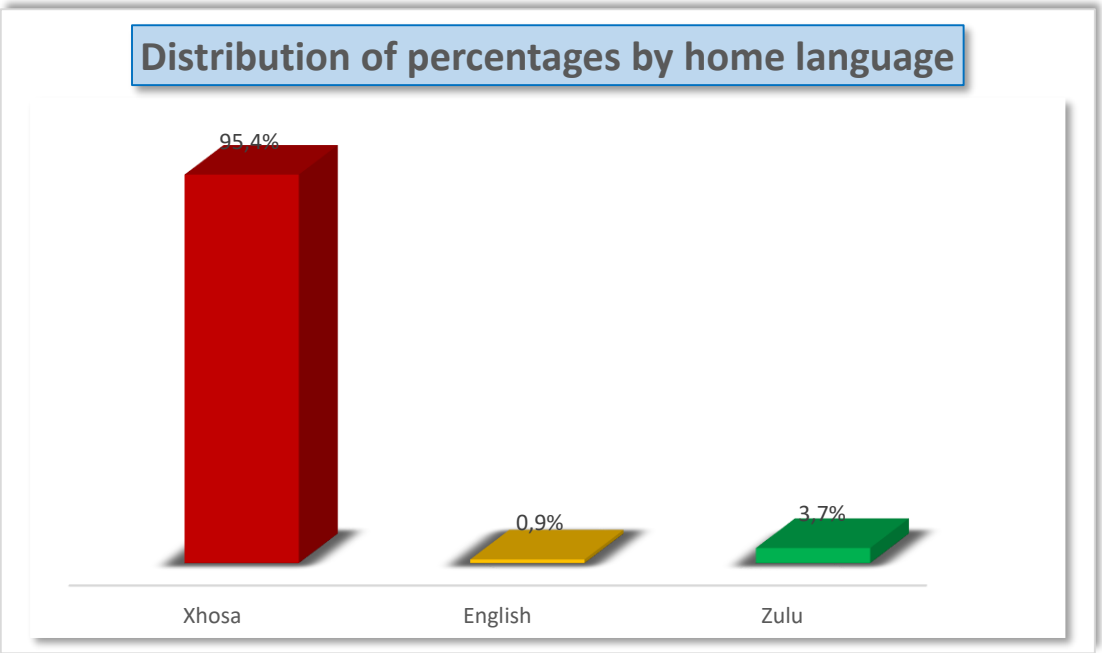

Figure 4-4 Distribution of percentages by home language

4.3 Section B Descriptive and inferential study of respondents' perceptions of the research instrument in general.

4.3.1 . The general perception of participants regarding blended learning challenges.

The general view of participants about blended learning challenges was determined using a non-parametric Chi-square test for equality of proportions. This test analyses show respondents answered to several items on the study instrument to see whether there are any significant changes. This was done to investigate the issues that students from underserved technological backgrounds face when it comes to blended learning. This section was created to answer the following research question in order to achieve this goal:

Research question 1: What challenges do students from a technologically disadvantaged background experience with blended learning?

The frequency and percentages of how the respondents regarded various factors were assessed in a descriptive analysis to determine the general perception of participants regarding blended

learning challenges. The items were graded on a 4-point Likert scale, with 1 indicating strong disagreement and 4 indicating strong agreement. The data was adjusted before analysis, and all items were coded and written so that higher ratings (3-Agree and 4-Strongly Agree) indicate that respondents agree that the item is a difficulty to blended learning. We then developed themes for the blended learning challenges, which are (1) Access to Internet, (2) Access to Learning Resources, (3) Access to Library Resources, (4) Prior Online Learning and Training, and (5) COVID-19 Restrictions. The descriptive analysis of each challenge is presented below.

4.3.1.1 Blended learning challenges: Access to the internet

The data show that many of the participants disagreed on most of the items reflecting participants' overall perceptions of internet availability as a blended learning problem. As a result, most students disagreed with the assertions that they do not have dependable internet access or that they do not have access to course materials over the internet. On the other hand, many respondents felt that efficient internet facilities, such as public libraries and internet cafes, are few where they live.

Table 4-3 Participants' general perceptions of internet availability as a blended learning problem are shown by frequencies and percentages.

Do you agree with the remarks below?	SD	D	A	SA
I do not have reliable access to the internet	n = 18 (16.4%)	n = 66 (60.0%)	n = 17 (15.5%)	n = 9 (8.2%)
I do not have access to course materials online over the internet	n = 27 (24.5%)	n = 74 (67.3%)	n = 6 (5.5%)	n = 3 (2.7%)
Where I live there is extremely limited access to efficient internet facilities such as public libraries and internet cafes	n = 10 (9.1%)	n = 28 (25.5%)	n = 42 (38.2%)	n = 30 (27.3%)

N=110, Statements were rated on a 4-point scale from 1 (strongly disagree) to 4 (strongly agree).

To check if there was any statistically significant evidence to suggest the general view of the participants with statistical certainty, a non-parametric Chi-square test of equal proportions was utilized. To do this, the 4-point Likert scale was decreased to a 2-point Likert scale. Thus, 1-strongly disagree (SD) and 2-disagree (D) were combined to become 1-Disagree, whereas 4-strongly agree (SA) and 3-agree (A) were combined to form 2-Agree. To examine if the proportions of the different established categories differed, the Chi-square test was utilised Table 4.4 and Figure 4.5 illustrate the results of the Chi-square tests, respectively. Most of the participants (n = 84; 76.4 percent) reported having a reliable internet connection, which was statistically significant (Chi-square = 30.582; $p < 0.0001$). The Chi-square test revealed

statistically significant evidence (Chi-square = 76.945; = 0.0001) that many of the participants (n = 101; 91.8 percent) have internet access to course materials (Chi-square = 76.945; = 0.0001). The findings also suggest that where most students live there is limited access to efficient internet facilities such as public libraries and internet cafes (Chi-square = 10.509; p = 0.001).

Table 4-4 Non-parametric Chi-square results on participants' general perceptions of internet access as a blended learning obstacle.

Item	Do you agree with the following statements?	Disagree	Agree	Chi-Square	p-value
1	I do not have reliable access to the internet	n = 84 (76.4%)	n = 26 (23.6%)	30.582	<0.0001*
2	I do not have access to course materials online over the internet	n = 101 (91.8%)	n = 9 (8.2%)	76.945	<0.0001*
3	Where I live there is limited access to efficient internet facilities such as public libraries and internet cafes	n = 38 (34.5%)	n = 72 (65.5%)	10.509	0.001*

N=110, (*) - Statistically significant differences (at Alpha = 0.05). Statements were rated on a 2-point scale from 1 (disagree) and 2 (agree).

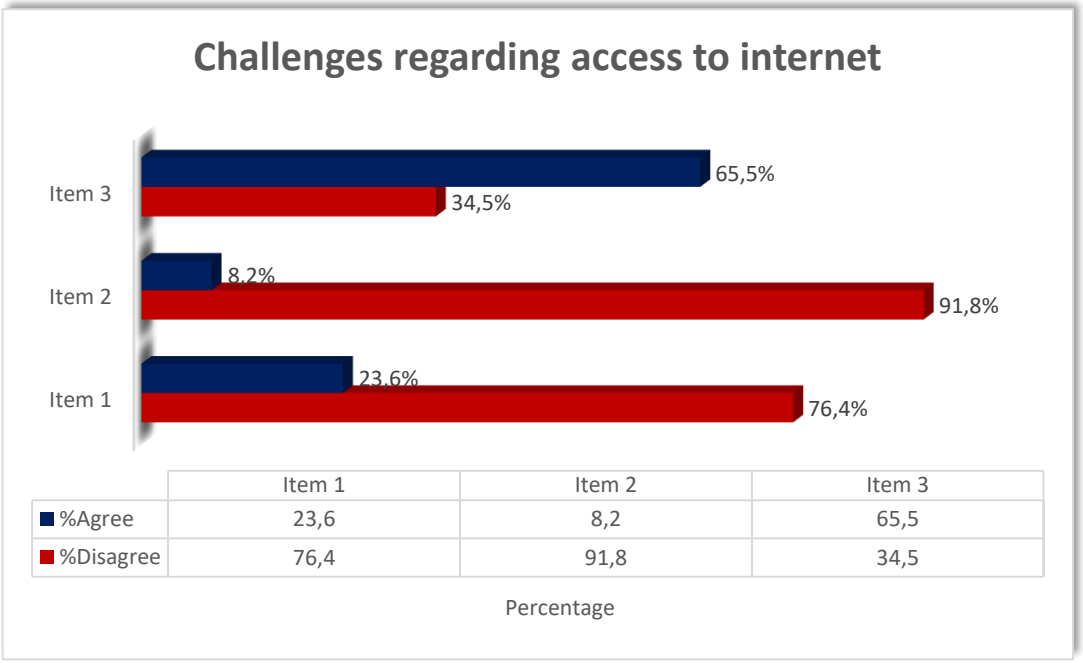

Figure 4-5 General student's perception of access to the internet as a blended learning challenge.

4.3.1.2 Blended learning challenges: Access to learning resources

The frequency and percentage distributions reveal that many of the participants disagreed on most items measuring the general perception of participants regarding access to learning

resources as a blended learning challenge (see Table 4.5). Thus, most students disagreed with the statements that they do not have access to tutors/lecturers, as well as that they do not have sufficient access to different forms of media such as audio and videos. The data also suggested that most students reported that blended learning gives access to enough resources at my university as well as that blended learning gives access to quality resources to learn at my university. However, they were conflicting results when students were responding to the statement that learning of Cost Accounting 2 through the blended model is not efficient. This may be due to the fact that the participants are from technologically education disadvantaged backgrounds, and they are not used to BL mode, hence the resistance. At the same time, others are willing to embrace the move as they pay more attention to its benefits.

Table 4-5 Participants' general perceptions of access to learning resources as a blended learning problem are represented by frequencies and percentages.

Do you agree with the following statements?	**SD**	**D**	**A**	**SA**
As part of blended learning, I do not have access to tutors/lecturers	n = 27 (24.5%)	n = 66 (60.0%)	n = 15 (13.6%)	n = 2 (1.8%)
As part of blended learning, I do not have sufficient access to different forms of media such as audio and videos	n = 29 (26.4%)	n = 70 (63.6%)	n = 9 (8.2%)	n = 2 (1.8%)
Blended learning does not give access to enough resources at my university.	n = 15 (13.6%)	n = 58 (52.7%)	n = 32 (29.1%)	n = 5 (4.5%)
Blended learning does not give access to quality resources to learn at my university.	n = 14 (12.8%)	n = 61 (56.0%)	n = 29 (26.6%)	n = 5 (4.6%)
Learning of Cost Accounting 2 through the blended model is not efficient	n = 16 (14.8%)	n = 32 (29.6%)	n = 40 (37.0%)	n = 20 (18.5%)

N=110, Statements were graded on a scale of 1 (strongly disagree) to 4 (strongly agree) (strongly agree).

To check if there was any statistically significant evidence to suggest the general view of the participants with statistical certainty, a non-parametric Chi-square test of equal proportions was utilised. According to Table 4.6, many students have access to tutors/lecturers (n = 93; 84.5 percent; Chi-square = 52.509; p = 0.0001). There is also enough data to demonstrate that most students have ample access to various forms of media such as audio and videos as part of blended learning (n = 99; 90.0 percent; Chi-square = 70.400; p = 0.0001). Majority of the participants also reported that blended learning gives access to enough resources at the university (n = 73; 66.4%; Chi-square = 11.782; p = 0.001). In addition, the Chi-square test suggests that blended learning does give access to quality resources to learn at the university. (n = 75; 68.8%; Chi-square = 15.422; p = <0.0001). However, the respondents neither agreed nor disagreed that learning of Cost Accounting 2 through the blended model is not efficient (Chi-square = 1.333; p = 0.248). The findings are summarised graphically in Figure 4.6. Cost

Accounting 2 is practical; therefore, the participants find the additional resources found under this BL mode to be more beneficial to their learning. The study also assumes that the dilemma found is because of the participant's background.

Table 4-6 Non-parametric Results of the Chi-square test on participants' general perceptions of availability to learning resources as a blended learning issue.

Item	Do you agree with the following statements?	Disagree	Agree	Chi-Square	Exact p-value
1	As part of blended learning, I do not have access to tutors/lecturers	n = 93 (84.5%)	n = 17 (15.5%)	52.509	<0.0001*
2	As part of blended learning, I do not have sufficient access to different forms of media such as audio and videos	n = 99 (90.0%)	n = 11 (10.0%)	70.400	<0.0001*
3	Blended learning does not give access to enough resources at my university.	n = 73 (66.4%)	n = 37 (33.6%)	11.782	0.001*
4	Blended learning does not give access to quality resources to learn at my university.	n = 75 (68.8%)	n = 34 (31.2%)	15.422	<0.0001*
5	Learning of Cost Accounting 2 through the blended model is not efficient	n = 48 (44.4%)	n = 60 (55.6%)	1.333	0.248

N=110, (*) - Differences that are statistically significant (at Alpha = 0.05). The statements were graded on a two-point scale of 1 (disagree) to 2 (agree) (agree).

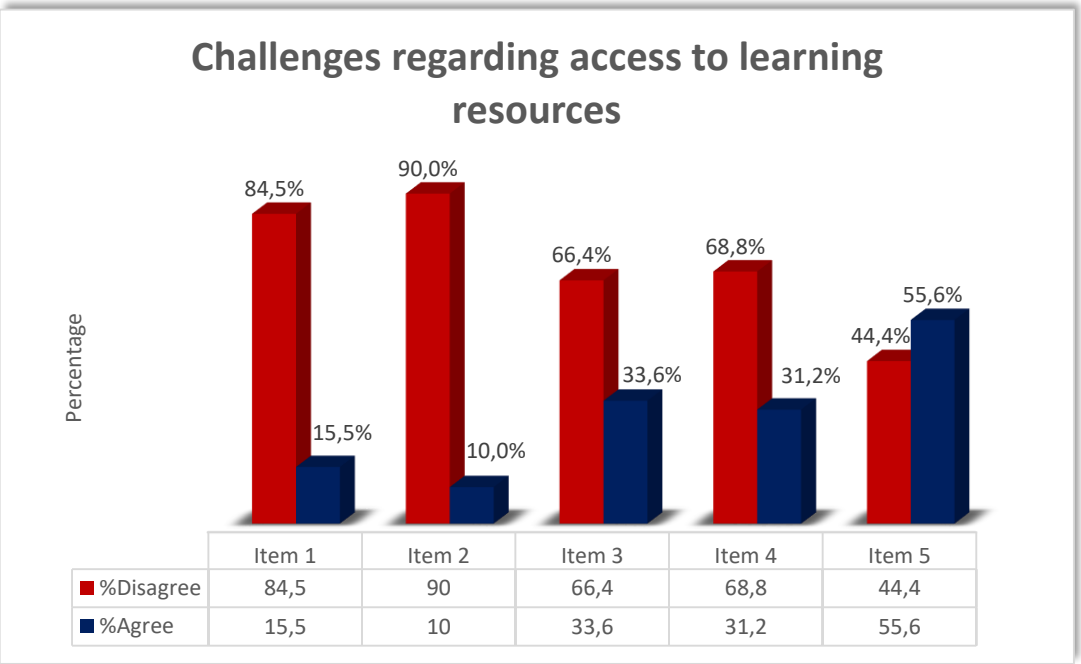

Figure 4-6 General student's perception of access to learning resources as a blended learning challenge.

4.3.1.3 Blended learning challenges: Access to library resources and prior online learning and training

The descriptive analysis reveals that the respondents had mixed perceptions on most items measuring the general perception of participants regarding access to library resources and prior online learning and training (see Table 4.7). Thus, an equal number of students disagreed and agreed that there are no sufficient library resources available online for Cost Accounting 2 students to use. This was also a similar case when asked whether, in their previous learning (school level), they did not make use of technology as a learning tool. Many of the participants disagreed that there are no accessible library resources available online for Cost Accounting students to use. However, the frequencies and percentages tend to suggest that before the use of online platforms for learning, there was enough training provided by the institution.

Table 4-7 Participants' perceptions of access to library resources, as well as prior online learning and training, are represented by frequencies and percentages.

Do you agree with the remarks below?	SD	D	A	SA
There are no sufficient library resources available online for Cost Accounting 2 students to use.	n = 16 (14.8%)	n = 39 (36.1%)	n = 39 (36.1%)	n = 14 (13.0%)
There are no accessible library resources available online for Cost Accounting 2 students to use	n = 16 (14.8%)	n = 48 (44.4%)	n = 32 (29.6%)	n = 12 (11.1%)
In my previous learning (school level), I did not make use of technology as a learning tool?	n = 19 (17.6%)	n = 35 (32.4%)	n = 32 (29.6%)	n = 22 (20.4%)
Before the use of online platforms for learning, there was not enough training provided by the institution.	n = 25 (23.1%)	n = 53 (49.1%)	n = 22 (20.4%)	n = 8 (7.4%)

N=110, Statements were graded on a scale of 1 (strongly disagree) to 4 (strongly agree) (strongly agree).

To check if there was any statistically significant evidence to suggest the general view of the participants with statistical certainty, a non-parametric Chi-square test of equal proportions was utilized. Table 4.8 shows the results of the Chi-square testing. The institution presented statistically significant evidence that proper training was offered prior to the use of online learning platforms ($n = 78$; 72.2 percent; Chi-square = 21.333; $p < 0.0001$). There was, however, statistically significant evidence that respondents did not agree or disagree that there are insufficient library resources available online for Cost Accounting 2 students to use (Chi-square = 0.037; $p = 0.847$) or that there are no accessible library resources available online for Cost Accounting 2 students to use (Chi-square = 3.704; $p = 0.054$). Finally, the data revealed significant evidence that an equal number of students agreed and disagreed that they did not

use technology as a learning tool in their previous learning (school level) (Chi-square = 0.000; p = 1.000). The graphical presentation is shown in Figure 4.7.

Table 4-8 Non-parametric Results of Chi-square tests on participants' general perceptions of library resources and past online learning and training.

Item	Do you agree with the remarks below?	Disagree	Agree	Chi-Square	p-value
1	There are no sufficient library resources available online for Cost Accounting 2 students to use.	n = 55 (50.9%)	n = 53 (49.1%)	0.037	0.847
2	There are no accessible library resources available online for Cost Accounting 2 students to use	n = 64 (59.3%)	n = 44 (40.7%)	3.704	0.054
3	In my previous learning (school level), I did not make use of technology as a learning tool?	n = 54 (50.0%)	n = 54 (50.0%)	0.000	1.000
4	Before the use of online platforms for learning, there was no enough training provided by the institution.	n = 78 (72.2%)	n = 30 (27.8%)	21.333	<0.0001*

N=110, (*) - Differences that are statistically significant (at Alpha = 0.05). The statements were graded on a two-point scale of 1 (disagree) to 2 (agree) (agree).

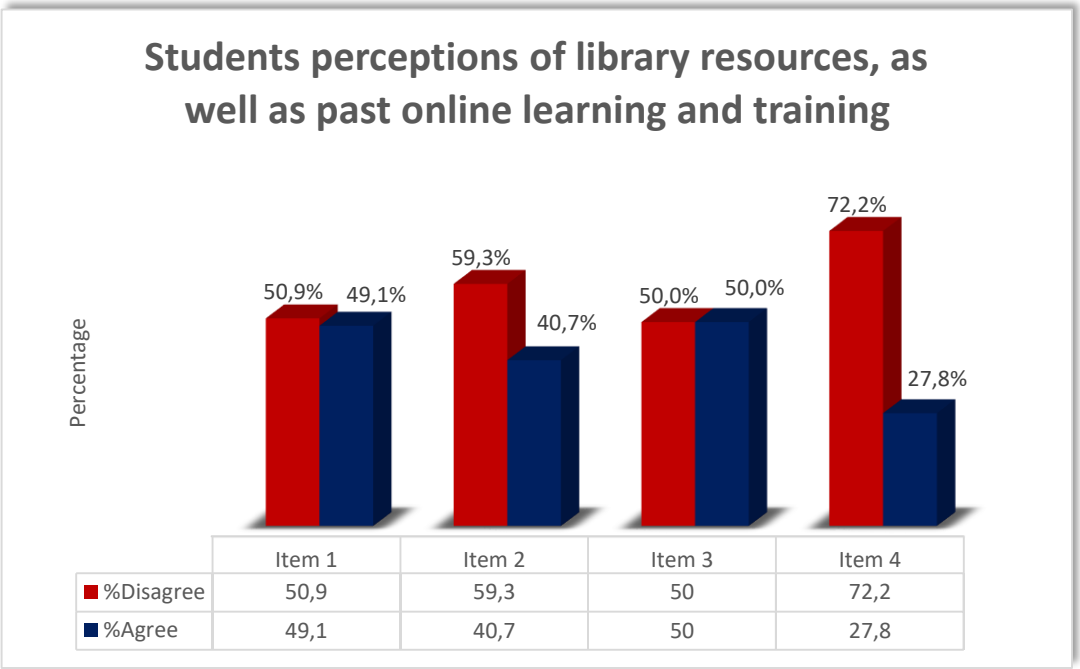

Figure 4-7 Student's perceptions of library resources, as well as past online learning and training.

4.3.1.4 Blended learning challenges: COVID-19 restrictions

The frequency and percentage distributions show that most of the participants agreed on most of the items reflecting participants' general perceptions of COVID-19 limits as a blended learning obstacle. As a result, the majority of students felt that there are insufficient library resources available online for Cost Accounting 2 students to utilise and that there are no accessible library resources available online for Cost Accounting 2 students to use. According to the findings, the majority of students reported that the covid-19 epidemic has affected their teaching and learning processes. However, the respondents claimed that the university is providing enough resources (such as data and laptops) for online learning during the COVID-19 epidemic, according to the descriptive analysis.

Table 4-9 Participants' general perceptions of COVID-19 limits as a blended learning difficulty are represented by frequencies and percentages.

Do you agree with the remarks below?	SD	D	A	SA
Covid-19 pandemic limited the physical visit to internet café.	n = 3 (2.8%)	n = 11 (10.2%)	n = 50 (46.3%)	n = 44 (40.7%)
The covid-19 pandemic reduces face to face as a part of blended learning.	n = 2 (1.9%)	n = 2 (1.9%)	n = 48 (44.4%)	n = 56 (51.9%)
The teaching and learning process changes due to the covid-19 pandemic.	n = 4 (3.7%)	n = 1 (0.9%)	n = 39 (36.1%)	n = 64 (59.3%)
The school is not providing enough resources (such as data and laptops) for online learning during the COVID-19 pandemic.	n = 46 (42.6%)	n = 47 (43.5%)	n = 10 (9.3%)	n = 5 (4.6%)

N=110, Statements were graded on a scale of 1 (strongly disagree) to 4 (strongly agree) (strongly agree).

To determine if there was any statistically significant evidence to suggest the general view of the participants with statistical certainty, a non-parametric Chi-square test of equal proportions was utilised. In Table 4.10, the results of the Chi-square tests are reported. There was statistically substantial evidence that the Covid-19 epidemic reduced the number of people visiting an internet café (n = 94; 87.0 percent; Chi-square = 59.259; p = 0.0001). The covid-19 epidemic also reduced face-to-face learning as part of blended learning (n = 104; 87.0 percent; Chi-square = 92.93; p = 0.0001). The teaching and learning process had also changed because of the covid-19 epidemic (n = 103; 95.4 %; Chi-square = 88.926; p = 0.0001). Finally, the Chi-square test indicates that during the COVID-19 pandemic, the school is providing sufficient resources (such as data and laptops) for online learning (Chi-square = 856.333; p = 0.0001). Figure 4.8 depicts the graphical presentation.

Table 4-10 Results of a non-parametric Chi-square test on participants' general perceptions of COVID-19 constraints as a blended learning challenge.

Item	Do you agree with the remarks below?	Disagree	Agree	Chi-Square	Exact p-value
1	Covid-19 pandemic limited the physical visit to internet café.	n = 14 (13.0%)	n = 94 (87.0%)	59.259	<0.0001*
2	The covid-19 pandemic reduces face to face as a part of blended learning.	n = 4 (3.7%)	n = 104 (96.3%)	92.593	<0.0001*
3	The teaching and learning process changes due to the covid-19 pandemic.	n = 5 (4.6%)	n = 103 (95.4%)	88.926	<0.0001*
4	The school is not providing enough resources (such as data and laptops) for online learning during the COVID-19 pandemic.	n = 93 (86.1%)	n = 15 (13.9%)	56.333	<0.0001*

N=110, (*) - Differences that are statistically significant (at Alpha = 0.05). The statements were graded on a two-point scale of 1 (disagree) to 2 (agree) (agree).

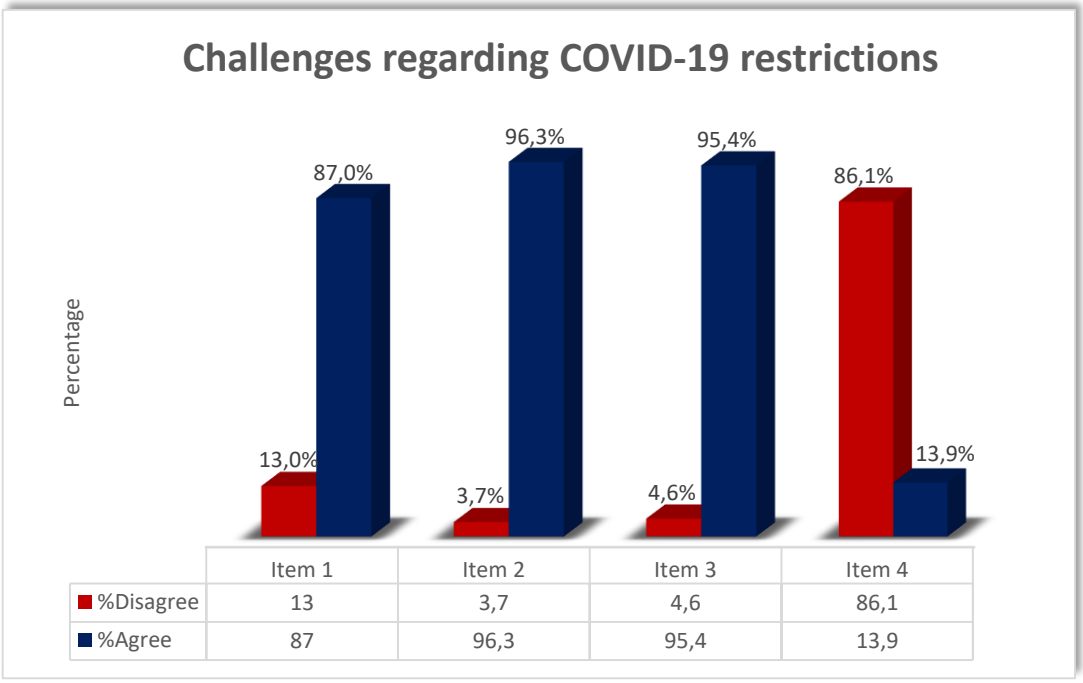

Figure 4-8 General student's perception of COVID-19 restrictions as a blended learning challenge.

4.3.2 The general perception of participants regarding students' perceptions on blended learning.

To establish the general perception of participants regarding students' perceptions on blended learning a non-parametric Chi-square test coupled was initially conducted. This was in order to explore the student's perceptions of blended learning from a technologically disadvantaged background. Differences that are statistically significant (at Alpha = 0.05). The statements were graded on a two-point scale of 1 (disagree) to 2 (agree) (agree).

- How do Cost Accounting 2 students perceive blended learning?

A descriptive analysis was carried out by calculating the frequencies and percentages of how respondents assessed assorted items to determine the general perception of participants on blended learning. The items were also graded on a 4-point Likert scale, with 1 indicating strong disagreement and 4 indicating strong agreement. (1) Efficient and Effectiveness of Blended Learning, (2) Enhancement of Learning and Performance, and (3) Ease of Use were developed as topics for the students' impressions of blended learning. Each challenge's descriptive analysis is shown below.

4.3.2.1 Student perceptions on blended learning: Efficient and effectiveness of blended learning

The initial descriptive findings in Table 4.11 reveal that most of the participants were in agreement on all items measuring the general perception of participants regarding the efficiency and effectiveness of blended learning. The students agreed that the use of Wise-Up makes communication with lecturers effective as well as that they can freely ask questions through Wise-Up. The data also suggested that what the students do not finish in class, online information assists them to complete.

Table 4-11 Participants' general perceptions of the efficiency and effectiveness of blended learning are represented as frequencies and percentages.

Do you agree with the remarks below?	SD	D	A	SA
Using Wise-Up allows me to accomplish learning tasks more efficiently.	n = 2 (1.8%)	n = 11 (10.1%)	n = 65 (59.6%)	n = 31 (28.4%)
The use of Wise-Up makes communication with my lecturers effective.	n = 6 (5.5%)	n = 32 (29.4%)	n = 52 (47.7%)	n = 19 (17.4%)
I can freely ask questions through Wise-Up.	n = 12 (11.0%)	n = 32 (29.4%)	n = 45 (41.3%)	n = 20 (18.3%)
What I did not finish in class, online information assists me to complete.	n = 3 (2.8%)	n = 5 (4.6%)	n = 64 (58.7%)	n = 37 (33.9%)

N=110, Statements were graded on a scale of 1 (strongly disagree) to 4 (strongly agree) (strongly agree).

A non-parametric Chi-square test of equal proportions was used to see if there was any statistically significant evidence to imply the general opinion of the participants with statistical certainty. The Chi-square test results are provided in Table 4.12 below. Figure 4.9 depicts the graphical presentation. Most of the participants (n = 96; 88.1 %) believe Wise-Up helps them accomplish learning tasks more efficiently, according to statistical evidence (Chi-square = 63.202; $p < 0.0001$). The Chi-square test also revealed statistically significant evidence (Chi-square = 9.991; $p = 0.002$) that the majority of participants (n = 71; 65.1 %) agree that utilizing Wise-Up improves lecturer communication (Chi-square = 9.991; $p = 0.002$). Students can openly ask questions using Wise-Up (Chi-square = 4.046; $p = 0.044$), and what they didn't finish in class can be completed utilizing online content (Chi-square = 79.349; $p = 0.0001$).

Table 4-12 Non-parametric Chi-square statistics on participants' general impressions of blended learning's efficiency and efficacy.

Item	Do you agree with the remarks below?	Disagree	Agree	Chi-Square	p-value
1	Using Wise-Up allows me to accomplish learning tasks more efficiently.	n = 13 (11.9%)	n = 96 (88.1%)	63.202	<0.0001*
2	The use of Wise-Up makes communication with my lecturers effective.	n = 38 (34.9%)	n = 71 (65.1%)	9.991	0.002*
3	I can freely ask questions through Wise-Up.	n = 44 (40.4%)	n = 65 (59.6%)	4.046	0.044*
4	What I did not finish in class, online information assists me to complete.	n = 8 (7.3%)	n = 101 (92.7%)	79.349	<0.0001*

N=110, (*) - Differences that are statistically significant (at Alpha = 0.05). The statements were graded on a two-point scale of 1 (disagree) to 2 (agree) (agree).

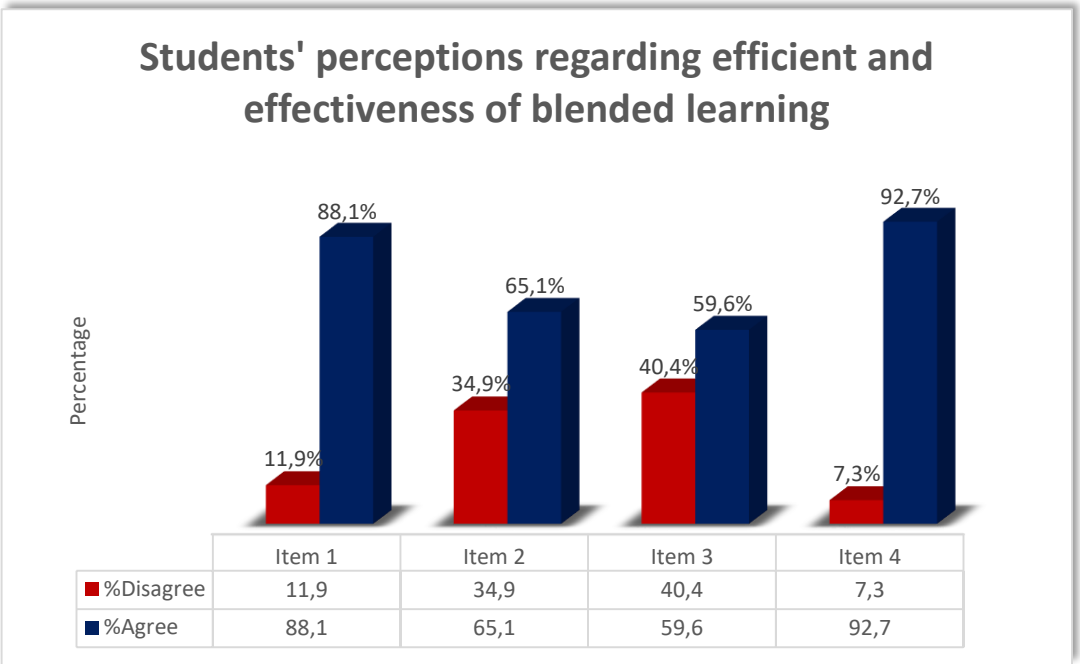

Figure 4-9 General student's perception on student perceptions on efficiency and effectiveness of blended learning.

4.3.2.2 Student perceptions on blended learning: Enhancement of learning and performance

The frequency and percentage distributions demonstrate that the majority of the items reflecting participants' general perceptions of learning and performance enhancement were agreed upon by the majority of the participants. As a result, many students believed that using Wise-Up has enhanced students' academic performance and that Wise-Up gives students different learning options. The data also suggested that using Wise-Up makes students learning more interesting and improves the learning experiences of students. Lastly, the frequency and percentage distributions show that the online announcements (SMS or email) serve as a good reminder of university activities during the lockdown period. The results are presented in Table 4.13 below.

Table 4-13 Frequencies and percentages on the general perception of participants on the enhancement of learning and performance.

Do you agree with the following statements?	SD	D	A	SA
The use of Wise-Up has improved my academic performance.	n = 3 (2.7%)	n = 17 (15.5%)	n = 55 (50.0%)	n = 35 (31.8%)
Wise-Up provides multiple ways of learning for me.	n = 3 (2.8%)	n = 24 (22.0%)	n = 53 (48.6%)	n = 29 (26.6%)
Using Wise-Up makes my learning more interesting.	n = 7 (6.4%)	n = 25 (22.9%)	n = 46 (42.2%)	n = 31 (28.4%)
I am positive that Wise-Up would improve my learning experiences as a student.	n = 6 (5.5%)	n = 17 (15.6%)	n = 52 (47.7%)	n = 34 (31.2%)
The online announcements (SMS or email) serve as a good reminder of university activities during the lockdown period.	n = 1 (0.9%)	n = 9 (8.3%)	n = 59 (54.1%)	n = 40 (36.7%)

N=110, Statements were rated on a 4-point scale from 1 (strongly disagree) to 4 (strongly agree).

A non-parametric Chi-square test of equal proportions was used to see if there was any statistically significant evidence to imply the general opinion of the participants with statistical certainty. Table 4.14 shows that many respondents (n = 90; 81.8 percent; Chi-square = 44.545; p = 0.0001) said that using Wise-Up enhanced their student's academic performance. There is also enough data to demonstrate that Wise-Up gives students with different approaches to learn (n = 82; 75.2 percent; Chi-square = 27.752; p = 0.0001). Majority of the participants also perceived that using Wise-Up makes learning more interesting (n = 77; 70.6%; Chi-square = 18.578; p = <0.0001). The Chi-square test also suggests that students are positive that Wise-Up would improve their learning experiences as students (Chi-square = 36.413; p = <0.0001). Lastly, the majority of the participants reported that online announcements (SMS or email) serve as a good reminder of school activities during the lockdown period (n = 99; 90.8%; Chi-square = 72.670; p = <0.0001). The findings are summarized graphically in Figure 4.10.

Table 4-14 Non-parametric Chi-square results on the general perception of participants on the enhancement of learning and performance.

Item	Do you agree with the following statements?	Disagree	Agree	Chi-Square	Exact p-value
1	The use of Wise-Up has improved my academic performance.	n = 20 (18.2%)	n = 90 (81.8%)	44.545	<0.0001*
2	Wise-Up provides multiple ways of learning for me.	n = 27 (24.8%)	n = 82 (75.2%)	27.752	<0.0001*
3	Using Wise-Up makes my learning more interesting.	n = 32 (29.4%)	n = 77 (70.6%)	18.578	<0.0001*
4	I am positive that Wise-Up would improve my learning experiences as a student.	n = 23 (21.1%)	n = 86 (78.9%)	36.413	<0.0001*
5	The online announcements (SMS or email) serve as a good reminder of school activities during the lockdown period.	n = 10 (9.2%)	n = 99 (90.8%)	72.670	<0.0001*

N=110, (*) - Differences that are statistically significant (at Alpha = 0.05). The statements were graded on a two-point scale of 1 (disagree) to 2 (agree) (agree).

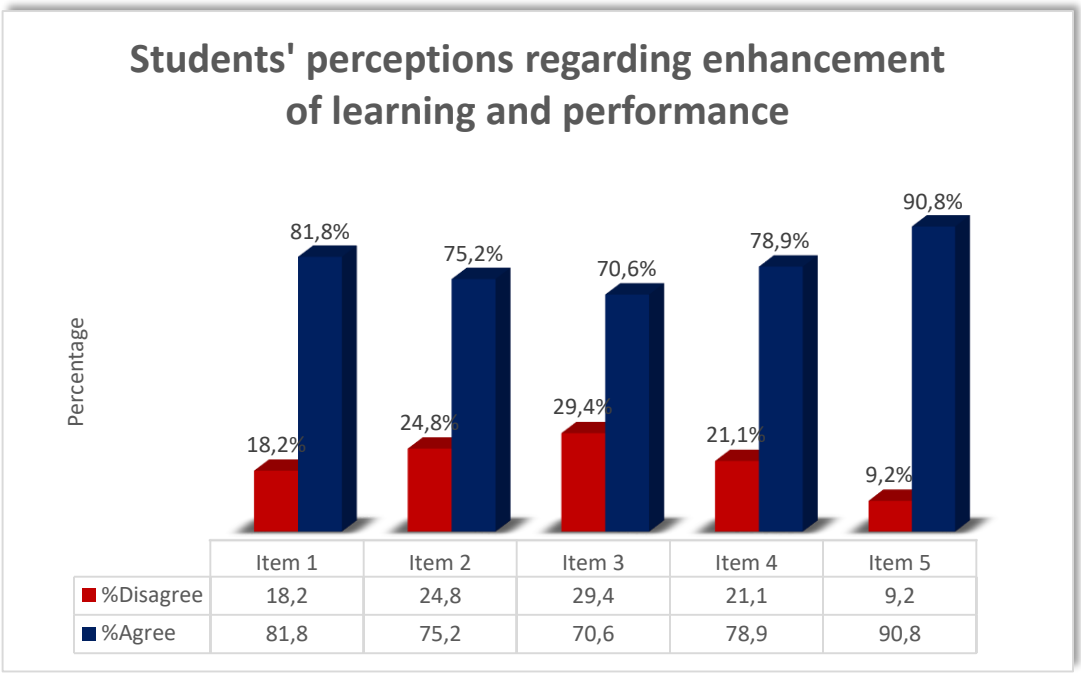

Figure 4-10 General student's perception on the enhancement of learning and performance.

4.3.2.3 Student perceptions on blended learning: Ease of use

The descriptive analysis demonstrates that all the questions reflecting participants' general perceptions of ease of use were agreed upon by the respondents (see Table 4.15). As a result, the majority of respondents stated that engaging with Wise-Up is simple and understandable and that students can use Wise-Up without any instruction. This was also a similar case where most respondents agreed that it is easy to become acquainted with Wise-up after a brief time of use and that students can use Wise-Up without technical support. The frequencies also show that students have the necessary skills for using Wise-Up and are comfortable in downloading and uploading files online.

Table 4-15 Participants' perceptions of the ease of use of blended learning are represented by frequencies and percentages.

Do you agree with the following statements?	SD	D	A	SA
Interacting with Wise-Up is clear and understandable.	n = 5 (4.6%)	n = 23 (21.1%)	n = 50 (45.9%)	n = 31 (28.4%)
I am able to use Wise-Up even with no training.	n = 1 (0.9%)	n = 19 (17.4%)	n = 52 (47.7%)	n = 37 (33.9%)
It is easy to become acquainted with Wise-up after a short time of use.	n = 0 (0.0%)	n = 18 (16.5%)	n = 64 (58.7%)	n = 27 (24.8%)
I can use Wise-Up without technical support.	n = 8 (7.4%)	n = 41 (38.0%)	n = 43 (39.8%)	n = 16 (14.8%)
I am comfortable downloading, uploading files online.	n = 1 (0.9%)	n = 14 (13.0%)	n = 64 (59.3%)	n = 29 (26.9%)
I have the necessary skills for using Wise-Up.	n = 0 (0.0%)	n = 20 (18.7%)	n = 62 (57.9%)	n = 25 (23.4%)

N=110, Statements were graded on a scale of 1 (strongly disagree) to 4 (strongly agree) (strongly agree).

To check if there was any statistically significant evidence to suggest the general view of the participants with statistical certainty, a non-parametric Chi-square test of equal proportions was utilized. Table 4.16 shows the results of the Chi-square tests. According to statistical data, many participants said interacting with Wise-Up was evident and understandable (n = 81; 74.3 percent; Chi-square = 25.771; p = 0.001). Furthermore, there was statistically significant evidence that the majority of respondents felt that students can utilize Wise-Up without any instruction (n = 89; 81.7 percent; Chi-square = 43.679; p = 0.0001). Many of the participants also perceived that it is easy to become acquainted with Wise-up after a short time of use (n = 91; 83.5%; Chi-square = 48.890; p = <0.0001). The data showed significant evidence to conclude that students are comfortable in downloading and uploading files online (Chi-square

= 56.333; p = <0.0001) as well as those students have the necessary skills for using Wise-Up (Chi-square = 41.953; p = <0.0001). The graphical presentation is shown in Figure 4.11.

Table 4-16 Non-parametric Chi-square statistics on participants' general perceptions of blended learning's ease of use.

Item	Do you agree with the following statements?	Disagree	Agree	Chi-Square	p-value
1	Interacting with Wise-Up is clear and understandable.	n = 28 (25.7%)	n = 81 (74.3%)	25.771	<0.0001*
2	I am able to use Wise-Up even with no training.	n = 20 (18.3%)	n = 89 (81.7%)	43.679	<0.0001*
3	It is easy to become acquainted with Wise-up after a brief time of use.	n = 18 (16.5%)	n = 91 (83.5%)	48.890	<0.0001*
4	I can use Wise-Up without technical support.	n = 49 (45.4%)	n = 59 (54.6%)	0.926	0.336
5	I am comfortable downloading, uploading files online.	n = 15 (13.9%)	n = 93 (86.1%)	56.333	<0.0001*
6	I have the necessary skills for using Wise-Up.	n = 20 (18.7%)	n = 87 (81.3%)	41.953	<0.0001*

N=110, (*) - Differences that are statistically significant (at Alpha = 0.05). The statements were graded on a two-point scale of 1 (disagree) to 2 (agree) (agree).

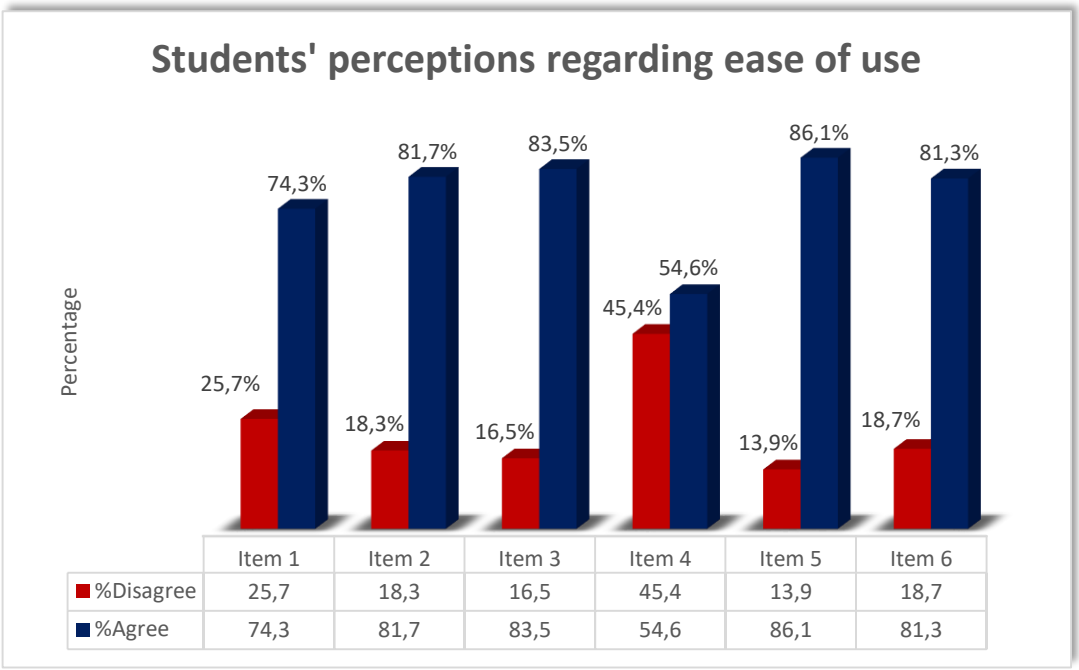

Figure 4-11 General student's perception on ease of use on blended learning.

4.4 Section C Means analysis of respondents' perceptions of theoretical variables and constructs in the study.

4.4.1 Normality tests and descriptive analysis of means.

The respondents' impressions of the study's theoretical variables and constructs were then subjected to a means analysis. To begin, we conducted normality tests to establish if we should do our inferential analysis using parametric or non-parametric testing. A descriptive analysis was combined with a one-sample Wilcoxon signed-rank test and a one-sample T-test for the mean responses to ascertain the participants' views on the study's theoretical variables and constructs. A Friedman's two-way ANOVA test was used to determine the dominating construct/s that exist within the blended learning problems and student perceptions of bended learning.

Table 4-17 Check for normalcy.

Main Theoretical Variables	S-W Stat	S-W df	S-W Sig.
Blended Learning Challenges	0.989	107	0.545
1. Access to Internet	0.952	107	0.001*
2. Access to Learning Resources	0.963	107	0.005*
3. Library Resources	0.927	107	<0.0001*
4. Prior Online Learning & Training	0.941	107	<0.0001*
5. COVID-19 Restrictions	0.915	107	<0.0001*
Student Perceptions on Blended Learning	0.980	107	0.109
1. Efficient and Effectiveness of Blended Learning	0.947	107	<0.0001*
2. Enhancement of Learning and Performance	0.959	107	0.002*
3. Ease of Use	0.972	107	0.022*

*Significantly non-normally distributed

The Shapiro-Wilk (S-W) test was employed to determine whether the theoretical variables and constructs in the study were normal. Table 4.18 shows that the scores on the constructs for blended learning obstacles and student views of blended learning are not normally distributed, with all scales for the Shapiro-Wilk (S-W) tests being significantly non-normal (All p 0.05). However, the main theoretical variables, blended learning challenges, and students' perceptions of blended learning are normally distributed. Thus, for the main variables, we will use parametric tests and for the constructs, we will use non-parametric tests.

Table 4.18 summarises the descriptive statistics for the study's key theoretical variables. The sample data set's total number of respondents, mean scores and standard deviation are displayed.

Table 4-18 The following is a list of descriptive statistics for the primary variables and constructions.

Variable/Construct	N	Mean	S.D
Blended Learning Challenges	110	2.4437	0.34295
1. Access to Internet	110	2.2848	0.51844
2. Access to Learning Resources	110	2.0636	0.50164
3. Library Resources	108	2.4213	0.81218
4. Prior Online Learning & Training	108	2.3241	0.71798
5. COVID-19 Restrictions	108	2.9954	0.41438
Student's Perceptions on Blended Learning	110	3.0111	0.48939
1 Efficient and Effectiveness of Blended Learning	110	2.9561	0.57787
2. Enhancement of Learning and Performance	110	3.0673	0.60291
3. Ease of Use	109	3.0031	0.52115

Table 4.18 shows that the mean level of the main variable for blended learning challenges was moderate (mean = 2.4437; n = 110; SD = 0.34295). The theoretical constructs for blended learning challenges, thus, access to internet (mean = 2.2848; n = 110; SD = 0.51844), library resources (mean = 2.4213; n = 108; SD = 0.81218) and prior online learning and training (mean = 2.3241; n = 108; SD = 0.71798) also had moderate mean levels. However, access to learning resources (mean = 2.0636; n = 110; SD = 0.50164) had a lower mean rating whilst COVID-19 restrictions (mean = 2.9954; n = 108; SD = 0.41438) had a higher mean rating. On the other hand, the overall mean rating for student's perceptions on blended learning (mean = 1.9874; n = 119; SD = 0.78576) was moderately high. This was a similar case to the respective constructs of students' perceptions on blended learning. The respondents' responses to most of these variables and conceptions were moderate. This indicates that many of the items assessing these variables and conceptions were agreed upon by respondents. A one-sample test was done to see whether there was truly considerable support for this claim, and the findings are provided in Table 4.20 below.

The one-sample test was employed to see if the mean (for normally distributed theoretical variables) or median (for non-normally distributed constructs) differed from a threshold of 2.5. Since their remarks were rated on a 4-point scale, the observed means or medians were compared to a theoretical mean or median of 2.5 in each case. Respondents who agreed to the respective items that tested that variable or concept had mean or median levels much higher

than 2.5. Those with a score of less than 2.5 were respondents who disagreed with the item/s. Low levels of internet access (median = 2.33; test statistic = -3.955; p = 0.0001), access to learning resources (median = 2.00; test statistic = -7.153; p = 0.0001), and prior online learning and training (median = 2.50; test statistic = -2.388; p = 0.017) were all found to be significant in the study's data. Furthermore, neither the respondents agreed nor disagreed on library resource access (median = 2.50; test statistic = -1.070; p = 0.284). These findings imply that respondents did not see internet availability, learning resource access, prior online learning and training, or library resource access as barriers to blended learning. Respondents, on the other hand, had statistically significant positive views of blended learning efficiency and effectiveness (median = 3.00; test statistic = 6.756; p = 0.0001), learning and performance enhancement (median = 3.00; test statistic = 7.405; p = 0.0001), and ease of use (median = 3.00; test statistic = 7.516; p = 0.0001). The findings show that respondents agreed on the items evaluating these dimensions in general, implying that the efficiency and effectiveness of blended learning, as well as the augmentation of learning and performance and simplicity of use, are all reported as positive aspects of blended learning. In addition, students' overall evaluations of blended learning were moderately good (mean = 3.01; test statistic = 10.953; p = 0.0001), reflecting positive feedback on many areas of blended learning.

Table 4-19 For the mean answers of primary variables and constructs, one-sample tests are used.

Variable	Observed Mean/Me	Test Statistic	Asymptotic Sig. (2-tailed
Blended Learning Challenges	2.44	-1.723	0.088
1. Access to Internet	2.33	-3.955	<0.0001*
2. Access to Learning Resources	2.00	-7.153	<0.0001*
3. Library Resources	2.50	-1.070	0.284
4. Prior Online Learning & Training	2.50	-2.388	0.017*
5. COVID-19 Restrictions	3.00	7.756	<0.0001**
Student Perceptions on Blended Learning	3.01	10.953	<0.0001**
1. Efficient and Effectiveness of Blended Learning	3.00	6.756	<0.0001**
2. Enhancement of Learning and Performance	3.00	7.405	<0.0001**
3. Ease of Use	3.00	7.516	<0.0001**

On a four-point scale, statements were rated. (*) Mean/median that is statistically lower (i.e., Lower than 2.5). (**) Mean/median that is statistically greater. (That is, greater than 2.5).

4.4.2 For blended learning issues, Friedman's two-way ANOVA tests are useful.

A Friedman's two-way ANOVA test was used to determine the main construct(s) that exist for blended learning issues. The results in Table 4.20 reveal that there was compelling evidence to conclude that respondents valued the blended learning challenges components differently (p = 0.0001). COVID-19 constraints were the most prevalent blended learning obstacles component, followed by access to library resources, and access to learning resources was the least rated, according to the mean rankings. COVID-19 limits, according to these findings, pose the greatest impediment to blended learning.

Table 4-20 Samples that are similar For integrated learning issues, Friedman's two-way ANOVA by ranks are used.

Variable	Mean Rank	Test Statistic	Sig. (2-tailed)
Blended Learning Challenges			
1. Access to Internet	2.69	123.566	<0.0001
2. Access to Learning Resources	2.18		
3. Library Resources	2.94		
4. Prior Online Learning & Training	2.83		
5. COVID-19 Restrictions	4.36		

Table 4.21 illustrates the results of post-hoc pairwise comparisons, revealing that COVID-19 constraints are the most complicated issue to overcome in blended learning. At the 5% level of significance, there is enough evidence to infer that COVID-19 constraints were ranked higher than access to learning materials (p = 0.0001), library resources (p = 0.0001), and prior online learning and training (p = 0.0001). On the other hand, at a 5% significance level, there is enough data to infer that access to learning resources was the least difficult component of all blended learning problems.

Table 4-21 For blended learning issues, Friedman's two-way ANOVA pairwise comparisons are used.

Sample 1 – Sample 2	Std. Test Statistic	Sig	Adj.Sig.
Access to Learning Resources – Access to the Internet	2.367	0.018	0.179
Access to Learning Resources – Prior Online Learning &	-3.055	0.002	0.022*
Access to Learning Resources – Library Resources	-3.572	0.000	0.004*
Access to Learning Resources – COVID-19 Restrictions	-10.156	0.000	<0.0001*
Access to Internet – Prior Online Learning & Training	-0.689	0.491	1.000
Access to Internet – Library Resources	-1.205	0.228	1.000
Access to Internet – COVID-19 Restrictions	-7.789	0.000	<0.0001*
Prior Online Learning & Training – Library Resources	0.516	0.606	1.000
Prior Online Learning & Training – COVID-19 Restrictions	-7.100	0.000	<0.0001*
Library Resources – COVID-19 Restrictions	-6.584	0.000	<0.0001*

Differences that are statistically significant (* p.05). The null hypothesis that the Sample 1 and Sample 2 distributions are the same is tested in each row. The significance of asymptotic testing (2-sided tests) is shown. For multiple tests, the Bonferroni correction was used to alter significance values.

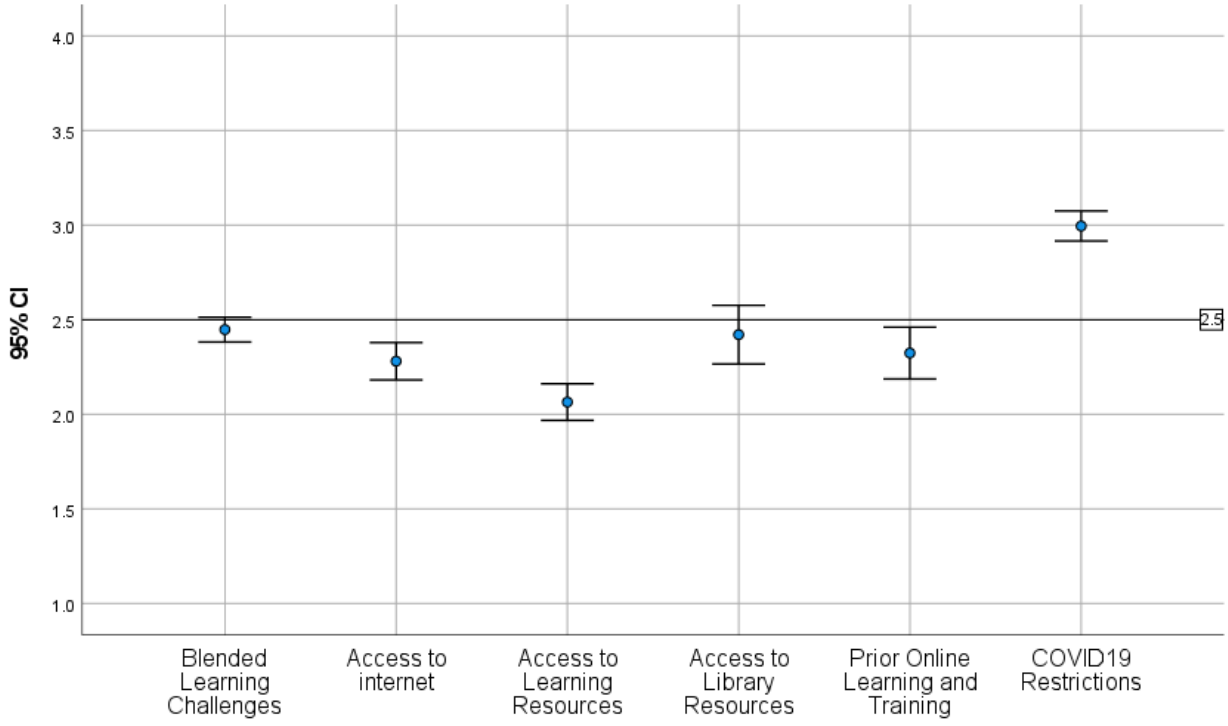

Figure 4-12 Error bar chart for the mean levels of overall blended learning challenges and their respective constructs.

4.4.3 Friedman's two-way ANOVA tests for student's perception of blended learning constructs

The primarily blended learning construct/s that exist for students' perceptions of blended learning was determined using Friedman's two-way ANOVA test. Table 4.22 shows that there was enough evidence to establish that respondents' perceptions of the blended learning construct varied (p = 0.030). The most highly ranked student perspective of blended learning, according to the mean rankings, was the enhancement of learning and performance. Blended learning's efficiency and efficacy came next, followed by its ease of use.

Table 4-22 samples that are similar For student perceptions on blended learning constructs, Friedman's two-way ANOVA by ranks was used.

Variable	Mean Rank	Test Statistic	Sig. (2-tailed)
Student Perceptions on Blended Learning			
1. Efficient and Effectiveness of Blended Learning	1.95	7.018	0.030
2. Enhancement of Learning and Performance	2.19		
3. Ease of Use	1.86		

Table 4.22 illustrates the post-hoc pairwise comparisons, which reveal that the most obvious factors on students' perceptions of blended learning are an augmentation of learning and performance, as well as efficiency and effectiveness of blended learning. Thus, at the 5% significant level, there is sufficient evidence to suggest that learning and performance enhancement was scored higher than ease of use (p = 0.049). There was no statistically significant difference in the mean levels of learning and performance enhancement, as well as the efficiency and effectiveness of blended learning (p = 0.235). Even though the average level of efficiency and effectiveness of blended learning was higher than the average level of ease of use, there is sufficient evidence at the 5% significance level to conclude that the two are not significantly different. The error bar chart for the mean levels of overall students' perceptions of blended learning and its constructs is shown in Figure 4.13.

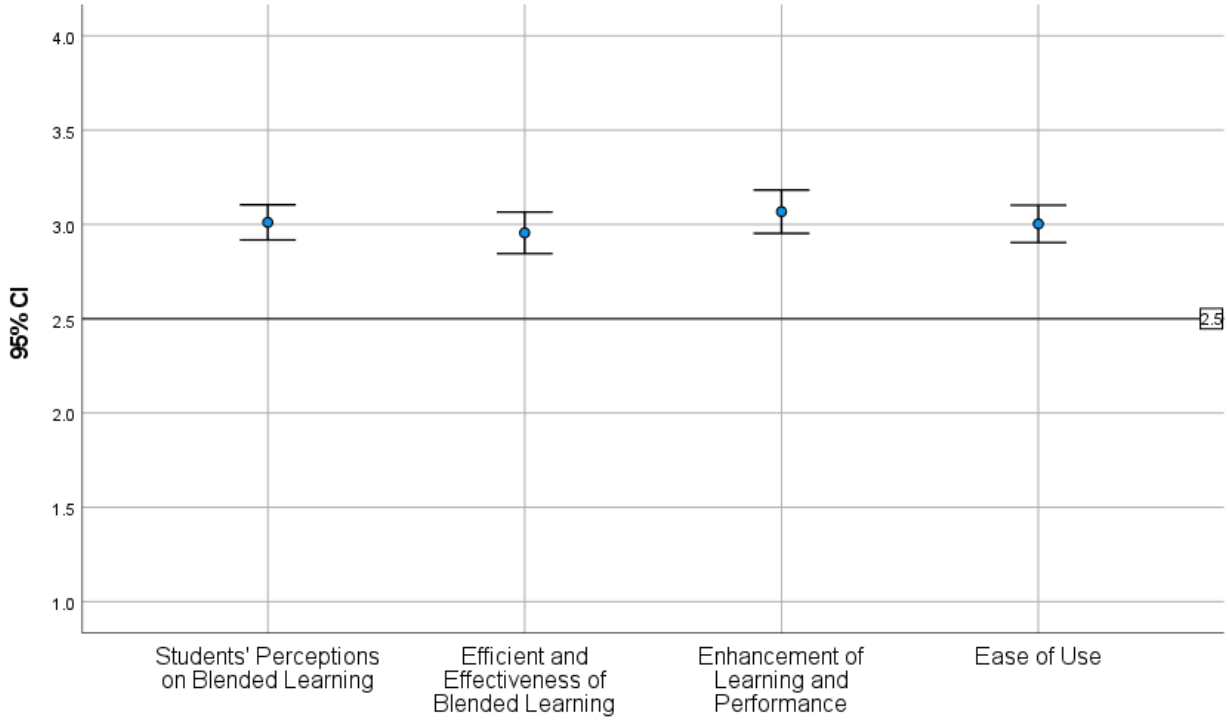

Figure 4-13 Error bar chart for the mean levels of overall students' perceptions on blended learning and its respective constructs.

Table 4-23 Friedman's two-way ANOVA pairwise comparisons for students' perception on blended learning constructs.

Sample 1 – Sample 2	Std. Test Statistic	Sig	Adj.Sig.
Ease of Use – Effectiveness of Blended Learning	0.643	0.520	1.000
Ease of Use – Enhancement of Learning and Performance	2.404	0.016	0.049*
Effectiveness of Blended Learning – Enhancement of Learning &	-1.761	0.078	0.235

Differences that are statistically significant (* p.05). The null hypothesis that the Sample 1 and Sample 2 distributions are the same is tested in each row. The significance of asymptotic testing (2-sided tests) is shown. For multiple tests, the Bonferroni correction was used to alter significance values.

4.5 Section D Correlation analysis is a kind of inferential analysis.

It was also crucial to see if there was a direct link between the students' perceptions of blended learning and the obstacles they faced. A non-parametric Spearman's Rho correlation coefficient (two-tailed test) was utilized to obtain this. The Spearman's Rho correlations (rs) and significant probability for student perceptions of blended learning and blended learning obstacles are shown in Table 4.24.

The results suggest that blended learning challenges had a moderate and negative significant linear relationship with overall students' perception of blended learning (r_s = -0.539; p = <0.0001). This was also a similar case with the respective constructs of students' perception of blended learning. Thus, blended learning challenges had moderate and negative significant linear relationships with efficient and effectiveness of blended (r_s = -0.508; p = <0.0001), enhancement of learning and performance (r_s = -0.477; p = <0.0001) and ease of use (r_s = -0.430; p = <0.0001). These results simply mean that the blended learning challenges negatively affect all aspects of blended learning. Figure 4.14 shows the graphical representation of these findings.

Table 4-24 Spearman's Rho correlation coefficients (rs) and significance probabilities (p) for relations of students' perception on blended learning and blended learning challenges.

Theoretical Constructs	**r_s**	**p**
Student's Perceptions on Blended Learning	-0.539	<0.0001**
1. Efficient and Effectiveness of Blended Learning	-0.508	<0.0001**
2. Enhancement of Learning and Performance	-0.477	<0.0001**
3. Ease of Use	-0.430	<0.0001**

** Correlation is remarkable when the significant level is 0.01(One-tailed test).

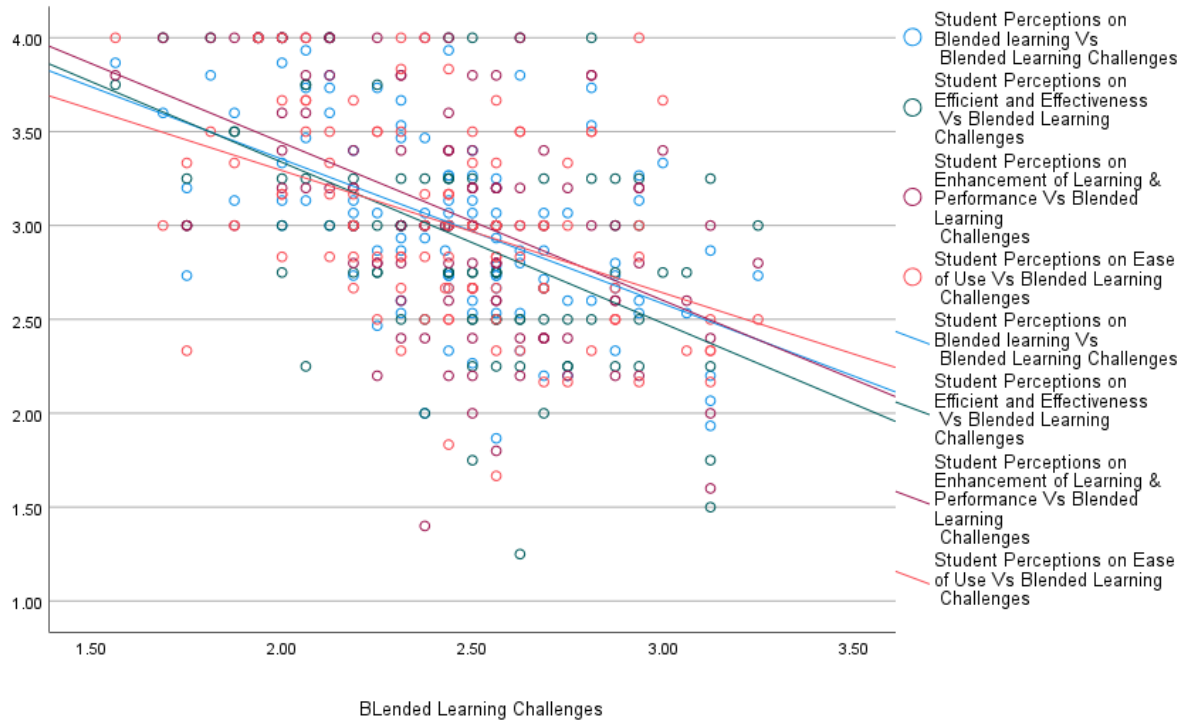

Figure 4-14 The relationship between students' perception of blended learning and blended learning challenges.

4.6 Section E Descriptive analysis on perceptions of respondents on the general aspects of blended learning: Course design.

The purpose of this section is to answer the study's third research objective, which is to assess changes in Cost Accounting 2-course design that are required to benefit students who were previously technologically disadvantaged. This section will investigate the following research question to achieve this objective:

- How effective is the adjustment of blended learning in Cost Accounting 2-course design in supporting the previously technologically disadvantaged student?

A descriptive analysis was undertaken by calculating the frequencies and percentages of how respondents viewed assorted items in order to determine the participants' overall perception of blended learning course design. The items were graded on a 4-point Likert scale, with 1 indicating strong disagreement and 4 indicating strong agreement. The study identified three themes for blended learning course design: (1) online activities and lecture notes, (2) use of videos and customization to improve learning, and (3) material download. Each challenge's descriptive analysis is shown below.

4.6.1 Course design for blended learning: Online activities and lecture notes

The findings reveal that many of the participants agreed on most items measuring the general perception of participants regarding the use of online activities and lecture notes in course designing for blended learning. Thus, most students agreed that the incorporation of online activities in Cost Accounting 2 makes them understand the course as well as that posted notes and slides make them gain a deeper understanding of course content. In addition, most respondents agreed that they can study at a convenient time with the information available online.

Table 4-25 Participants' general perceptions of online activities and lecture notes are represented as frequencies and percentages.

Do you agree with the remarks below?	SD	D	A	SA
Incorporation online activities in Cost Accounting made me to understand the course.	n = 3 (2.8%)	n = 23 (21.5%)	n = 53 (49.5%)	n = 28 (26.2%)
Posted notes and slides make me gain a deeper understanding of course content.	n = 1 (0.9%)	n = 5 (4.7%)	n = 58 (54.7%)	n = 42 (39.6%)
I can study at a convenient time with the information available online.	n = 1 (0.9%)	n = 5 (4.7%)	n = 54 (50.5%)	n = 47 (43.9%)

N=110, Statements were graded on a scale of 1 (strongly disagree) to 4 (strongly agree) (strongly agree).

A non-parametric Chi-square test of equal proportions was used to see if there was any statistically significant evidence to suggest the general view of the participants with statistical certainty. Table 4.26 shows the results of the Chi-square testing. Most of the participants (n = 81; 75.7 percent) felt that integrating online exercises in Cost Accounting 2 helps students grasp the course, which was statistically significant (Chi-square = 28.271; p = 0.0001). Many of the participants (n = 100; 94.3 percent) agreed that uploaded notes and slides assist students gain a deeper understanding of course content (Chi-square = 83.358; p = 0.0001), according to the Chi-square test (Chi-square = 83.358; p = 0.0001). Finally, with course content available online, students can study whenever it is convenient for them (Chi-square = 84.346; p = 0.0001). The findings are summarised graphically in Figure 4.15.

Table 4-26 Non-parametric Chi-square statistics on participants' general perceptions of online activities and lecture notes.

Item	Do you agree with the following statements?	Disagree	Agree	Chi-Square	p-value
1	Incorporation online activities in Cost Accounting 2 made me to understand the	n = 26 (24.3%)	n = 81 (75.7%)	28.271	<0.0001*
2	Posted notes and slides make me gain a deeper understanding of course content.	n = 6 (5.7%)	n = 100 (94.3%)	83.358	<0.0001*
3	I can study at a convenient time with the information available online.	n = 6 (5.6%)	n = 101 (94.4%)	84.346	<0.0001*

N=110, (*) - Differences that are statistically significant (at Alpha = 0.05). The statements were graded on a two-point scale of 1 (disagree) to 2 (agree) (agree).

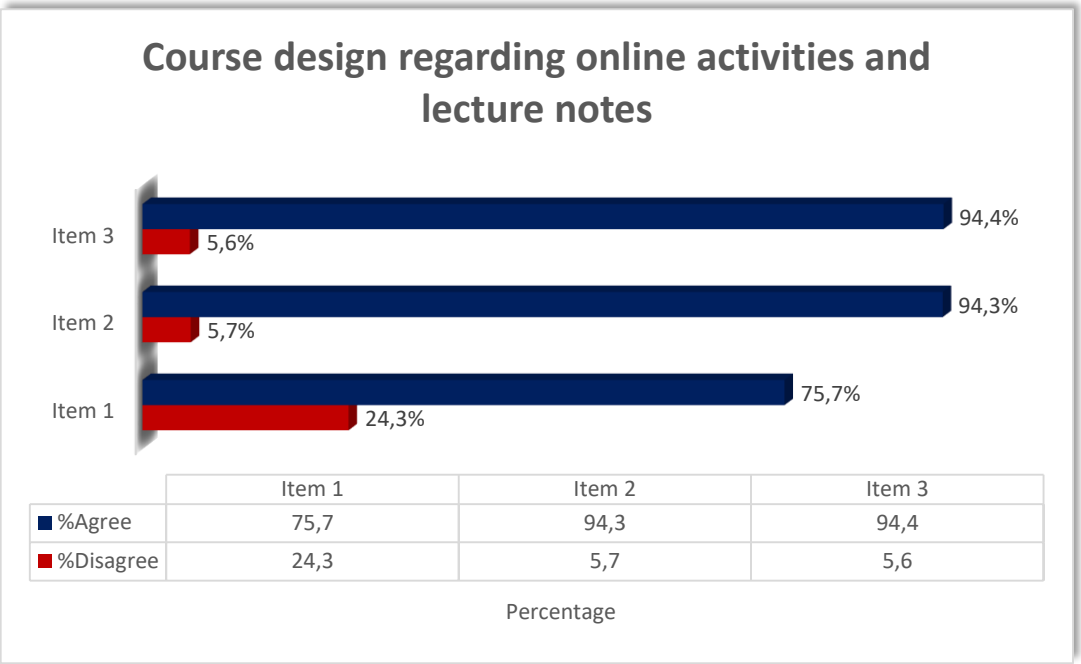

Figure 4-15 General student's perception of online activities and lecture notes.

4.6.2 Course design for blended learning: Use of videos and customisation to enhance learning

The descriptive analysis reveals that the respondents agreed on all the items measuring the general perception of participants regarding the use of videos and customization to enhance learning (see Table 4.27). Thus, most of the respondents agreed that the use of videos in Cost Accounting 2 promotes deeper learning as well as customising Wise-Up features to have a textbook content look is an innovative idea. This was also a similar case where most respondents agreed that videos available online make students understand the course material much better as they can play back and pause where needed. The frequencies also show that students do agree that the learner guide should have video links notices, as well as that students' collaboration application, must be used on Wise-Up.

Table 4-27 Participants' general perceptions about the usage of videos and customization to increase learning are shown by frequencies and percentages.

Do you agree with the following statements?	SD	D	A	SA
Use of videos in Cost Accounting 2 did promote deeper learning	n = 5 (4.8%)	n = 15 (14.3%)	n = 46 (43.8%)	n = 39 (37.1%)
Customising Wise-Up features to have a textbook content look is a promising idea.	n = 1 (0.9%)	n = 3 (2.8%)	n = 54 (50.5%)	n = 49 (45.8%)
The videos available online make me understand the course material much better as I can playback and	n = 1 (0.9%)	n = 5 (4.7%)	n = 41 (38.3%)	n = 60 (56.1%)
The learner guide should have video links notice where there is a video to be watched.	n = 2 (1.9%)	n = 5 (4.6%)	n = 52 (48.1%)	n = 49 (45.4%)
Students' collaboration through the Wise-Up application must be used.	n = 0 (0.0%)	n = 6 (5.7%)	n = 63 (59.4%)	n = 37 (34.9%)

N=110, Statements were graded on a scale of 1 (strongly disagree) to 4 (strongly agree).

To check if there was any statistically significant evidence to suggest the general view of the participants with statistical certainty, a non-parametric Chi-square test of equal proportions was utilised. Table 4.28 shows the results of the Chi-square tests. Many of the participants felt that using videos in Cost Accounting 2 increases deeper learning (n = 85; 81.0 %; Chi-square = 40.238; p = 0.0001). Furthermore, there was statistically significant evidence that most respondents thought that customizing Wise-Up features to seem like textbook content is a promising idea (n = 103; 96.3 %; Chi-square = 91.598; p = 0.0001). Most participants also stated that being able to playback and pause videos recorded from online session helps students grasp course material significantly better (n = 101; 94.4 %; Chi-square = 84.346; p = 0.0001). The data also suggested that the learner guide should contain video links notification where there is a video to be seen (Chi-square = 81.815; p = 0.0001) and that students' collaboration through the Wise-Up application should be utilised (Chi-square = 83.358; p = 0.0001). Figure 4.16 depicts the graphical presentation.

Table 4-28 Non-parametric The utilization of videos and personalization to increase learning yielded Chi-square results on the general perception of participants.

Item	Do you agree with the following statements?	Disagree	Agree	Chi-Square	Exact p-value
1	Use of videos in Cost Accounting 2 did promote deeper learning	n = 20 (19.0%)	n = 85 (81.0%)	40.238	<0.0001*
2	Customising Wise-Up features to have a textbook content look is a good idea.	n = 4 (3.7%)	n = 103 (96.3%)	91.598	<0.0001*
3	The videos available online make me understand the course material much better as	n = 6 (5.6%)	n = 101 (94.4%)	84.346	<0.0001*
4	The learner guide should have video links notice where there is a video to be watched.	n = 7 (6.5%)	n = 101 (93.5%)	81.815	<0.0001*
5	Students' collaboration through the Wise-Up application must be used.	n = 6 (5.7%)	n = 100 (94.3%)	83.358	<0.0001*

N=110, (*) - Differences that are statistically significant (at Alpha = 0.05). The statements were graded on a two-point scale of 1 (disagree) to 2 (agree) (agree).

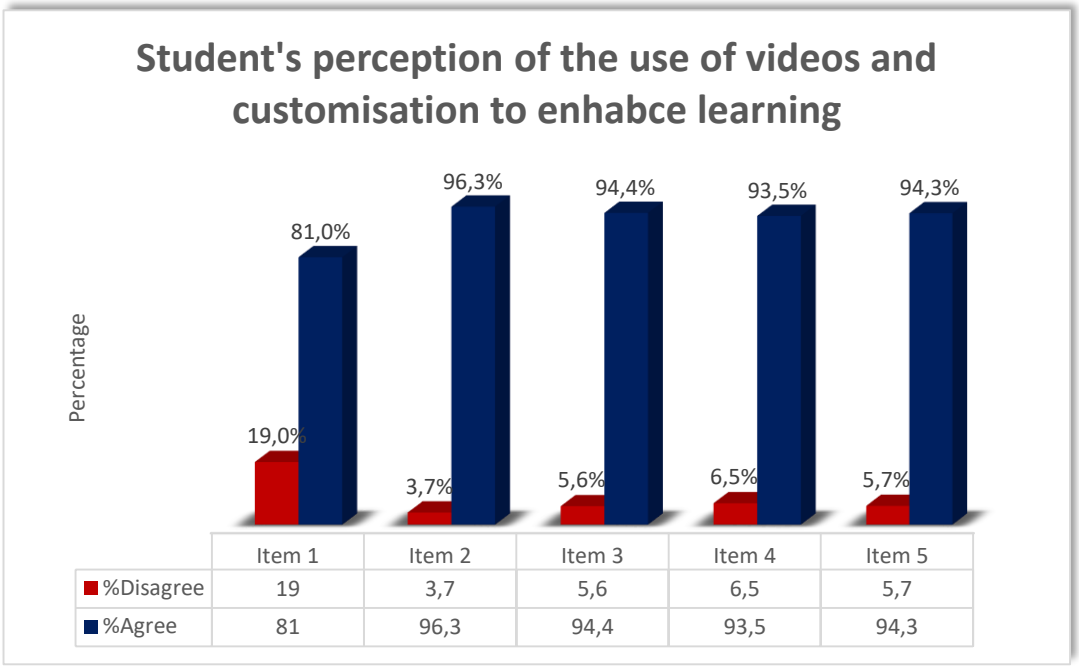

Figure 4-16 General student's perception of the use of videos and customization to enhance learning

4.6.3 Course design for blended learning: Downloading material

The preliminary descriptive findings in Table 4.29 show that the majority of the participants agreed on all items measuring participants' overall perceptions about downloading of material in blended learning course design. The students agreed that the period to download the learning aid should be clearly stated as well as marks should be awarded for downloading any study aid.

Table 4-29 Participants' perceptions of downloading material in terms of frequency and percentages.

Do you agree with the following statements?	SD	D	A	SA
The period to download the learning aid should be clearly stated.	n = 4 (3.7%)	n = 11 (10.3%)	n = 58 (54.2%)	n = 34 (31.8%)
Marks should be awarded for downloading any study aid.	n = 5 (4.7%)	n = 34 (31.8%)	n = 36 (33.6%)	n = 32 (29.9%)

N=110, Statements were graded on a scale of 1 (strongly disagree) to 4 (strongly agree).

Table 4.30 shows the results of the Chi-square testing. The graphical presentation is shown in Figure 4.15. Most of the participants (n = 92; 86.0 %) considered the time range for downloading learning aids should be explicitly provided, according to statistical evidence (Chi-square = 55.411; $p < 0.0001$). Finally, the Chi-square test revealed statistically substantial evidence (Chi-square = 7.860; $p = 0.0001$) that many of the participants (n = 68; 63.6 %) agreed that downloading any study aid should be awarded with points (Chi-square = 7.860; $p = 0.0001$). Figure 4.17 depicts the graphical presentation.

Table 4-30 Non-parametric The Chi-square test was used to determine how participants felt about downloading materials in general.

Item	Do you agree with the following statements?	Disagree	Agree	Chi-Square	p-value
1	The period to download the learning aid should be clearly stated.	n = 15 (14.0%)	n = 92 (86.0%)	55.411	<0.0001*
4	Marks should be awarded for downloading any study aid.	n = 39 (36.4%)	n = 68 (63.6%)	7.860	0.005*

N=110, (*) - Differences that are statistically significant (at Alpha = 0.05). The statements were graded on a two-point scale of 1 (disagree) to 2 (agree).

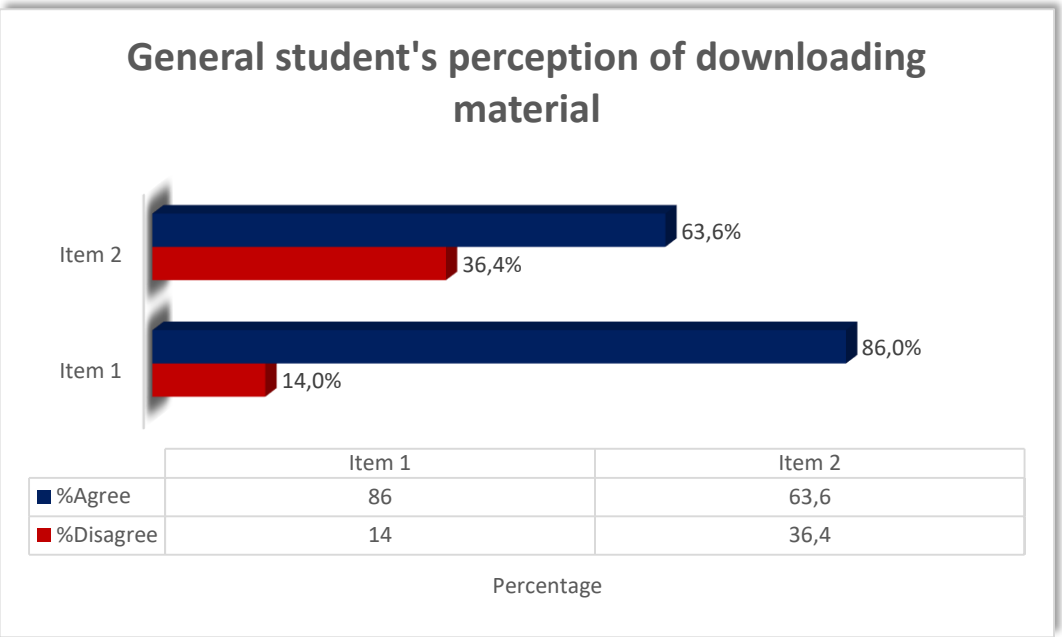

Figure 4-17 General student's perception of downloading material.

4.7 Chapter Summary

This chapter describes and provides the study's overall findings. The analysis was carried out using SPSS version 27. The researcher used descriptive statistics including graphical tables, pie charts, and bar charts to improve data analysis and make the results more informed. The study's findings were also presented in accordance with the research objectives. Cronbach's alpha coefficient was used to test the study instrument's dependability after it was recorded, modified, and analysed. A descriptive technique was employed in conjunction with a non-parametric chi-square test of equal proportions to analyse differences in respondents' perceptions on various elements of the study instrument. The respondents' impressions of the study's theoretical variables and constructs were then subjected to a means analysis. The hypothesis was examined to determine the participants' perceptions of the BL mode's effectiveness and convenience of use for their learning. The findings and the study's recommendations is discussed in Chapter 5.

CHAPTER FIVE:

RESEARCH DISCUSSION, LIMITATIONS, AND RECOMMENDATIONS

5.0 Chapter overview

As chapter four detailed the analysis of data collected using SSPS, this chapter outlines the findings from the data. the limitations of the study and recommendations for future studies. Finally, the study's conclusion is presented.

5.1 Discussion

5.1.1 Research Objective 1:

To explore the challenges that students from a technologically disadvantaged background experience with blended learning.

In a descriptive study, the frequency, and percentages of how respondents viewed various items were analysed to identify the general perception of participants regarding blended learning issues. On a 4-point Likert scale, 1 indicated strong disagreement and 4 indicated strong agreement, the items were scored. Before the study, all items were coded and written so that higher ratings (3-Agree and 4-Strongly Agree) indicate that respondents agree that the issue is a barrier to blended learning. The following themes for blended learning challenges were discovered: (1) Internet access, (2) Learning Resources access, (3) Library Resources access, (4) Prior Online Learning and Training, and (5) COVID-19 constraints.

The data on internet access show that the majority of the participants disagreed on most of the questions reflecting participants' overall perceptions of internet availability as a blended learning problem. As a result, many students disagreed with the assertions that they do not have dependable internet access or that they do not have access to course materials over the internet. On the other hand, most respondents felt that efficient internet facilities, such as public libraries and internet cafes, are few where they live. On most measures indicating the general view of participants regarding access to learning resources as a blended learning problem, the participants disagreed (see Table 4.6). As a result, most students disagreed with comments like “I don’t have access to tutors/lecturers” and “I don’t have enough access to different forms of

media like audio and videos." According to the research, many students believe that blended learning provides sufficient resources at my institution and that blended learning provides great resources to learn at my university. When students were asked to reply to the statement that studying Cost Accounting 2 using the blended model is inefficient, the answers were mixed.

The descriptive analysis demonstrates that the respondents had mixed perceptions on most items assessing the general perception of participants, such as access to library resources and prior learning and training. As a result, a similar percentage of students disagreed and agreed that there are not enough library resources available online for Cost Accounting 2 students to use, as well as that there aren't any accessible library resources available online for Cost Accounting 2 students to use. When asked if they had used technology as a learning tool in their past learning (at the school level), the response was identical. However, the frequencies and percentages show that the university provided enough instruction before the usage of online learning systems. During the covid-19 pandemic, this included the distribution of laptops and data. This provision bridges the gap to an acceptable level, which the responders had reached as a result of the epidemic. Yes, they did not have access to a library or an internet café, but they were able to continue their studies using the resources available to them.

5.1.1.1 Recommendations

The study recommends that BL is effective to learn Cost Accounting 2 as the university did provide enough instructions to navigate the system. An online library is highly recommended as many participants indicated that where they live, they do not have access to libraries. That will be of assistance as the students will be able to access additional resources. As Brothen & Wambach, (2016:20) on the literature did allude that people's views are influenced by their prior experience, the mixed answers could be coursed by challenges participants encounter on BL. Gladly though, those challenges have nothing to do with BL but with elements that support the mode of learning like internet connection.

5.1.2 Research Objective 2:

To investigate Cost Accounting 2 student's perceptions of blended learning

A descriptive analysis was undertaken to determine the general perception of participants on blended learning by calculating the frequencies and percentages of how respondents scored various items. The items were also graded on a 1 to 4 Likert scale, with 1 indicating strong

disagreement and 4 indicating strong agreement. The subjects for the students' impressions of blended learning were developed as follows: (1) Efficient and Effectiveness of Blended Learning, (2) Enhancement of Learning and Performance, and (3) Ease of Use. The initial descriptive findings on the efficiency and effectiveness of blended learning show that many of the participants agreed on all items measuring the general perception of participants' perceptions of blended learning's efficiency and effectiveness. Students believed that using Wise-Up facilitates communication with lecturers and that they can openly ask questions via Wise-Up. The data also revealed that when students do not finish in class, they may finish with the use of internet material. This demonstrates the value of BL and encourages people to participate fully in the learning process. They are now using the LMS on their own time, demonstrating how simple the system is to use because it has been customized to reflect the same information as the recommended textbook. The frequency and percentage distributions show that many of the participants agreed on the bulk of the items measuring participants' general perceptions of learning and performance enhancement. As a result, the majority of students believed that using Wise-Up has enhanced students' academic performance and that Wise-Up gives students different learning options. The results also revealed that utilizing Wise-Up makes learning more exciting for students and that using Wise-Up improves students' learning experiences. Finally, the frequency and percentage distributions reveal that the online announcements (SMS or email) serve as an effective reminder of university events throughout the lockdown period.

5.1.2.1 Recommendation

The BL allows advantages for the students and allow students to be fully engaged with the learning. Learning aid that is available online plays a vital role to the students and no major communication breakdown is experienced with this mode of learning. Therefore, the study recommends that the student’s perception of BL is positive. This can be motivated by the fact that this mode infuses the use of technology for learning and the cohort is described as a techno-savvy generation.

5.1.3 Research objective 3:

To evaluate adjustments in Cost Accounting 2-course design that are needed to support previously technologically disadvantaged students.

A descriptive analysis was undertaken to determine the participants' overall perception of blended learning course design by calculating the frequencies and percentages of how respondents regarded various items. The research for hybrid learning course design revealed three themes: (1) online exercises and lecture notes, (2) video use and personalization for improved learning, and (3) material download. Most respondents agreed that including online activities in Cost Accounting 2 helps them grasp the course, as well as that having uploaded notes and slides helps them understand the topic better. Furthermore, the majority of respondents believed that the material available online allows them to study at their leisure. The respondents agreed that using videos in Cost Accounting 2 increases deeper learning, as does customizing Wise-Up features to look like textbook information. In a similar scenario, the majority of respondents felt that internet videos help students better understand course material since they may playback and pause as needed. Students agree that the learner guide should feature video links to notify when there is a video to be seen and that students' involvement through the Wise-Up program must be employed, according to the frequencies. It was also widely agreed that the time limit for downloading the learning aid should be explicitly indicated and that any study aid downloaded should be rewarded with points. This can be seen as students from previously technologically disadvantaged educational backgrounds having a positive attitude about BL.

5.1.3.1 Recommendations

The study recommends the necessary amendments in the Cost Accounting 2 module to be fully aligned with BL requirements. The design of the student guide needs to be clear on items students will need to make use of the online information and those that they will go through during the normal traditional face-to-face sessions. As Covid-19 pandemic course, a lot of changes in the manner the teaching and learning process is being undertaken, BL is recommended as the mode to be used to facilitate the teaching and learning (Rahiem, 2020: 6127)

5.2 Limitations of the study

The following limitations are noted:

The study was focussed on one department's second-year students. If the survey had been conducted on all second-year students at WSU, the results would have probably been different. Students with diverse qualifications are likely to have varied impressions since their interactions with their qualifications are also variable. However, because the study's goal was to determine the adjustments that needed to be made on Cost Accounting 2, the focus was on students participating in the National Higher Certificate: Accountancy program (NHC: Acc). In addition, the Covid-19 pandemic limited the study to an online questionnaire where some of the participants did not manage to complete it due to technical prohibitions.

5.3 Recommendations

The study recommends that more research be done in other WSU departments to determine students' impressions of blended learning from technologically disadvantaged educational backgrounds. The premise is that students with this kind of background exist at other institutions as well, thus investigations of student perceptions at those institutions can help determine the best teaching and learning model for such students.

The pandemic of Covid-19 prompted a shift from face-to-face teaching and learning to synchronous or asynchronous teaching and learning. Currently, research is focusing on how learners perceive this change. None of them went as far as to grasp how students from historically underserved educational backgrounds saw the new standard way of teaching and learning.

5.4 Conclusion and Suggestions for further research

The purpose of this study was to investigate the perspectives of students from technologically challenged educational backgrounds who are currently enrolled at WSU on blended learning. TAM was used as a conceptual framework for this research. This research was particularly significant because the data will serve as a practical reference for Cost Accounting 2 revisions. The findings show that students in Cost Accounting 2 have a favourable attitude toward blended learning. The learning management system's customization had an impact on this. In Cost Accounting 2, students appreciate the ease of use and utility of blended learning.

The findings of this study contribute to the need of customizing the adopted LMS to be familiar with the knowledge of the students. It also enables WSU administrators to place a greater emphasis on the issue of customizing the adopted LMS to make it more user-friendly for the

students the university serves. The management and feeders of LMS to construct blended learning would know that the focus must be on how the students will get the information easily and in a beneficial manner based on the information provided by this study. Under the Covid-19 pandemic, we rely more on the use of LMS, thus having students' input will help to develop a good teaching and learning model that will continue to encourage deep learning.

Further studies can make use of quantitative method where interviews can be conducted not the distribution of the questionnaire. Also, to look at how the participants perceive the use of BL not only for Cost Accounting 2 but to the entire modules within the qualification can be explored as these modules are dynamic and have different approaches.

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Appendix A: Ethics clearance to conduct the study

DUT
DURBAN UNIVERSITY OF TECHNOLOGY
INYUVESI YASETHEKWINI YEZOBUCHWEPHESHE

FACULTY OF ACCOUNTING & INFORMATICS

Faculty Research Office
Durban University of Technology
Date 30 April 2021

Student Gqokonqana Onke
Student Number: 21959783
Degree: MAcc: Management Accounting

Email: 21959783@dut4life.ac.za
Supervisor: Dr Odunayo Margret Olarewaju
Supervisor email: odunayoo@dut.ac.za

Dear Mr Onke

ETHICAL APPROVAL: LEVEL 2
I am pleased to inform you that the Faculty Research Ethics Committee (FREC) following feedback from two reviewers has granted preliminary permission for you to conduct your research 'Technologically disadvantaged student's perceptions of blended learning in a higher education institution: The case of students at Walter Sisulu University.'

When ethics approval is granted:
You are required to present the letter at your research site(s) for permission to gather data. Please also note that your research instruments must be accompanied by the letter of information and the letter of consent for each participant, as per your research proposal.

This ethics clearance is valid from the date of provisional approval on this letter for one year. A student must apply for recertification 3 months before the date of this expiry.

Recertification is required every year until after corrections are made, after examination, and the thesis is submitted to the Faculty Registrar.

A summary of your key research findings must be submitted to the FRC on completion of your studies.

Kindest regards.

Dr Mogiveny Rajkoomar
FREC Chair
Faculty of Accounting and Informatics
Durban University of Technology
Ritson Campus
Durban, South Africa
4001

Appendix B: Permission to conduct study at WSU

Walter Sisulu University (Potsdam Site)
Old Berlin Road
Box 1421
EAST LONDON
Eastern Cape
5200

27 January, 2021

TO WHOM IT MAY ONCERN

This is to confirm that Mr **Onke Gqokonqana** is a staff member of the Department of Accounting and Finance at the Potsdam campus.

Permission is granted for him to collect data from students for the purpose of his postgraduate research studies.

We encourage students to support him by providing data or information that would help him to successfully complete his research; on the topic:

"Technologically disadvantaged student's perceptions of blended learning in a higher education institution: a case study of WSU.

Thank you so much for your support.

Regards

ACCOUNTING AND FINANCE DEPT.
Potsdam Site – Buffalo City Campus
2021/01/27
SIGNATURE:
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East London, 5200
E-mail : ayeboah@wsu.ac.za

Walter Sisulu University

Appendix C: Survey questionnaire

Students' questionnaire:

Dear participant

This questionnaire will be used to collect data for the research I am doing for my master's degree in accounting. Technologically disadvantaged students' opinions of blended learning in a higher education institution: a case study of WSU is the planned topic for my research. These are students that have had little or no prior experience to technology as a learning aid in their education.

The information you provide will be treated with the strictest confidentiality and used solely for academic purposes. Your involvement in this study will help the researcher achieve the study's goals. The following research questions will be addressed in order to meet the research objectives:

1. What are the challenges that students from a technologically disadvantaged background experience with blended learning?
2. How do cost accounting two students perceive blended learning?
3. How effective are the adjustments in cost accounting two-course design in supporting the needs of previously technologically disadvantaged students.

Importantly, there are no correct or incorrect solutions to the following propositions. The researcher is simply interested in your honest opinion of Wise Up's use in conjunction with face-to-face cost accounting teaching and learning 2. Please make sure you answer all the statements below.

Please help by completing the questions below as accurately as possible. I would appreciate it if you could respond to all the questions, and I appreciate your time and work.

Regards:

Onke Gqokonqana

Section A:

BIOGRAPHICAL INFORMATION

1	**Gender**	
	▪ Male	
	▪ Female	
2	**Race**	
	▪ Black	
	▪ White	
	▪ Coloured	
	▪ Indians	
3	**Age**	
	▪ 18 – 20	
	▪ 21 – 25	
	▪ 26 – 30	

	▪ 31 – 35	
	▪ 36 and above	
4	**Residential area**	
	▪ Rural	
	▪ Urban	
5	**Nationality**	
	▪ South African	
	▪ Other (Please specify):	
6	**Home Language**	
	▪ Xhosa	
	▪ English	
	▪ Zulu	
	▪ Other (Please specify):	

Section B

1. **Blended learning: Challenges**

Select and rank your response by placing an 'x' on the answer of your choice using: 1 – strongly disagree (SD); 2 – disagree (D); 3 – agree (A) and 4 – strongly agree (SA)

	Blended learning: Challenges	**SD**	**D**	**A**	**SA**
1.1	I have reliable access to the internet				
1.2	I have access to course materials online over the internet				
1.3	Where I live there is very limited access to efficient internet facilities such as public libraries and internet cafes				
1.4	As part of blended learning, I have access to tutors/lecturers				
1.5	As part of blended learning, I have sufficient access to different forms of media such as audio and videos				
1.6	Blended learning gives access to enough resources at my university.				
1.7	Blended learning gives access to quality resources to learn at my university.				
1.8	Learning of cost accounting through the blended model is not efficient				
1.9	There are sufficient library resources available online for cost accounting students to use.				

1.10	There are accessible library resources available online for cost accounting learners to use				
1.11	In your previous learning (school level), did you make use of technology as a learning tool?				
1.12	Covid-19 pandemic limited the physical visit to internet café.				
1.13	The covid-19 pandemic reduces face to face as a part of blended learning.				
1.14	The teaching and learning process changes due to the covid-19 pandemic.				
1.15	The school is providing enough resources (such as data and laptops) for online learning during the COVID-19 pandemic.				
1.16	Before the use of online platforms for learning, there was enough training provided by the institution.				

2. **Blended learning: Student's perceptions**

Please indicate your level of agreement on the following statements:

(**SA**=Strongly Agree; **A**=Agree; **D**=Disagree; **SD**=Strongly Disagree.)

		SA	A	D	SD
2.1	Using Wise-Up allows me to accomplish learning tasks more efficiently.				
2.2	The use of Wise-Up has improved my academic performance.				
2.3	The use of Wise-Up makes communication with my lecturers effective.				
2.4	Wise-Up provides multiple ways of learning for me.				
2.5	I can freely ask questions through Wise-Up.				
2.6	What I did not finish in class, online information assists me to complete.				
2.7	Using Wise-Up makes my learning more interesting.				
2.8	I am positive that Wise-Up would improve my learning experiences as a student.				
2.9	Interacting with Wise-Up is clear and understandable.				
2.10	I am able to use Wise-Up even with no training.				
2.11	It is easy to become acquainted with Wise-up after a brief time of use.				

2.12	The online announcements (SMS or email) serve as a good reminder of school activities during the lockdown period.				
2.13	I can use Wise-Up without technical support.				
2.14	I am comfortable downloading, uploading files online.				
2.15	I have the necessary skills for using Wise-Up.				

3. Blended learning: Course design

3.1	Use of videos in Cost accounting did promote deeper learning				
3.2	Customising Wise-Up features to have a textbook content look is an innovative idea.				
3.3	Incorporation online activities in cost accounting made me to understand the course.				
3.4	Posted notes and slides make me gain a deeper understanding of course content.				
3.5	I can study at a convenient time with the information available online.				

3.6	The videos available online make me understand the course material much better as I can playback and pause where needed.				
3.7	The learner guide should have video links notice where there is a video to be watched.				
3.8	The time frame to download the learning aid should be clearly stated.				
3.9	Marks should be awarded for downloading any study aid.				
3.10	Students' collaboration through the Wise-Up application must be used.				

Thank you for your participation, it is much appreciated and the answers you have provided will be especially useful for the study.

Appendix D: Letter of information to participants

INFORMATION AND CONSENT FORM

FACULTY OF ACCOUNTING AND INFORMATICS

MASTER OF ACCOUNTING: MANAGEMENT ACCOUNTING

Dear Participant

I, Onke Gqokonqana, a master's student at the Durban University of Technology invites you to participate in a research study entitled "Technologically disadvantaged student's perceptions of blended learning in a higher education institution: The case of students at Walter Sisulu University." This study aims to determine the perceptions of students from a technologically disadvantaged educational background registered under the National Higher Certificate: Accountancy towards blended learning, with a view of adjusting the designing of blended learning for cost accounting 2 modules within the program.

Title of the Research Study: Technologically disadvantaged student's perceptions of blended learning in a higher education institution: The case of students at Walter Sisulu University.

Investigator/s/researcher: Onke Gqokonqana, ND: Internal Auditing, BTech: Internal Auditing.

Co-Investigator/s/supervisor/s: Odunayo Margret Olarewaju, PhD, CA(NIG), ACMA, CGMA; Melanie Bernice Cloete, MAcc.

Brief Introduction and Purpose of the Study: As the world is emerging into the fourth industrial revolution and technology is advancing; time and distance between human beings is no longer a barrier to human interaction. Walter Sisulu University (WSU) is doing all that it could to infuse technology as a learning tool even though it attracts students from rural areas who have less or no exposure to technology as a learning tool. Since students of the WSU are

mostly from a poorly resourced schooling background, the study is interested to understand how these students perceive the integration of innovative technological advancements to the traditional form of learning they are used to which is the face-to-face instructional model.

Outline of the Procedures: Participation in this project is voluntary and participants will be required to complete an online survey (Questionpro). Questionpro has been employed for effectiveness and efficiency purposes and is the safe mode as the data will be collected while the entire world is faced with the Coronavirus pandemic (Covid-19) The total questionnaires to be distributed by the researcher are estimated to one thousand. After reading the letter of information and consent, should the participant choose to participate, they will need to click on the checkbox button which will redirect them to the questionnaires.

After two weeks of the electronic distribution of the questionnaire, an email of reminder will be sent to the participants. The researcher will respond to emails or WhatsApp to any questions that the respondents had asked.

Risks or Discomforts to the Participant: No risk at all for participating in this study. This study is meant to adjust the design of the course not to assess you as the participant.

Benefits: As WSU is implementing blended learning as the instructional model used, the student's voice will be heard and the suggestions that are backed up with evidence to adjust the course design will be relayed to the management for implementation. The aim is to improve the student learning experience

Reason/s why the Participant May Be Withdrawn from the Study: The respondent may refuse to participate or withdraw from the project at any time with no negative consequence.

Remuneration: The respondents will not receive any remuneration for participating in the study.

Costs of the Study: The respondents will not be expected to cover any costs for the study.

Confidentiality: All information would remain confidential. The information will not be used for any other purpose other than this research study. All participants will remain anonymous in this study.

Research-related Injury: There will not be any compensation for any research-related injury because it is very unlikely that there will be an injury that occurred while answering the

questionnaire. The questionnaire will be online, and the participants are requested to submit their responses online as they will be completing the questionnaire on google forms.

Persons to Contact in the Event of Any Problems or Queries: Please contact me on 073 649 0228, my supervisors Dr. Odunayo Margret Olarewaju on 031 373 5632; Mrs. Melanie Bernice Cloete on 031 373 6717 or the Institutional Research Ethics Administrator on 031 373 2375. Complaints can be reported to the Director: Research and Postgraduate Support, Prof S Moyo on 031 373 2577 or moyos@dut.ac.za

Once again, your participation in this study is voluntary. You can opt not to participate or withdraw from the study at any time without adverse consequences. Confidentiality and anonymity of records identifying you as a participant will be maintained by the University.

Thank you for participating.

Your assistance is greatly appreciated.

Sincerely,

Mr. O. Gqokonqana

Student No.: 21959783

Cell No.: 073 649 0228

CONSENT

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, **Onke Gqokonqana**, about the nature, conduct, benefits, and risks of this study.
- I have also read and understood the above-written information (Participant Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials, and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during this research which may relate to my participation will be made available to me upon request.

By clicking on the checkbox, I give my consent voluntarily to participate in this study

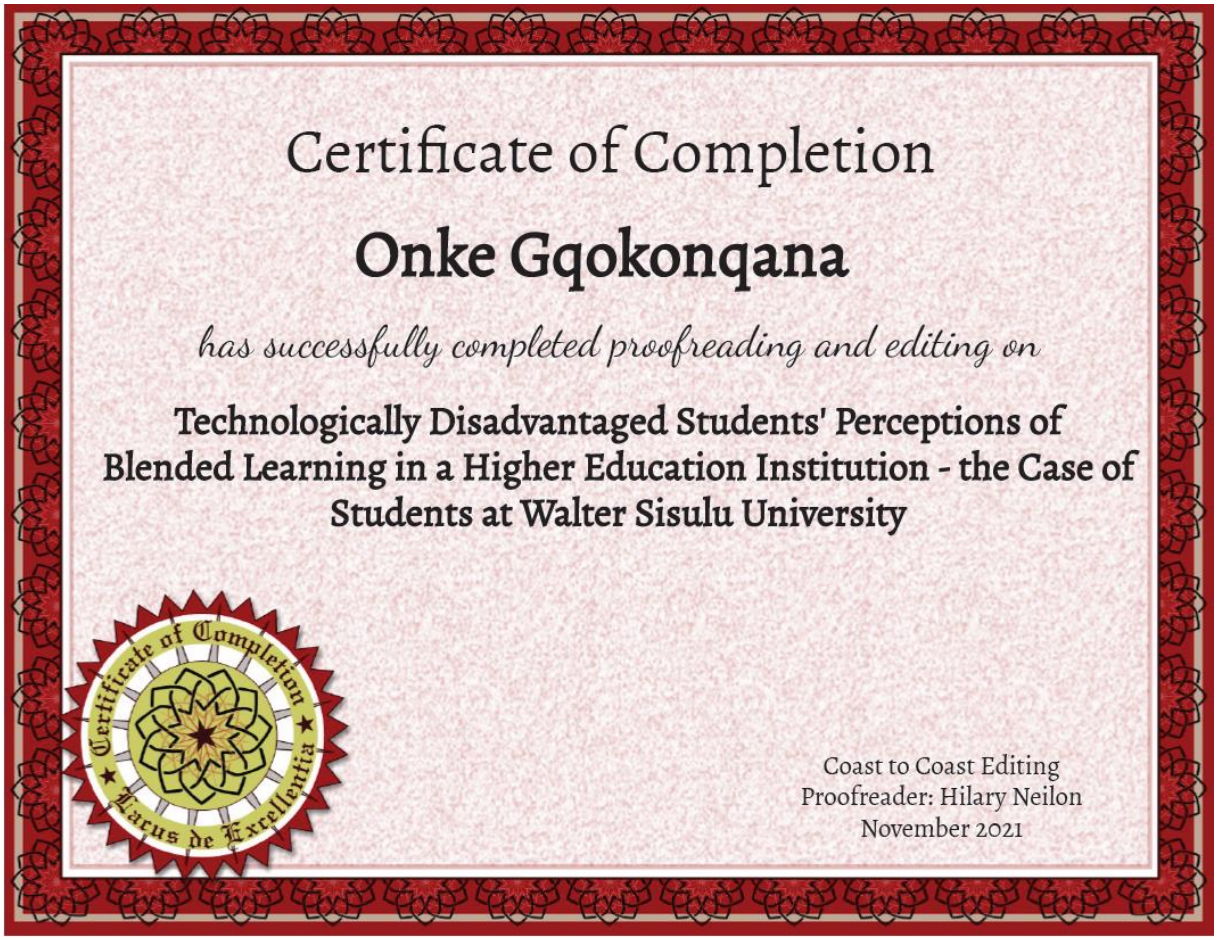
Technologically disadvantaged students' perceptions

ORIGINALITY REPORT

18%	13%	7%	9%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	ore.exeter.ac.uk Internet Source	2%
2	Submitted to Mancosa Student Paper	2%
3	Submitted to University of Stellenbosch, South Africa Student Paper	2%
4	ir.dut.ac.za Internet Source	1%
5	Khalid Aziz Ansari, Faraz Farooqi, Soban Qadir Khan, Muhanad Alhareky, Ma. Abigail C. Trinidad, Taha Abidi, Muzaheed Muzaheed. "Perception on online teaching and learning among health sciences students in higher education institutions during the COVID-19 lockdown – ways to improve teaching and learning in Saudi colleges and universities", F1000Research, 2021 Publication	1%
6	Submitted to University of Johannsburg Student Paper	<1%


Certificate of Completion
Onke Gqokonqana
has successfully completed proofreading and editing on
Technologically Disadvantaged Students' Perceptions of Blended Learning in a Higher Education Institution - the Case of Students at Walter Sisulu University
Certificate of Completion
Lacus de Excellentia
Coast to Coast Editing
Proofreader: Hilary Neilon
November 2021