# The Impact of Digital Technology on Education in South Africa

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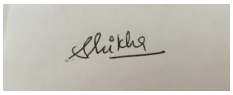
## Declaration

I , Shikha Gupta, declare that the following research report is my own piece of work excluding as indicated in references and acknowledgements. The report has been submitted in partial fulfilment of the requirements for the degree of Masters of Business Administration in the Graduate School of Business Administration, University of the Witswatersand, Johannesburg. This research article has not been submitted before for any degree or examination in this or any other university.



**Shikha Gupta**

Signed at Johannesburg, South Africa

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## SUPPLEMENTARY INFORMATION

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1. **Interview Questions**
2. **Interview Transcript**

*** Including abstract and references**

## TABLE OF CONTENTS

**Abstract**

This study sought to determine the effect that digital technology would have on South Africa's educational system. The use of technology in educational settings may change how teaching and learning are carried out. Learning is made possible by technology, which can significantly reduce the growing gap in inequality and disparity and enhance the status of the economy.

The research method used for this study is qualitative. To understand the motivations and behaviours of the target audience, the qualitative technique involves gathering perceptions and having faith in people's responses. Qualitative research aims to offer a more in-depth understanding of the problems. The following key themes emerged: Digital Technology, Willingness for Acceptance, Willingness for Implementation, Issues that Digital Technology Can Solve, and Advantages that Digital Technology Can Have. The results of technology in education spaces can have a profound impact and the findings are in closing the skills gap of the country, creating a more interconnected world, and giving access to educational resources, to mention a few.

**Keywords**: Digital Technology, online Learning,, Digital divide, Digital skills, Educational System, ICT.

# CHAPTER 1 INTRODUCTION

## 1.1 Statement of purpose

This research is a qualitative study on the impact of digital technology on education in South Africa.

## 1.2 Background of the study

Kasule and Mapolelo (2005) define education as one of the fundamental needs of humans. It is a key element for creating a world that is prosperous, equal and peaceful. Education is key to getting knowledge, skills, and prosperity as an individual and on a national level. Furthermore Albaugh (2014) adds Education is a discipline of attaining teachings and learnings within a formal system by which different skills, values, morals, knowledge etc.

However, Teles (2020) states that after covid hit, there was a global crisis in education. A lot of education systems around the world were affected. Schools were closed and pandemic brought a devastating effect on the learning and well being of students. An innovation was required in the education system to incur the heavy losses done by COVID.

From a global point of view and with the advent of the globalisation, digitisation and knowledge economy, today it is important for countries and continents to democratise and speed up their innovative capacity in order to be competitive in the global market. Digital Technology is that growth accelerator for the knowledge economy. However, As much as digital technologies have a huge potential, it is very important to avoid a one size fits-all approach (Homer-Dixon, 2006; Feinstein, Vorhaus & Sabates, 2008).

However, talking about South Africa, the country is still facing a lot of

socio-economic challenges, resulting in social exclusion, inequality, and lack of quality education. There are a lot of factors that affect the quality of education but digital inequality or what you call lack of equal information and communication technology (ICT's) poses one of the major factors ( Ntolwane, 2013; Chigona, Chigona, Kayongo Kausa, 2010).

Robinson et al. (2015) explains how digital inequality affects quality of education and skills development resulting in unemployment affecting overall success of the youth and the economic situation of the country. For the socio economic development of South Africa, harnessing the power of digital technology and skills required for it are very important to shape the economy. This can be achieved by shaping digital literacy. Furthermore, according to Albaugh (2014) in order to unleash the power of technology on education in South Africa a lot of work will need to be done for example infrastructure, implementing education technology strategies, supporting school connectivity, needing assessment, planning and deployment. Along with that digital solutions that can offer personalised learning are the need of the hour for the schools of South Africa.

As pointed out by Castells (1998), "information technology, and the ability to use it and adapt it, is the critical factor in generating and assessing wealth, power, and knowledge in our time" (cited in Warschauer & Matuchniak, 2010, p.179).

The aim of this study is to establish the impact of digital technology on education in South Africa.

## 1.1 Research Problem

According to Eberhard et al. (2017) for a country to benefit from Fourth Industrial Revolution (4IR) its citizens need to have the skills and optimism to operate digital technologies. Which means emphasis needs to be placed on

building the digital competencies and skills set of the citizens that majorly starts from basic education. Verma et al. (2015) urge that digital literacy and the role of teachers is central to the concept of digitalisation in education. There is no one size fits all solution for the requirements of school. When implementing the solutions for schools, there are multiple role players that are involved in the education system. Merely providing softwares and hardwares can be a reason for failure in implementation.

In addition to that, Adams and Sandbrook (2004) stress that there is an on-going crisis in the education system of South Africa, experiences with technology is lacking, access to smartphones is rare and mobile networks are limited and that the current system is failing the South Africa's youth which means technology has to serve as a resource, facilitator and connector that supports education across the country. Digital Technology today plays an important role in reforming education

This research is concentrated on establishing the impact of introducing and accepting digital technology on education in South Africa.

### 1.4 Primary Research Question, Sub Question and Objective

Digital Technology is not a focus itself. It's an accelerator. Digital Technology plays an important role in the establishment and administration of education. Within the education system, it is best integrated as a value creation process (Humle et al., 2014). However the education system in South Africa has to pace up with the digital revolution. The primary research question is closely associated with and highlights the research problem. It was further divided into two sub-questions and two secondary research objectives. Following tables respectively address the primary research question and primary research objective and the associated sub-questions and secondary objectives.

| | |
|---|---|
| **PMQ:** What is the impact of digital technology on education in South Africa ? | **MO**: To explore guidelines that inform the impact of digital technology on the education system in south africa? |
| **SQ** : What problems can digital technology solve for teaching and learning ? | **SO**: To identify the pain areas that digital technology can solve |
| **SQ**: How can digital technology empower students for their learning? | **SO**: to investigate the factors that enable students in their learning with the help of digital technology ? |

**Table 1.1 Primary Research Question and Sub Questions**

### 1.5 Rationale

The rationale in this research is the continuous reflection of the impact digital technology can have on the education system in South africa. In order to achieve this objective, technology blending with learning can help explain how technology plays a critical role in education today. Technology is a medium that shapes culture and is not just a tool. Therefore, the whole process of digital technology integration is combined with continuous reflection of characteristics of technology. While digital technology is getting increasingly common in education systems around the world, the challenge still prevails for practitioners on how to most effectively integrate digital technology into educational settings in South African schools to reap maximum benefits (Fraillon, Ainley, Schulz, Friedman, & Gebhardt 2014).

## 1.6 Delimitations of Study

The research will be focused on the South African education system. The limitation is that this study will only be conducted at private and public schools in Durban. Therefore, the study will only be conducted in the school sites with teachers / instructors necessitated by time constraints. However, the researcher will ensure that data generated is credible by applying data control measures stated in Chapter 3.

## 1.7 Definitions of terms

**Education system**:The economic and social components that normally make up schools at the federal, state, or local levels are referred to as an education system. These elements include public finance, school infrastructure, staffing, pay, perks for employees, educational materials, and more. The coordination of people (among instructors, administrators, and students), the infrastructure (including secure facilities and transportation), and operational institutions and procedures are all referred to as education systems (Castells ,2010).

**Digital Technology**: Digital technology is a networked system via which information is transmitted. New commercial, governance, and communication mediums and modes are made possible by digital technology. Decision-making processes are enhanced by digital technology, and we also receive improved information and high-quality data processing. Without denying, however, that the use of digital technology has had a number of unforeseen repercussions (Mol, 2008).

**Digital Divide** : The difference between people who have access to digital technology and those who do not can be described as the "digital divide." By effectively utilising digital technology in classrooms, schools may improve

teaching and learning while reducing the digital divide (Newey et al., 2015; Joppa, 2015).

**Digital Inequality** is the inequality that is created because of the split of access in some who have and some who don't have access is called digital inequality. unequal access to digital devices including laptops, cellphones, tablets, and the internet is known as the "digital divide." The access to information and resources is divided and unfair due to the digital divide. People without access to the Internet and other ICTs are at a socioeconomic disadvantage because they are unable or less able to find and apply for jobs, shop and sell online, participate in democracy, or research and learn in the Information Age, where information and communication technologies (ICTs) have surpassed manufacturing technologies as the foundation for global economies and social connectivity (DiMaggio andHargittai, 2001).

### 1.8 Chapter Outline

**Chapter 1: Introduction**

The first chapter is the introduction of the study and forms the basis. It gives the skeleton and statement of the problem which further elaborates about the objectives and aims, questions and lastly significance.

**Chapter 2: Literature Review**

Chapter two is a review of scholarly thesis who explored the same research problem, examined them and did their findings. It walks about underpinning theories and guides the rest of the research.

**Chapter 3: Research  Methodology and Design**

The third chapter talks about research design and method, data collection methods, unit and data analysis, validity, reliability, delineation, and ethical

considerations of the research.

**Chapter 4: Findings Result and Interpretation**

Chapter four discusses the results, finding and interpretation from the data collected through interviews as a data collection method. The analysis is done by thematic analysis in which the raw data is segregated into themes and then in codes.

**Chapter 5: Conclusion and Recommendations**

Chapter five is all about revisiting primary research questions, its objectives and sub questions. Also, mapping all questions to their respective themes and codes. At the end of the chapter the researcher provides recommendations.

# CHAPTER 2 LITERATURE REVIEW AND THEORETICAL FRAMEWORK

## 2.1 Introduction

Education is one of the most important sustainable development goals (SDG) for any country or continent for its economic development, and in the new era digital technology plays a crucial role in education. In today's world digital technology plays a very crucial role in an educational environment and its integration is of prime importance. The education system of South Africa has over the years faced a lot of challenges. Some of the challenges were like low pass rates at matric level to middle schools, poor efficiency, low productivity and absenteeism of both teachers and students, high dropout rates to name a few (Carter et al., 2020:2).

Straub (2009) asserts that introduction of Digital Technology in the education system of South Africa can be the solution towards the prevailing problems of low productivity and efficiency of the youth. Digital Technology if implemented right can assist with reducing the gap between modern learning and traditional manners. Leveraging digital technology can lead to transformation of the traditional learning system to modern and digitised learning systems. However, implementation of digital technology for enhancing education in south african schools has benefits, challenges and recommendations.

In addition, Romeo, Llyod & Downes (2013) mentions that the digital divide is also one of the factors that influence the usage of digital technology in the education system of South Africa. The digital divide is defined as the gap between those individuals or groups of individuals who get the benefits of digital technology and the ones who don't.

Wang & Woo (2007) emphasis on usage of digital technology in education of South Africa, it will not only enhance the quality of education but also provide

advantage of coping and competing with the digital revolution happening around the globe and finding solutions for development challenges in South Africa .

The researcher's goal is to identify the variables that will have an effect on the use of digital technology and gain understanding of the difficulties, advantages, and suggestions associated with its use in South Africa's educational system.

## 2.2 South Africa education landscape

Since 1994, the system of education and training has become non-racial and the policy development was guided by principles of equality, recognition of democratic rights, right to bi education. South Africa is one of the world's most unequal countries in the world due to its complicated past of apartheid. Because of such inequality the major problem is poverty. As a country its citizens have to come together to solve this wicked problem (Arif, 2001, p. 4).

Mishra & Koehler (2006) state as education policies reform and get mature they will get more inclusive of education and training systems that will restructure and strengthen the education system as whole.

## 2.3 Digital revolution in south african education and factors influencing the acceptance

South Africa is one of the developing countries in the world. The status of digital technology is the same as racial inequality, wealth distribution meaning quite unequal. Therefore, the needs of one school are also different from another. Even though South Africa is one of the world's developing nations, according to Rogers (2002, p. 3), its present state of digital technology in schools is subpar, the teachers are struggling with digital competencies and learning material.

Some schools have almost no or zero access to tech, money, electricity, however some schools are doing better.

Furthermore, Greenstein (2001, p.6) adds to the idea by stating that currently the use of the internet in teaching and learning in developing countries like South Africa is still latent. However, Econews (1999, p.5) affirms that the education sector is one of the most important sectors that takes maximum benefit of technology.

In spite of this, Greenstein (2001, p.8) argues that when new technologies come into existence few links are missing between primary secondary and tertiary education. The links across levels are still missing which can enable a larger population to take advantage of well- resourced institutions for academia and infrastructure. According to Albion, Jamieson-Proctor & Finger (2011) the current status of digital technology is that there is a gap, which is explained by the age gap between teacher and student and the solution of which is explained by instituting a generational change. In addition to it, Fernández & Fernández (2016) state that the current cohort of teachers lack the skills particularly core digital competences which need to be quantified as they will be teaching the current cohort of learners, generation Z.

According to Fox, Bledsoe, Zipperlen & Fox (2014), multigenerational teaching helps create a coherent work atmosphere, which in turn helps to draw in and keep new generation educators as they have new talents. Pegler et al. (2010) contend that because technology is advancing at such a quick rate, teachers and students must stay up to date. Apart from the digital gap between teaching and learning, digital technology integration is also about the usage of digital tools like computers, web resources, multimedia programs, e-learning techlois etc which are not that prominent in South Africa (Earle, 2007).

This idea is comparable to the Technological, Pedagogical, and Content

Knowledge (TPACK) paradigm proposed by Koehler and Mishra (2009). Any use of a digital technology in the classroom that improves teaching and learning is known as ICT integration. Williams (2003) confirms that in order for South African education institutions to be competitive in the global higher education arena they have to participate in information society so they are able to give proper training to the society, students and workforce which can play the right role on the continent and become efficient to accept digital technology.

## 2.4 Factors influencing the implementation of digital technology in South African education system

According to Van der Berg (2008) schools often face scarcity of qualified educators and challenges for lack of resources. Furthermore, a significant obstacle is a lack of financial support, which drastically lowers the opportunities available to learners and prevents those with less privilege from participating in education and training. The deployment of digital technology in the education system has a very high potential to mitigate the issues (Wintz, 2009; Louv, Muller & Tredoux, 2008).

Integrating technology in the teaching and learning goes beyond just adoption. The potential of digital technology can be realised by education when adoption and integration go hand and hand where adoption of technology is a scenario where technology is acquired and utilised in teaching whereas integration is seamlessly embedding technological components into the everyday classroom (Herselman & Britton, 2002).

While on a global level there have been many importance and challenges of technology being domesticated, adopted and implemented in the education landscape, its implementation in the South African education system is still in its infancy. Adoption does not necessarily mean integration, there have to be deliberate steps to it (Miller, Naidoo, Belle & Chigona, 2006; Tondeur, Van Braak

& Valcke, 2007; Margaret, 2005). However there are many challenges to implementation of digital technology in the education system of South africa. Alampay (2006) states that a lot of in depth research is required to gain deep understanding for challenges and steps that need to be addressed along with decision makers of schools and policy makers.

### 2.5 What problems can digital technology solve for teaching and learning

Gulston (2010) proposes that potentially with the help of technology we can consider the promise of learning mediated by technology that is accessible anywhere and at any time: ubiquitous learning. These dispersed and ubiquitous learning opportunities can be made accessible in the home, the workplace, the museum, the coffee shop, the park, or the city street thanks to each of the innovations—online, blended, visualisation, virtualization, and augmented reality. The learning setting is expanded in this instance in both space and time. According to Burbule (2009), learning can become more naturally connected to other needs and interests and become more rooted in problems or questions that show up in everyday life. This could lead to new justifications for learning.

In addition, Adu and Okeke (2014: 273) suggest that the curriculum can change to "problem-based" learning, which calls for reevaluating the course material, teaching approach, and learning objectives. Learning is more apt to be motivated by pressing, real-world problems and objectives in established, commonplace situations. This is connected to another shift in education that has taken place from the traditional "learn it now, use it later" model to what might be called "just in time" learning, which entails accessing knowledge, skills, and information for specific needs in specific contexts of use, where those resources are immediately applicable and helpful. Ubiquitous learning is more sociable even when the student is by themselves (Sharples et al., 2016).

The use of digital technology has definitely made teacher educators participate

in their professional development very conveniently. The technology has increased their professional development activities and acts as a booster for attending many self development goals (Adu and Okeke 2014: 275). Quite rightly so, de Witt and Lessing (2007) argue that use of technology gives the educators the sense of worth along with effectiveness and efficiency to work on their career development.

Another possible change in the locations and contexts of learning is the use of visualisation and virtualization technologies, which allow the creation of a sensory learning environment with its own special kind of space. In both this reform and other reforms, elements of gaming—which are very popular with young people—return as possible educational breakthroughs. Additionally, these capabilities provide fresh affordances for the presentation and dissemination of curriculum material. In creative visual and virtual contexts, interest, engagement, and motivation problems appear very differently. Another innovation is augmented reality, which enhances actual spaces with virtual and visual elements (Ferreira & Ono, 2010).

### 2.6 How can digital technology empower students for their learning?

The benefits of integrating digital technology are pedagogical and/or administrative. From the pedagogical point of view, digital technology enhances teaching and learning practices in the education system. However, In comparison to traditional teaching practices, the usage of technology makes it more efficient because it includes qualities like understanding, reasoning and creative thinking which are important for learner capability (Higgins, 2003).

As per Keong, Horani and Daniel (2005) integration of digital technology promotes problem solving and comprehension which is a major benefit of digital technology integration. New innovative forms of learning and teaching have to be embraced in order to effectively maximise the integration of the technology

(Hennessy & Deaney, 2004). ICT can also improve the efficiency of school administration functions. Kozma (2008) summarises that technology makes data storage effective and collaborative which is very effective for students as it saves time and energy and allows students to focus on critical activities rather than administrative activities and increases transparency. Alternatively Jung (2005) mentions that combining technology with routine tasks can be cumbersome but with a few steps it can become an integral part of teaching and learning.

Technology has also contributed to bettering the educational process. With the aid of technology, students can now take more pleasure in learning because they are exposed to a more engaging and interactive learning environment. Learners can be engaged by technology to maintain their attention on what they are studying. This is demonstrated by the fact that the majority of people utilise technology nowadays for both educational and recreational objectives. Also, it is a huge aid to educators and teachers. Instructors can now more successfully engage pupils in order to improve their enjoyment of the learning process. Students can now enjoy learning at a much higher level as a result (Van Poeck and Vandenabeele, 2012; Michael, 2020).

Education reform is being pushed forward by information technology, which is also being used to foster common knowledge in society as a whole. Instead of just "Evolutionary Tinkering," you need to implement major structural changes backed by technology if you want to see a noticeable increase in educational output. (He, 2011) Despite the advantages, Chigona, Chigona, and Davis (2010) assert that the integration of technology must be seamless because, if done poorly, educators will view it as an add-on rather than an integral part of learning and instruction. Therefore, it's crucial to comprehend the variables that influence technology in teaching when it arises naturally.

## 2.7 ANALYTICAL FRAMEWORK

### 2.7.1 Theoretical Framework -Technology Acceptance Model (TAM)

This study is based on Davis's (1989) Technology Acceptance Model (TAM), which is a theoretical framework that affects how widely users embrace new technologies. According to Braun (2013), a technology's acceptability is determined by how simple it is to use and how its users feel about it. The simplicity with which a user can utilise a certain system and their perception that it would boost productivity and relieve them from labour determine the utility of systems in an information technology setting.

Technology acceptance, according to TAM, is a three-stage process wherein external factors (system design features) set off cognitive reactions (perceived ease of use and perceived usefulness), which in turn create an affective response (attitude towards using technology/intention), influencing use behaviour (Davis, 1989; Davis, 1993). TAM depicts behaviour as the result of perceived usefulness, perceived ease of use, and behavioural intention.

Fred Davis defined perceived usefulness (PU) as "the extent to which a person believes that employing a certain technology would enhance their ability to accomplish their job." It refers to a person's perception of the technology's utility for their intended use. According to Davis, perceived ease-of-use (PEOU) is "the extent to which a person perceives that utilising a given system would be free from effort" (Davis 1989). If the technology is simple to use, then the obstacles have been removed. No one is fond of something if it is difficult to use and has a confusing interface.

A user who views video gaming as a time waster will view technology as being unusable, but a user who believes that video gaming may engage parts of the brain like reasoning and situational awareness will find it worthwhile to learn

how to play video games. The study's findings show that teacher proficiency and favourable attitudes towards ICT will be more important for the success of digital technology in schools (TAM; Davis, 1989).

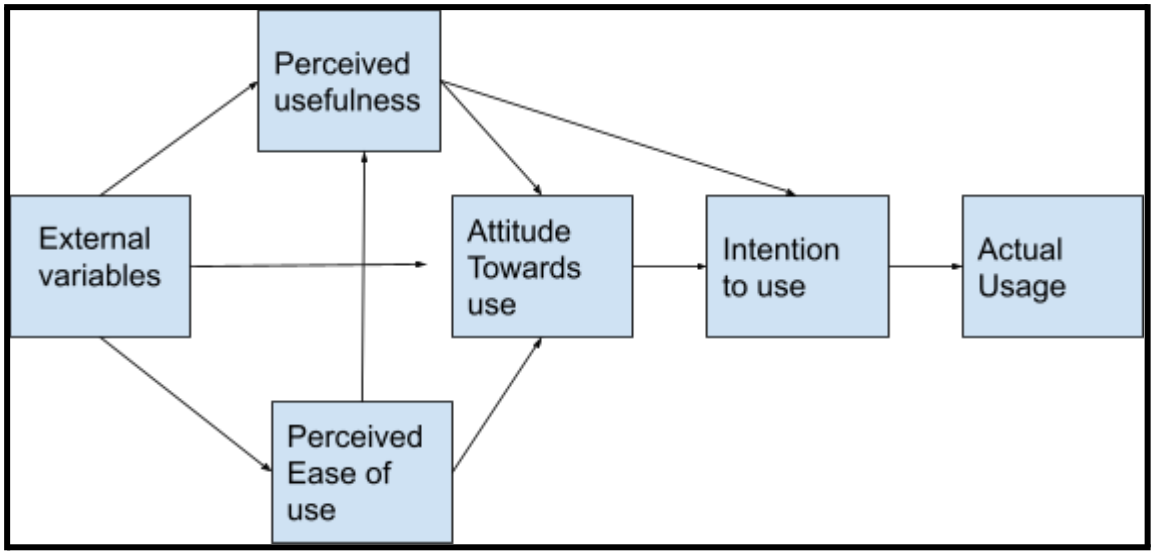


**Figure 2.1 Davis Theoretical Framework**

### 2.7.2 Conceptual Framework

Shroff et al (2011) argues that there is a large amount of research and academic debate that surrounds technology acceptance, emergence and hence its impact. Even though there have previously been significant expenditures in educational technology, many technologies have not been fully utilised or abandoned due to low user adoption and user resistance (Davis, 1993; Gao, 2005; Gong, Xu & Yu, 2004).

There have been many models and theories produced in this field, however according to Liu, Liao & Pratt (2009) TAM has gained the most popularity

because of its literature. Regardless of how effective TAM may be according to Kripanont (2006), research is being done to determine whether or not TAM has to be expanded, adjusted, or revised to account for changes in technological surroundings. Only genuine factors, such as gender and experience, are considered by the TAM model. Maybe, as suggested by Kripanont (2006), moderators and other variables also play a significant influence in determining and there has been extensive research into South Africa.

So, the following conceptual model, which is depicted in figure, will serve as the basis for this research on the "Impact of digital technology on education in South Africa."

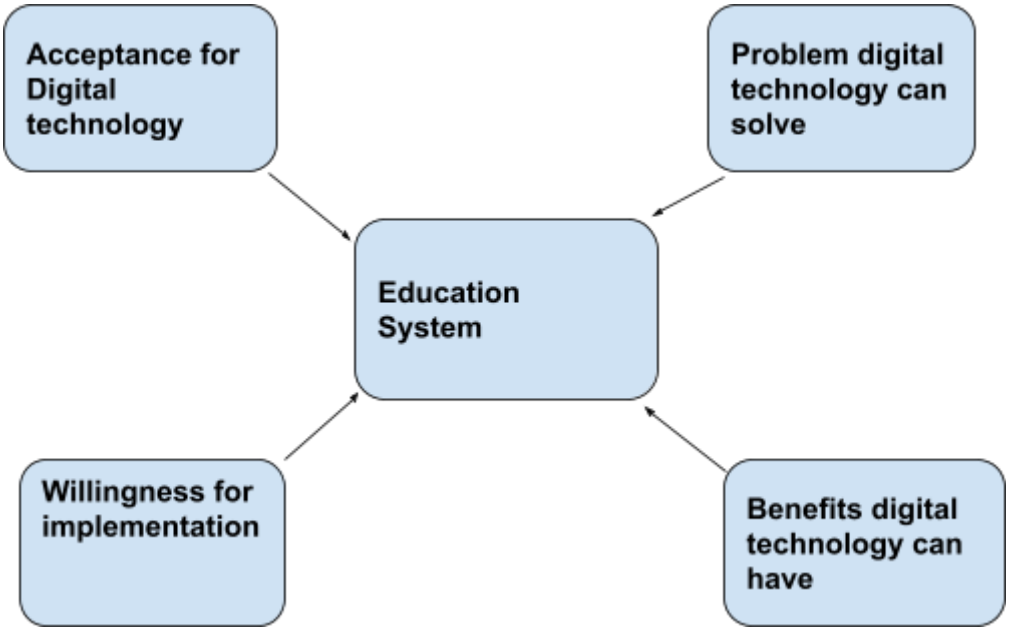


**Figure 2.2 Conceptual Model**

The conceptual model depicted in the above illustration shows the relationship between real utilisation of digital technology and its benefits and problems it can answer, as well as users' acceptance of and willingness to use it. The conceptual model mentioned above also provides an overview of the themes

that came up throughout the literature research. In addition, the themes stated in the table can be inferred from the literature Teo (2009).

| Themes | Factors |
|---|---|
| **i) Digital Technology** | Electronic devices and making life easier |
| **ii) Willingness for Acceptance** | Giving time to training for digital technology.<br>Openness of school to accept digital technology. |
| **iii) Willingness for implementation** | Infrastructure support to implement digital technology<br>willingness of schools and universities to implement |
| **iv) Problems digital technology can solve** | Tech can break monotony, save trees, cloud storage and more |
| **v) Benefits digital technology can have** | Empowering students/ learners |

**Table 2.1 Themes and its Factors**

The conceptual model helps break down the research into themes that emerged from the literature review. This conceptual model provides an overview of the themes that emerged during the literature review; it does not, however, explicitly state what the literature had to say about the positive analysis. Table 2.1 above lists the factors that emerged from the literature, and each high-level theme can be related to the factors listed in the table.

## 2.8 Conclusion

In conclusion, the entire nation must shoulder the responsibility for technology, innovation, and digital programming. This means that encouraging innovative behaviour throughout the organisation and utilising digital strategies to speed up results for students in the South African educational system by leveraging the power of information and communication technologies requires a coordinated effort. There are solutions to lessen the difficulties. Several themes arose from the literature review in this chapter, which served as the foundation for the investigation. Also, it strengthens the theoretical foundation upon which the responses to the supporting research questions are based.

# CHAPTER 3: RESEARCH METHODOLOGY

## 3.1 Introduction

Research is an educational activity and the term is a technical term which comprises redefining the problem and defining them, suggesting solutions or for hypotheses, collecting, evaluating and organising data, after which they do deduction in order to reach conclusions and then lastly testing the conclusion if they can are fit to formulate hypotheses. D. Slesinger and M. Stephenson in the Encyclopaedia of Social Sciences define research as “the manipulation of things, concepts or symbols for the purpose of generalising to extend, correct or verify knowledge, whether that knowledge aids in construction of theory or in the practice of an art.” This chapter of research is majorly focused on research design and methodology. The methodology of research is further described in relation to the research method. It also explains scope, imitation and position.

## 3.2 Research Philosophy

A research philosophy is a viewpoint on the methods that should be utilised to collect, analyse, and apply data regarding a topic. In contrast to doxology, which refers to what is thought to be true, the term "epistemology" refers to what is recognised to be true. Therefore, the process of changing what is believed into what is known—from doxa to episteme—is the goal of science. In the Western tradition of science, there are two main research ideologies that have been identified: positivist (also known as scientific) and interpretivist (also known as antipositivist) (Galliers, 1991).

It is important to note that the interpretive research philosophy is consistent with the way designers conduct research to understand the problem's context, learn and understand behaviour, and examine culture to develop empathy for the users. The goal of design research is to interpret data in order to develop

theories about the nature of the issue and potential fixes (Collis and Hussey, 2014, p.50).

### 3.3 Research Approach

This study's research methodology is qualitative. The qualitative approach is about obtaining perceptions and having faith in people's replies, which aid in understanding the motivations and behaviours of the target audience. The goal of qualitative research is to provide a more detailed understanding of the issues being studied (Aina, 2002; Dixon-Woods et al., 2004; Kothari, 2004). Also, it states that a qualitative approach should be employed to respond to inquiries regarding the perspective, significance, and experience of a participant in any particular circumstance. Sueber (1973) asserts that data from qualitative research is not appropriate for counting or measuring anything. The methods used to do qualitative research include interviews, or group discussions to assign concepts, actions, beliefs, or attitudes; however, interviews with the participants are recommended to get their perspective on a certain topic.

This research, which is also known as a word-based research strategy, would provide you with answers to questions like where, how, when, and what, according to Miles & Huberman (1994). According to Benbasat et al. (1987), qualitative research focuses more on describing and decoding concepts than it does counting the number of times a thing occurred. High-quality research is (Maanen, 1983). According to Denzin and Lincoln (1994), high-quality research takes a naturalistic stance and employs a complex, multifaceted focusing strategy.

A few advantages of qualitative research, according to Benbasat et al. (1987), include (a) assisting the researcher in comprehending the nature and complexity of the phenomenon under consideration, (b) facilitating research in relatively uncharted territory, and (c) assisting in the investigation of a

phenomenon in its natural setting. Supporters of qualitative research assert that when texts are quantified, the quality of recording, understanding, and interpretation of a phenomenon is significantly diminished (Kaplan & Maxwell, 1994).

Qualitative research approach is very natural in its dealings because it is completely based on understanding the data collected and observing it to draw final conclusions. According to Lincoln & Guba (1985), the researcher that does qualitative research interviews, decodes, summaries, interprets and does analysis of the challenge at hand in its real setting.

### 3.4 Research Design

A study design, according to De Vaus (2001), discusses the framework of the research that must be established before data collection and analysis can be carried out. It helps to guarantee that the data collected will directly address the study topic. As a work plan just concentrates on execution, it is more than that.Before data collection and analysis, there needs to be a structure for the research that will be conducted. The data arrangement is what we refer to as a research design. According to Goertz and Mahoney (2012), The purpose of this research design is to gather data and guarantee that we have answers to all of the questions we create in order to carry out the study. According to Kothari (2004), after a research challenge is established, research design enters the picture, where a strategy or framework is developed that also serves as the foundation for data collection. Following that, analysis is completed with an estimated effort, cost, and time, which also serves as the foundation for the goal of the research.

The knowledge claim's assumptions are brought about by the research design option, which then brings about the techniques of inquiry, questions, or supporting data needed to conduct the study. It also involves giving instructions for procedures (Goegan et al., 2018). Moreover Creswell (1998) implies that the

researcher carries beliefs about knowledge claims to the decision of a research design. Inquiry traditions and techniques that give precise instructions for steps in a study design also operate at a more applied level.

### 3.5 Data Collection methods: Interviews

Bolarinwa (2015) says that data collection by interviewing the participants is one of the important ways of collecting data in qualitative study. According to the research question, the interview type can be modified. Also, the preferred approach of the researcher and participants characteristics all work around the research question. Norland-Tilbury (1990) elaborates that telephonic interview, face to face interview are some forms of interviews frequently used based on geographical distances. Furthermore, Anastasiadou (2011), adds that unstructured interviews majorly start with a single question and then the control of it is given to the interviewee in run time. This kind of interview is best suited when participants are welcomed to share a personal experience and narrate a story also called narrative enquiry.

However, Johnson et al. (2007) states degree of structure varies according to interview type. Based on the questions which the research is looking to answer, interview design can be placed on the structural spectrum. When the approach is very stringent and structured it definitely makes the researcher jobs easy to administer but restricts the participant to express themselves. However Ono & Ferreira (2010) says an open approach allows the flexibility of openness and invites participants for discussion.

Structured, semi-structured, and unstructured research interviews are the three main categories. Structured interviews are simply verbally presented questionnaires with little to no variation and little room for follow-up questions in response to answers that call for more in-depth discussion. As a result, they are quick and simple to administer and might be especially helpful if certain questions need to be clarified or if the respondents are likely to have literacy or

numeracy issues. However because of their limitations in terms of participant replies, they are not very useful when "depth" is needed Pitsoe & Maila (2012).

### 3.6 Population and sample

When performing a field investigation, the "population" is the totality of the factors taken into account. The premise that all elements will be covered and the maximum accuracy will be gained is incorrect, hence this approach is not practical. All things are covered, no elements are left, and the best accuracy is accomplished. Even a small bias grows as the number of observations rises, and more time, effort, and financial resources must be expended Steyn (2011).

Hence, choosing a small number of things for sample checks is a more accurate strategy than choosing all objects. The sample design, which is a strategy for selecting samples from a particular population, is the method of sample selection that the researcher chooses. As a result, the decision to choose 12 from a Sample is a portion that is typical of the total (The American Heritage College Dictionary, 1993, p. 1206). Researchers must choose the number of participants to choose (i.e., sample size) and how to choose these sample members in both quantitative and qualitative investigations (i.e., sampling scheme).

### 3.7 Sample size and technique

The sample size must be carefully chosen in order to make accurate results, according to Steyn (2011). Knowing specifics about the issue being investigated might assist determine the proper sample size for reliable results. The questionnaire/interview is predesigned, and information is gathered from the participants based on the questionnaire.

The sample size for our study is 10 educators from 10 educational institutions.

Every study or investigation in which the goal is to draw conclusions about the population from a sample must take the sample size into consideration (Mujere, 2016).

### 3.8 Sampling

One technique employed by researchers is the snowballing sampling approach since existing participants are the ideal candidates for referring to the most pertinent participants who share the study's important features.

Researchers who adopt the snowballing method do so because they find conducting studies tough or challenging. Using snowballing sampling, participants can recommend one another, which facilitates reaching out to a sample population. It is up to each participant to decide whether to accept or reject an invitation (Yin, 2011).

Tongco & Dolores (2007) affirm the snowballing strategy helps researchers save time and money because planning takes less time and money than excessive sampling or looking for subjects does. Snowballing is a non-probability sampling technique, according to, hence the odds of bias and mistake are unexpected.

### 3.9 Unit Analysis

The goal of this study is to identify the variables that influence the adoption of digital technology in South Africa's educational system, as well as the school's readiness to accept technology in terms of adaptation and integration, along with management, training procedures, students, social and cultural awareness.

The unit of analysis for this study is made up of educators or instructors in educational institutions (Bradley et al., 2007).

### 3.10 Data analysis

Data from the research participants were gathered through interviews in the section of data analysis. In quantitative data analysis, information pertaining to concepts and user feedback is captured in order to identify responses, behaviours, themes, and trends. Hwang (2008) The process of organising interview transcripts, non-textual information, and observation notes that accrue throughout the course of study is known as qualitative data analysis.

The majority of data analysis in a qualitative research approach, according to insert, entails minimising the volume of raw data before examining key patterns that aid in deriving meaning from the data. The development of a logical takeaway is the outcome of this categorization or coding. According to, coding is distinct from data analysis, yet it is nevertheless a crucial step in the latter. Coding entails splitting up a large amount of data into labels, a process that is typically accomplished by theme or subject identification.
According to, the nature of the data is complex in qualitative data analysis in terms of its structure, richness, and the creation of hypotheses and discoveries (Ryan & Bernard, 2003).

### 3.11 Reliability and Validity

According to, validity and reliability are crucial aspects of research. By paying strict attention to the aspects of validity and reliability, good research can be distinguished from bad research. According to, it is a crucial component of qualitative research because, in general, the findings of this type of study are viewed with scepticism. He adds that a measuring device used to assess reliability is only regarded as dependable if it yields repeatable results Kothari (2014).

Researchers attempt to utilise a single technique to test dependability in a specific situation, but it is still challenging; as a result, reliability is determined by the consistency of results. The ability of the questionnaire to accurately measure the research problem is referred to as validity. The validity of questionnaires is crucial when measuring theoretical or conceptual phenomena (Kothari,2004). Researchers distribute surveys on a variety of topics to examine what information is adhered to. In this instance, the researchers may have administered a questionnaire on a related idea to determine whether the outcomes were connected as one might anticipate. If the results were the contrary, researchers may have provided a questionnaire on a different concept (Hsieh & Shannon, 2005).

### 3.12 The research instrument

According to Braun & Clarke (2013), a research instrument is a device used to gather data. It is the researcher's responsibility to choose the instrument that is most appropriate for their particular type of research. The tool consists of interviews, surveys, questionnaires, and checklists. Interviews are one of the most dependable research instruments for data collection because they involve asking questions in order to get information.

Liu (2016) states that in order to gather detailed information and record responses, open-ended questions are useful for interviews. The key goal is to gather as much accurate and reliable information as possible. Thus, validity and dependability are indicators of the consistency and correctness of research tools. Choosing the right validity type to test their research instrument (Interview) can be confusing for beginning researchers.

### 3.12.1 Design of Interview

**What is Digital Technology**

Q1. What is your understanding of digital technology?

Q2. Do you think technology can help in schools?

**Willingness for Acceptance of Digital Technology**

Q3. Do you think you as a teacher will give appropriate time and energy in getting the training for digital technology?

Q4. How open are you or your school is for accepting digital transformation change?

**Willingness for Implementation of Digital technology**

Q5. Do you have the infrastructure to implement technology in the classroom?

Q6. Have we been able to talk to another school or user who has used/implemented the technology or service?

**Problems digital technology can solve**

Q7. Do you think technology can help in teaching and learning in schools?
What problems will it solve?

**Impact Digital Technology can Have?**

Q8. Do you think technology will empower students and teachers for their learning?

### 3.13 Procedure of Data Collection

Teachers from various schools of Durban and colleges make up the attendees. Interviews will be the primary method of data collection. Interviews are used for thorough research and unrestricted involvement. The interviews were coded for analysis and verbatim transcription (Creswell, 2009). Coding entails going over

the data and putting the main ideas through. A peer debriefing technique will be utilised to increase credibility once a reflective diary is registered for transferability and dependability (Leedy & Ormrod, 2005).

### 3.14 Possible limitations and challenges of the study

This research study will be delineated to focus on digital technology in educational institutions of Durban. This research area is selected to explore the impact of digital technology in education. Keeping in mind the time and resources not all educational institutes will be covered.

### 3.15 Ethical Consideration

The study will be carried out in accordance with WBS's ethics procedures.

Step 1: School officials will sign a briefing letter and a briefing and consent letter. Respondents will thereby fully consent to their participation.

Step 2: Interviews will be used to obtain data via questionnaire.

Step 3: Participants will be made aware of the goals, and their comments will be kept private.

Step 4: Prior to doing research, Researcher received an ethics clearance certificate from the university.

### 3.16 Proposed Timeline

Ethics Clearance form : 8th July 2022
Got approval: 16th September 2022
Start Interviews : 15th October2022
Submit First copy : 15th January 2022
Final Copy : `26th February 2022

## CHAPTER 4 : Research Findings and Analysis

### 4.1 Introduction

The methodology, research strategy, and design process are all covered in the third chapter. The methodology for the study was qualitative. Interviews are used as a method of gathering data. Data examined by The interviews were coded for analysis and verbatim transcription (Creswell, 2009). Coding involves reviewing the data and running the key concepts. The presentation of the findings from the analysis of the collected data is the main goal of Chapter four. The instructors and teachers from the educational institutions were interviewed and data was gathered. In this chapter, We will go over major concepts that emerged from the participant interviews.

### 4.2 Participants Information sheet

There were a total of 10 Teachers who were interviewed in this study from different kinds of schools case A and case B: private well funded & public non-so funded and public well funded schools. The participants were:

Teachers (T1CA, T2CA, T3CA, T4CA, T5CA)
Teacher(T2CB, T2CB, T3CB,T4CB)

### 4.3 Thematic Analysis

This section reviews the themes that emerged from the interview process. A qualitative data analysis technique called thematic analysis is used in this research. It includes reading over a data set (such as the transcripts of in-depth interviews or focus groups) and looking for patterns in meaning to derive themes. Thematic analysis involves an active reflexive process in which the

researcher's personal experience is crucial to extracting meaning from the data.

The Themes that emerged from the data are as below:

1. Awareness about Digital Technology
2. Willingness for Acceptance of Digital Technology
3. Willingness for Implementation of Digital technology
4. Problems digital technology can solve
5. Impact Digital Technology can Have

The above themes helped synthesise the impact of digital technology on education in South Africa. Following section we will review the codes that emerged from each theme.

### 4.4 Awareness About Digital Technology

In this section we review some codes that emerged from the theme awareness about digital technology.

#### 4.4.1 Electronic Devices

When participants were asked what in their understanding is digital technology their opinion was anything that automates otherwise manual tasks is called digital technology. This statement is completely supported by the first teacher who said

*“I think digital technologies and the first electronic devices that allow its users to interact with and in the process automates otherwise manual tasks. It provides enough marginal data and information in a way that may reduce the time taken to complete the task. It improves the visual quality in a way that may increase the learning curve. So it's user management. Examples of digital digital technology in school environments may include devices such as smart boards.” [T1CA]*

Another participant said that their understanding of digital technology is as stated

*“Digital technology in my understanding is things like digital devices such as computers, televisions and cell phones as well as things like social media and the internet which provides information and also a means to create and store data.” [T2CA]*

Furthermore, in another case, teacher said they use various different types of technology like the third teacher said

*“I use various means of technology like your pocket fast. I just have my laptop and I'm gonna say that it is connected to my laptop so I use things like different apps like an app called Jolly Phonics I use YouTube. I talk about using YouTube because he comes from really rural areas and lots of them don't have the data or the connectivity.” [T3CA]*

### 4.4.2 Makes Life Easy

Technology has improved every aspect of our life, from networking and healthcare to education, communication and transportation. The finest thing is that it always improves by enabling more sophisticated functions which makes life easier.

One participant shares a similar view as evident from the statement

*“Digital Technology, are sort of devices or tools or electronics that we generally would use to improve our quality of life. So what we do as in education is that we take this particular technology and we try to incorporate it into our curriculum.” [T4CA]*

Another participant shares the view in terms of how varied digital tech has made life easier and how digital technology wears many hats in people's lives now. Participant shares

*“I think it's just that technology is still subject to all devices that seems to have itself.I think that's the ticket to digital for making life easier for specific purposes. Teaching, learning any type of work. So I understand that finding this on the web is that it's everything to do with electronic technology, whether it's programming or tools or systems to generate or Princess and store data, whether it's online. So things like gaming, your social media, robotics, AI, all of that. OK, cool.” [T7CA]*

Furthermore another participant has a theory on how digital technology connects to kids. It is evident from the statement that

*“I helped my kids to understand abstract concepts with digital technology.” [T2CB]*

One of the teachers shares her experience as to how digital technology has made her life easier as a teacher. [T3CB] explains

*“To what they actually did, it can make sense of it. I mean, if you take the kid or child from a rural area and you're trying to teach the child. Let's say something about educating what you have got. OK, let's say space. You're trying to teach the child something about space related, right? You want to show the exact example, like the fact that the same basically is much larger than what they think. Just showing them on the computer or even showing them something like that. It definitely helps them to see it rather than just hear about it or even and I, you know, I know some schools, they tell them, you know, pretend to be the sun and you'll be the other child is the sun, another child that you move around. The same I mean just the visuals. It just makes the kids feel more interested in it. Get them interested in nothing because many of them are*

*also visual learners, so that helps them. But visual Wellness helps them to be equal also cause immunity is continuous from the entertaining. And just teaching with the teacher in front, reading up notes."*

Another teacher said that kids learn more from digital technology than hard books. Teacher [T1CB] had a strong opinion about it which is evident from the statement

*"The kids or even the adults help them show them how to use these things and I know that personally it has taught them more than just reading from a book because it's actual and they may not be in that place, but it's like having an experience. Kids would see what the flag is or what the earthquake is. Just putting it in the book in front of them is not what I myself felt and I had a book in front of me when I was younger."*

### 4.5 Willingness for Acceptance of Digital Technology

Acceptance of technology is a perception of users and learners that technology is beneficial in lives. They are ready to learn to use it and make it an everyday thing for self growth. This section outlines different codes that emerged from the theme - willingness for acceptance of digital technology.

#### 4.5.1 Openness to Learn and give time for self growth

Teachers these days are very open to committing time for learning and getting acquainted with digital technology. It is evident from a teacher's comment."

> *"Most definitely I want to give time to learning digital technology. In my example, we are now introducing robotics. I'll make sure of what to do and also allow us to perform. I think that provides us with the necessary in order to have to teach this new type of development or this new type of technology"*

However another teacher gave a different perspective about learning digital technology and relates it to the age factor. A participant commented

*“I'm still quite open. However, we can have a lot of older educators who say a bit of aversion to technology because they don't know how to use it, right? However, we are, we are working with them and when they start to see the benefits of using it, they get excited and they are also willing to learn.”[T6CA]*

Moreover, teachers explained that schools are very optimistic about giving time for learning. One teacher remarked

*“With the way the world is currently evolving, we are open to moving our school into the digital way of teaching and learning. The transformation is inevitable as already we are to introduce coding and robotics as a subject in 2023.” [T8CA]]*

### 4.5.2 Mentoring, Training and Development for Digital Technology

As much as the schools are open and willing to accept and give time for digital technology they are also eager to receive mentorship, training and development in the field of digital technology. When asked if teachers would be interested in giving time and energy for training and development they said they want to be trained by professionals and personnel who know more than them. One participant [T2CA ] remarked willingness to mentored but only for someone who knows better than them

*“You're going to have somebody training me who knows far less than what I know. Uh, thank you. Then I would not, I mean, get qualified people*

*that are going to be an advantage. OK and shop now, obviously something needs to improve, but it already knows. So like I I and I think this because we need meetings where you have people who are teaching teachers how to teach for like telling teachers what to do when they themselves have their idea. What OK, makes sense. Yeah, it's a waste of your teachers' time if you are going to invite them to meetings and they go and watch what you are doing and currently that's the problem with our departments."*

Further, it was observed that teachers are more than willinging to be trained and mentored in digital technology.

*"OK. Yes, I would. I worked. Yes, as much time as I can for them because when you become a teacher, you become a lifelong learner and something that's gonna benefit you as a teacher, as a person and benefit the learners that you have to teach. I would give and I know technology can do that for me." [T5CB]*

Another participant T6C2 added

*"I would give a lot of time too."*

However, some have different perspectives of relating age with willingness to learn, For example, T7CA commented,

"*The younger teachers would be eager to get training; however the older teachers, those on their way out of the education system, frown upon the idea. Most are not computer literate and just refuse to learn."*

Another teacher commented [T8CA]

*"It should be available for the student body. Might be a problem for*

*other colleagues like there's a huge huge gap when it comes to the education sector. Currently in our country we find that the younger generation are very technologically advanced and they are willing and able to invest energy and time. But of course the only generation who don't have as much exposure in their primary degrees, they are a bit hesitant. But I think that they would invest energy and time so it could."*

An attitude of lifelong learning is also observed in teachers as one teacher [T5CB] remarked

*"Uh, yes, I think we do need teachers, we are constantly growing and learning and we are lifelong learning. So it would be best if we could train everyone and should be trained in how to use the digital technology so they can considerably pass it on to their learners and it works like that. Right."*

### 4.5.3 Eagerness for Digital Transformation

Digital transformation is transforming how business, education institutes etc are changing the way they operate. One teacher [T7CB] remarked that they are extremely open to change, Its evident from the comment

*"I would say very, very open because we are looking for the result of change. We are one of the schools that want to make a change."*

Another T8CA commented

*"The digital transformation and change. So we're very open, OK."*

Case A schools seemed more curious for change than Case B its eventident as Some schools are more open than other

*“The school was extremely open because. We have this example. We have other schools that come to our school. We have it outside in our car park. So we have people set out there and they watch the slideshow and just introduce the closest to them. But the pictures and without egos and and you know, just to welcome, hmm. And I've actually been doing these PowerPoints to introduce all these all these. And the things that we are doing in school, so the people that we like, I would guess so. No, it's small things like that. We were trying to move into where you don't have someone talking too much, but it's more experience in the school through the PowerPoint also.”*

### 4.6 Willingness for Implementation of Digital technology

Students, instructors, and other participants in the learning process all benefit from the digital transformation occurring in the education sector. These adjustments centre on enhancing accessibility and involvement through engaging and flexible learning. Online education becomes more affordable, thorough, and inclusive as a consequence. Microlessons, interactive videos or tests, games or AI-based learning techniques are just a few of the possibilities that higher education's digital transformation has made possible. Each of these choices enables a student to participate more actively and engage with the corresponding elements or tasks. Text-to-speech or colorblind-friendly visualisation, for instance, allow people with impairments to receive an education without any obstacles or challenges. However, below we will observe some inclusions that are required for implementation of digital technology.

#### 4.6.1 Need for Infusion of funds and resources to implement the change

Having the right infrastructure is very important in order to implement the digital transformation change. Teachers explained that the schools are ready for change but are waiting for the funds. One of the participants mentioned [T5CA]

*“So yeah, it's an ongoing process. As soon as funding is available, we try to do some improvements to allow us to know. I have improved our facilities and infrastructure, so with time I'm hoping that we get there.”*

Another participant mentioned T4CB

*“Having the right resources does help implement the change. The technology is quite useful to our hands. We have waited for that access and you know classrooms, we have a white board, we have projectors and all the teachers are allowed to use laptops. So we are assisted by the school in terms of count in order for us to use technology.”*

Third teacher from Case A [T5CA] commented,

“*Thank God that we are advanced and we do have smartphones in our classrooms. So we do have the infrastructure to implement digital technologies. and wow! While I speak I feel good that we have the resources. That's right. Yes, we do have great things.”*

Another teacher from case A was happy with the support from the school as stated from the comment,

*“I've been trying to promote the inclusion of technology in my classroom. So my school has been quite supportive and they have been trying to get us the resources. So we've now got a smart board in the classroom and you know, we got a portable projector so that more than one teacher can use these things at a time. There's now like, try to link most of the schools with Wi-Fi so that you can get onto the Internet.”* [T6CB]

Participant [T4CA] added,

*“But with our school, it really largely benefits our teachers because we feel like the students are more engaged when it comes to using a smart phone rather than a blackboard to teach. So. And our school, it does work.”*

A few affluent schools within the district have implemented the use of tablets and smart boards as a means of teaching and learning.

However, the teacher from Case B mentions that infrastructure limits the possibilities as said [ T8CB]

“*Download things, show the kids stuff in real time. So. This is trying to get the infrastructure again because we're rural and a lot of our kids come from these poor backgrounds. They don't have these technologies at home, so we are limited in how much of it we could actually do, but OK, we are making progress.*”

Moreover, another teacher from case B explains [T4CB],

*“You know. 100% will have to redo our infrastructure. We don't even have a lack of functioning computer rooms for the kids. So we are making steps towards it, but we're not there yet.”*

Furthermore [T8CB] added,

*“We have the classrooms and wifi at the school,however the human resources and actual technology needed to implement technology in the classroom we do not have nor can we afford it currently at the school.”*

## 4.7 Problems Digital Technology can Solve

For our educational system to move away from the conventional delivery formats of face-to-face classroom or lecture-style instruction, innovation and a disruptive business model are required. According to current trends, technology enhances educational initiatives in classrooms and colleges. The learning and teaching methods as well as student assessments are being impacted by its widespread adoption. Technology-enabled academic and administrative system that provides instructors, students, parents, and School Management with a stable, reliable, secure, and individualised end-to-end software solution.

### 4.7.1 Tech can break the monotony of traditional education system

The credit of breaking down the monotony of the traditional status quo of the traditional education system goes to digital technology. This is evident from participant [T3CA]'s comment,

*"Technology actually is one of the most innovative things that happens to teachers. And for students it minimises efforts. It creates excitement and entertainment. We know. It turns them into more socially and technology savvy. We can't be writing on board when children are more used to watching the screen. So that comes into play after all. Nowadays children don't wanna pick up a normal textbook and just read."*

Another commented [T6CB],

*"It's good to project a projected screen which shows good shows which are able to show videos related to whatever topic that they've been talking about perfectly."*

Another said T7CA,

*"Technology in education can help students to respond with the advancements that begin when you're going to the world around them. So it's the name of these different upscale and student bodies to track them for the workplace so that they have practical acumen when it comes to using the digital technology. Because ultimately I think that."*

### 4.7.2 Digital technology can fill in skills gap and make force ready for global explore

Digital technology has the power to make today's youth ready for global exposure and train them with skills required for global market ready.

It is evident from the remark of one participant [T6CB],

*"I didn't notice that there are major knowledge gaps and skill skills gaps that are present. In the student body who have no access to digital technology. So the problem is that it can be used to solve problems which include trying to produce the knowledge and skills gap I mentioned previously."*

Another commented [T7CA],

*"You know the aim of education is only to get students to participate in the bigger scheme of things to try and prepare them for the workplace. So upscaling them, trying to ensure that the use of the digital technology will render them a cut above the rest."*

Further T6CA commented

*“Yes. So they will be able to enter the global market. So they will have the ability to compete globally from having future focused skills and work and from their analytical skills.*
*I said, David, you're saying in a local mindset and trying to encourage a global mindset so that they can participate as a global citizen. Perfect. Ohh, that's the way of some answers.”*

### 4.7.3 Seamless Connection between Learner, Teachers and Parents

Digital Technology has the power to enhance the relationship between students, teachers and parents and make the whole process seamless which is evident from the participants' responses.

A participant mentioned [T4CB],

*“All communication from teacher to parents and learners will be direct by email via whatever platform we use. It makes it easier to store information and data, and it also safeguards us from losing information. We can use the devices to store these stories. The hard drives or we can use the online clouds and it also helps with another. Talking about the progress as we have mouths and it learns to activities online, everything is there. So see that making it better solves problems there. “*

Another teacher was of an opinion [T5CA] commented,

*“So like I said, I think to me my biggest thing to think about the world was how technology has bridged the gap with the during the pandemic and not being able to be in contact with people. So. And my communication made it so much easier to connect to people even though we couldn't physically*

*be there."*

Further T6CA commented,

*"If we had been using them in the classrooms, it would have been much easier to actually carry on with the work that we just, you know, stopped because we are in like a rural area and a lot of our kids come from poor backgrounds. They don't have the technology. So we couldn't go on to zoom or anything. So we have to stick to basic WhatsApp. So it's like instructions or short videos because obviously they don't have much access to pre Internet.*
*So it was quite difficult. Nothing having the proper. Resources would allow us to solve these problems. Thank you. And so if you talk about your school, do yours."*

### 4.7.4 Cloud Storage

Cloud-based tools allow teachers to set up virtual spaces where students can collaborate from any location using their favourite device. It also helps teachers to save and access data from wherever irrespective of place.

One teacher commented [T6CA],

"I'm a science and technology teacher, so for me a lot of the content that you teach your kids don't actually delete because they don't get to see it. Like this tone teaching about the solar system and planets. Hmm. Like bringing technology into the classroom, that's the engine needs to do things that they wouldn't actually see in the deed for you guys like Google has nice features where they allow you to explore."

T3CB commented,

*"Things so you get in to do these virtual reality tasks and it does help.*

*Great. Thank you all. So also in the industrial revolution which is in totality happening with the advent of the Internet and I do feel that post pandemic realised important technology because when we are remote and have no access to our kids with me teaching."*

### 4.7.5 Save Trees

Digital technology also greatly aids in saving paper which makes the world more sustainable by saving more trees.

one participant said [T6CA],

*"So how to engage that is and it will make it easier for us to store information to really gotta monitor learning performance through digital technology instead of paper trail."*

Second teacher [T3CA] believes

*"Tell me this listing of paper, not the paper.. I really love paper. That's my biggest love"*

Third teacher[T1CB] commented,

*"Ohh problem so you can see I think that when you set out papers and tests and stuff we have tickets. We have sent it to so many different people that have checked. So if my fellow colleagues started using more technology then that's what stopped me from putting up the paper and giving it to my dad and then speaking through a tablet or so. Living in constant on that and at that time I don't have to waste time testing in like in a. I can send them home and say OK use this site."*

Fourth teacher commented [T3CB]

*“In simple language technology can help save trees.”*

Fifth teacher discussed environment [T4CA]

*“And it's like the environment will be helped. Using less electricity to print out all these things because you'll be using your phone and you'll get your phone charged. OK. Sustainability.”*

### 4.8 Empowerment digital technology can bring in education

Along the road to modernization, education has made significant progress. Thanks to the introduction of new technology for teachers and pupils, many of the milestones that we have witnessed in this field have been attained. This is not shocking considering how prevalent digitalism is in our modern society. Today, a large number of tasks and activities that weren't tech-required in the past are now tech-required. The expectation for the modern classroom is to use technology as a tool to improve pupil performance and achievement. The introduction of digital programmes that will enhance student achievement and school development is a priority for policymakers and educators.

#### 4.8.1 Technology can strengthen education

Technology undoubtedly increased interest in learning by a factor of ten, and it helped students develop the analytical and critical thinking skills that are crucial for overcoming any obstacle. The learners  have benefited from it in both their success and their academic achievement.

Technology can strengthen education in so many ways, One teacher [T4CA] said from

*"Learners nowadays are so much more technologically advanced as compared to before, and they are inclined to want to learn things. Books you see, they're outdated. Anything that the learners need to know - They just type into Google and they're getting an answer. So I do think it's way more enthusiastic when it comes to technology. And they will tell you new things that they've heard or seen."*

Another teacher [T3CB] from Case B commented

"Technology does empower the education sector. Absolutely we are in terms of our resources, I'd say we are limited compared to other schools, but we are becoming more advanced by our principles, very advanced in terms of getting all of these resources for us and it actually is changing rural schooling."

### *4.8.2 Technology opens to varied careers opportunities*

The fundamental nature of labour is changing as a result of innovations like automation, digital platforms, and others. Understanding these changes can aid in the advancement of employees, business executives, and policy makers.

One teacher commented T4CA,

> *"Video automatics, Digital Technology makes learners want to pursue this career. I have had so many students coming to me. Digital technology is booming with new career choices, I can't wait for it."*

Another Teacher commented [T4CB],

*“So much so that I could build and I can program a robot, they're gonna have students that we teach control, and they'll probably come around saying them. When are we going to learn IT? We don't want to learn the programs we want to program. That's good. That's it.”*

Forth teacher exclaimed [T2CA],

*“Yes, the amount of effort and resources it takes for students to learn beyond what's in the textbook or what they have been told by the teachers is currently very high. Technology is one of the solutions that could massively decrease the amount of resources and effort required from students to go beyond the classroom by improving the access to learning material and information. In this scenario, that is, students find it difficult to understand the teacher's textbook. They will have other sources of information to learn from and potentially.”*

### 4.8.3 Technology can assist in creating a generation of learners

Technology makes it easier for learners to find information quickly and accurately. that creates an environment of learning. It is evident from the comment of a participant [T7CB],

*“I believe that through technology we will be able to educate and create a generation of learners who are not only knowledgeable but also creative and inspired to be better citizens. Education is the key to success and if we can use different means provided by technology to educate young minds, I believe we will change the country for the better.”*

Another teacher supported the idea by commenting [T5CA],

> *"It will solve the problem of lack of resources as learners will have access to the world of resources available online. Teachers will have easy access to tools to aid them in presenting lessons to learners. We are living in times where everything is moving to digital and children today are able to learn how to operate things very quickly."*

## 4.9 Summary

The outcomes and interpretation of the conclusions drawn from the qualitative approach were reported in this chapter. Thematic analysis was used to analyse the data. Major elements derived from each theme as codes were discussed in detail along with the evidence received from the participants. Major themes that emerged from the data are: Awareness about digital technology, willingness for acceptance of digital technology, Problems digital technology can solve, and empowerment digital technology can bring in education.

The findings of this research reveal that there are many positive factors that contribute to the impact of digital technology and that the impact of digital technology on education in South Africa is quite profound.

# CHAPTER 5 : CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Introduction

This chapter will revisit research questions and the research objectives along with taking a look into the themes that emerged from thematic analysis. The questions that are asked to the researchers will then be mapped with its key themes. This chapter will conclude and provide insights. Finally, recommendations will be provided by the researcher.

The chapter aims at concluding the impact of digital technology on education in South africa. We will try and give specific factors that contribute to the impact of digital technology in the South African education space. Concludingly, the researcher will provide the recommendations that will be provided by the researcher.

The study is aimed to explore challenges, investigate factors that enable students to learn with the help of digital technology which defines the impact of digital technology in education in South Africa.

## 5.2 Revisiting the research questions and thematic analysis

The research aimed to explore the impact of digital technology on education in South Africa. Based on which main or primary research question along with two sub questions can be found below:

| | |
|---|---|
| **PMQ:** What is the impact of digital technology on education in South Africa ? | **MO**: To explore guidelines that inform the impact of digital technology on the education system in south africa? |

| | |
|---|---|
| **SQ** : What problems can digital technology solve for teaching and learning ? | **SO**: To identify the pain areas that digital technology can solve |
| **SQ**: How can digital technology empower students for their learning? | **SO**: To investigate the factors that enable students in their learning with the help of digital technology ? |

**Table 5.1 Primary Research Questions and Sub - Questions**

### 5.3 Thematic analysis of qualitative data

Dominant themes emerged from the interview. The themes came out from the theoretical framework. The themes are as below along with a brief description of what each theme entails. The researcher interviewed 10 respondents with a duration of 15-20 mins. The following table maps the questions to themes and summaries the key findings.

| Questions | Key Findings /Codes | Themes |
|---|---|---|
| 1. What is your understanding of digital technology? | Electronic Devices<br><br>Something that Makes Life easy | Willingness for Acceptance of Digital Technology |
| 2. Do you think you as a teacher will give appropriate | Teacher showed openness to learn and give time for learning | Willingness for Acceptance of Digital Technology |

| | | |
|---|---|---|
| time and energy in getting the training for digital technology? | | |
| 3. How open are you or your school is for accepting digital transformation change ? | School were excited about Digital Transformation<br><br>Teachers are looking forward to Mentoring, Training and Development | |
| 4. Do you have the infrastructure to implement technology in the classroom? | Some schools have the infrastructure some don't | Willingness for Implementation of Digital technology |
| 5. Have we been able to talk to another school or user who has used/implemented the technology or service? | Schools will need funds and resources to implement the change | |

| | | |
|---|---|---|
| 6. Do you think technology can help in teaching and learning in schools? | Tech can help in seamless connection between stakeholders<br><br>Tech can break the monotony<br><br>Digital Tech can fill the gaps | Problems digital technology can solve |
| 7. What problems will it solve? | Save Trees<br><br>Store data on Cloud | |
| 8. Do you think technology will empower students and teachers for their learning? | Tech can strengthen education<br><br>Tech opens to varied career opportunities<br><br>It can assist in creating a generation of learners | Impact Digital Technology can Have? |

**Figure 5.2 Thematic Analysis**

## 5.4 FINDINGS

The results of the study indicate the following impact digital technology can have on the education system in South Africa in addition to the overall impact it can have on the economy as a whole.

- **Economic Improvement**

  We are residing in a period of fascinating technical advancements. Transformative change is being driven by digital technologies. The economic paradigm is changing. The product and factor markets, as well as business and work, are being drastically changed by the new technology. The boundaries of the digital revolution are being pushed by the most recent developments in artificial intelligence and associated technologies. The COVID-19 pandemic has accelerated the pace of digital transformation. Future is approaching more quickly than anticipated.

- **Global Exposure**

  When compared to other economic sectors, technology has had far less of an impact on education, teaching, and learning. It has altered how we interact, access information, work, and even play. We think that the main reason for this limited impact is that technology has largely been employed to replace analogue tools without much thought being paid to utilising technology's comparative advantages. Compared to traditional "chalk-and-talk" classroom instruction, these advantages include the ability to scale up standardised instruction, promote differentiated instruction, boost student engagement, and broaden opportunities for practice. Learners will succeed when schools embrace technology to improve the work of teachers and the amount and quality of instructional content. It makes the learners ready for the global market and hence

global exposure.

- **Reduction in the Skill Gap**

  Even before COVID-19 significantly altered the way industries operate, the skills gap in the workforce was widening. A significant need exists for the current and future generations to adapt to a digital world and gain digital skills, or risk being unskilled for a variety of vocations. Technology breakthroughs are drastically altering our working lives. Also, we are more linked than ever, which enables us to maintain contact and carry out our jobs from almost anywhere in the world. Because of these fundamental changes and how quickly they are developing, employers need to build new skill sets. As a result, some worry that a "skills gap" is emerging. Although there is some disagreement regarding the magnitude and severity of this skills gap, it has the potential to lead to some serious problems. We look at what it is specifically, what fields are missing in particular talents, and how to stay on top of your personal development for your job.

- **A Connected World**

  The use of digital technology has revolutionised almost every aspect of contemporary living. A few of the areas that have recently undergone revolutions include job, play, retail, entertainment, and communications. Nowadays, it is rare to find an electronic device or piece of machinery that does not utilise digital technology in some way. Digital technology enables smaller, quicker, lighter, and more adaptable devices. Large amounts of data can be stored locally or remotely and moved around practically immediately. Even the concept of "information," which once only referred to words and numbers, has expanded to include media like images, audio, and video.

- **Access to Lot of Learning Material**

  Personalised learning adjusts instruction to meet the needs of each student. This might be in terms of delivery, tempo, and content. It acknowledges that when it comes to education, there are rarely any absolutes. Students will learn in various ways and at various rates, after all. They will have different demands, and they will react differently to spoken, written, and visual information.
  Each student can pursue their own learning path in a learning environment created by a contemporary learning platform. For instance, more resources may be activated to assist students who are having difficulty with a particular subject. A different student who is proficient in that subject would not require additional material, but they would need to spend more time on another aspect of the course.

- **Lack of Resources will be Solved**

  Finally, developments in AI technology now enable teachers to differentiate instruction, giving extra guidance and developmentally appropriate content to pupils whose knowledge and skill are significantly below or above grade level norms. The most recent "intelligent" tutoring programmes can identify a student's precise faults as well as their present areas of weakness. These technologies might make it easier for teachers to connect with learners who are less prepared academically and who are farther from the norm in their classroom.

- **Increase in employability**

  After completing their formal education, learners start looking for

employment in a market that is extremely competitive and where having a degree may not be sufficient. Their hiring will be founded on their qualifications and abilities. Early exposure to digital education will help learners develop a variety of technical skills as well as soft and hard abilities. As a result of the changing times, the economy is moving in the direction of knowledge- and skill-based hiring, which will ensure that the employee has all the necessary technical skills to apply for a job offer they are deserving of. Due to their digitally enhanced education, which has equipped them to make the appropriate provisions, they can be the best option for any workplace.

- **Increase in GDP**

Students can demand higher salaries from employers when they have the necessary and in-demand skills, and employers will also be ready to pay them. A rise in the gross domestic product and the gross national product are correlated with an increase in the gross domestic income. The national accounts of the nation, which detail the annual investment, income, and expenditure of each industry, are used to determine GDP. It is incorporated into the computation of the nation's overall revenue. Both the students and the institutions instructing them must adhere to the principle that students must learn to make. They will directly benefit from the increase in income by having more purchasing power and leading a better lifestyle.

As per the literature, Technology adoption is not only one aspect of technology integration in teaching and learning. When adoption and integration go hand in hand, education can fully utilise the potential of digital technology. Adoption of technology refers to a situation in which technology is acquired and used in teaching, whereas integration refers to the seamless integration of technological components into everyday classroom activities. Although domesticating, adopting, and using

technology in the educational environment has many benefits as found out in findings above.

### 5.5 RECOMMENDATIONS

Future doctoral and post-doctoral research will be built on the findings of this investigation. The results of this study also recommend more research on the following.

Traditional educational and training methods have been shaken by the COVID-19 pandemic, forcing educational institutions and businesses to develop new strategies for content delivery and remote engagement. The need for flexible, scalable solutions that guarantee continuous knowledge transmission independent of physical and geographical constraints has been made urgent by this crisis. It is recommended to conduct research on how an amalgamation of the African digital landscape and African educational landscape can happen. on how emerging technologies, such as artificial intelligence, immersive learning, data analytics, and learning management systems, can be combined in low-tech settings to meet educational and learning goals.

### 5.6 Conclusion

Conclusingly, The way that learners learn has already been greatly impacted by digital learning. In addition to giving them advantages never before possible, it also gets them ready for a society that not only uses technology but also depends on it. Now is a great moment to embrace the trend of digital learning if we want the best for your learners. The use of technology in education has increased collaboration. Subject matter experts can gather in online forums to talk subject-specific issues, look over the syllabus, and develop assessments to improve the teaching process. Teachers can provide individualised instruction to meet the requirements and learning styles of each student. Every person has a

distinctive learning approach that is almost as individual as their fingerprints. Today, any ability can be taught online in a step-by-step format, from beginner to expert. Such instant learning programmes can be customised to individual learning styles and in individual modules by effective instructors and multimedia specialists. Concludingly digital technology in education brings economic empowerment, global exposure, reduces skill gaps, makes the world more connected, solves lack of resources, increases employability and ultimately increases GDP.

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## APPENDICES

### List of Tables



### List of Figures



**Annexure A : Interview Questions to determine the impact of digital technology in South Africa**

1. **What do you think is digital technology?**

2. **Do you think technology can help in teaching and learning in schools?**

3. **What problems in your opinion can digital technology solve?**

4. **Does your school at this point have the infrastructure to implement technology in the classroom.**

5. **Have we been able to talk to another school or user who has implemented the technology or services apart from your school.**

**6. Do you think as a teacher of if they are training sessions being organised from your school or from any other corporate body? Would you be able to give appropriate time and energy and get the training for digital technology?**

**7.How open are you or your schooling, excepting the big digital transformation change which is what is really coming?**

**8. And the last question, do you think technology will empower students for their learning?**

**Annexure B: Interview Questions Transcript**

Interview 1

**Question number1** : What is your  understanding of digital technology?

**Respondent** Understanding will be able to do things without having to put much effort into examples giving a lesson in class. I don't have to pick myself up. There's a little  page on the board where I can just share my screen and people can see using the projector what technology is.

Alright. *Do you think technology can help it? Sorry, mam. Can you repeat?*

**Question 2 : Do you think technology can  help in schools?**

**Respondent**  Yes, yes, most definitely. It actually is one of the most innovative things that happens to teachers. And for students it minimises efforts. It creates excitement and entertainment. We know. It turns them into more socially and technology savvy.  We can't be writing on board when children are more used to

watching the screen. So that comes into play after all. Nowadays  children don't wanna pick up a normal textbook and just read.

You rather project a projected screen which shows good shows which are able to show videos related to whatever topic that they've been talking about perfectly.

*Thank You so much.*

**Question 3: What do you think? What kind of problems can digital technology solve in a school environment?**

**Respondent:**  I think it will solve the problem of attention. You know, we have kids with lots of learning disabilities and a lot of them are coming from different backgrounds.

Wouldn't you be attentive at one point before the talk becomes a problem? So why did you have something that is technically time when you get to see that all the children will settle down and then they can talk to what you are doing?

Ohh, I'd talk, but the thing I want is to play a video about showing their pain or if you look at it in the book it will actually check that out because they cannot see it. No, they cannot see. It's actually not that you don't have to play a video.

*OK, sorry, you were talking about the problems that it can solve. Yeah. So you can help. You know what it's like in the day.*

*The problem is in the cloud so technology helps us solve participants.*
*The question number  four is.*

**Question 4 : Do you have the infrastructure to implement the technology in schools? Meaning, does your school have the infrastructure, implement technologies in the classroom?**

**Respondent :** I was still so the technology is quite useful to our hands. We have waited for that access and you know classrooms, we have a white board, we have projectors and all the teachers are allowed to use laptops. So we are assisted by the school in terms of count in order for us to use technology.

**Question 5 : Perfect. Has he been able to talk to another school or user who has used or implemented the technology or service?** Like apart from your schoo, have you ever interacted?
**Respondent :** Yes. So I belong to a school group. We interact with our system.

**Question 6 : OK, OK. Perfect question last , do you think as a teacher you will give appropriate time and energy in getting the training for digital technology if your schools, if the school provides?**

**Respondent :** Most definitely. Most definitely.
In my example, we are now introducing robotics. I'll make sure of what to do and also allow us to perform.

I think that provides us with the necessary in order to have to teach this new type of development or this new type of technology.

**Question 7 : And how open are you or your school for accepting digital transformation?**

**Respondent:** I would say very, very open because we are looking for the result change. We are one of the schools that want to make a change.

**Question 8 : OK. And the last question is, do you think technology will empower students for their learning?**

**Respondent :** Video automatics IT makes them want to pursue this career. I have had so many students coming to me since then I can't wait for it.

So much so that I could build and I can program a robot, they're gonna have students that we teach control, and they'll probably come around saying them. When are we going to learn IT? We don't want to learn the programs we want to program. That's good. That's it.

Thank you so much. I have recorded.

**Interview 2**

**Question 1 : That's the first question to you is in your understanding. What do you think is digital technology?**

**Respondent** Technology. When you say sort of devices or tools or electronics and that we generally would use to improve our quality of life. So what we do as a geography is that we take this particular technology and we try to incorporate it into our curriculum.

It comes out of the hardware.

**Question #2 is, do you think technology can help in teaching and learning in schools?**

**Respondent** Technology in  education can Help students to respond with the advancements that begin when you're going to the world around them. So it's the name of these different upscale and student bodies to track them for the workplace so that they have practical acumen when it comes to using the digital technology. Because ultimately I think that.

**Question #3 What problems in your opinion can digital technology solve?**

**Respondent: And** I need school. I didn't notice that there are major knowledge gaps and skill skills gaps that are present. In the student body who have no access to digital technology. So the problem is that it can be used to solve problems which include trying to produce the knowledge and skills gap I mentioned previously.

You know the aim of education is only to get students to participate in the bigger scheme of things to try and prepare them for the workplace. So upsetting them, trying to ensure that the use of the digital technology DT will render them a cut above.
Yes. So they will be able to enter the global market. So they will have the ability to compete globally from having future focused skills and work and from their analytical skills.
I said, David, you're saying in a local mindset and trying to encourage a global mindset so that they can participate as a global citizen. Perfect. Ohh, that's the way of some answers. The

**Question #4 is do you have the not you but the school does the school at this point has the infrastructure to implement technology in the classroom.**

**Respondent :** Like high school guys have up the infrastructure, so we are actually participating in a pretty major transition towards more technological

advancement. So I recently purchased geographical information systems for the geography departments and we started rolling that out without junior students and our senior students just so that they have exposure to what's out there. So that it's not unconscious up within once they meet other students who have had. Access to this technology in university. It is sad though.
We being appropriate, I will set another package, so that was.
Lower end of private schools. They didn't have the infrastructure available. Government schools in one of the public sectors do not have the infrastructure there. OK, alright. Just because we're trying to now transition our curriculum to become more technologically advanced. But we come to the IB because we have my public schools closed fast. Majority of the population don't have the infrastructure. OK. Actually I would say this.

**Question 5: Have we been able to talk to another school Ohh user who has implemented the technology or services apart from your school.**

**Respondent :** I have. Have I been able to? Yeah. Well, are you able to practise with the school systems? That's what my schools are networked with. Saint Johns in particular. But what happened was.
So I hit up chocolate before all of the traffic schools across our country and I tried to network with other things but the majority of them haven't incorporated as much digital technology into their education system as we have. So there has been a situation where I try to think twice, but we ended up being the collection and other schools have some time to us. So buy some digital technology.

**Question 6 : Do you think as a teacher of if they are training sessions being organised from your school or from any other corporate body? Would you be able to give appropriate time and energy and get the training for digital technology?**

**Respondent: It should** be available for the student body. Might be a problem for other colleagues like there's a huge huge gap when it comes to the education sector. Currently in our country we find that the younger generation are very technologically advanced and they are willing and able to invest energy and time. But of course the only generation who don't have as much exposure in their primary degrees, they are a bit hesitant. But I think that they would invest energy and time so it could.

**Question 7 : How open are you or your schooling, excepting the big digital transformation change which is what is really coming?**

**Respondent: Yeah**.
OK.

**Question 8 : And the last question, do you think technology will empower students for their learning?**

**Respondent:** I teach using digital technology compared to students that I taught previously, working with much more disadvantaged and underprivileged students who have exposure to some sort of digital technology. That would be my subject. But across the subject, the subjects are often around school. They have a global perspective.
They thrive in a university environment. They go out into the working world and they want to thrive in that sort of environment as well, and then continuously, how they improve themselves because it's something that is so right up there and and it's something that they actually enjoy doing compared to the traditional methods, so, OK, perfect. So this marks the end of the interview. But from the questions that you've just answered, you mentioned that you have worked with.

**Interview 3 - Done**

**Question #1 So the first question for the teachers and a private school is in your understanding what is digital technology?**

**Respondent** Yes. Various means of technology like your pocket fast. Are your computers asking for the most feature phones? Things like that

**Question #2 Do you think technology can help in teaching and learning in schools?**

**Respondent: Yes**, definitely. I do think so because of other children.

**Question #3 But it's alright, well, what problems do you think digital technology can solve?**

**Respondent** OK, as I said, some children have a short attention span. So with videos for example, this can improve their attention span, mention their maths better. Then when signing using the textbook.

**Question #4 Does your school have the correct infrastructure which is required to implement the digital technology in the classrooms?**

**Respondent** No

**Question #5 Have we been able to talk to another school or the user?**

**Respondent** Uh, which user implemented the technology or service like have you in your capacity spoken to any other school or any other user who has implemented the technology or the service?

No, not OK. Alright.

**Question #6 Do you think as a teacher you will be able to give appropriate time and energy in getting the training for digital technology in case your school provides 1?**

**Respondent: Yes**, sure. I was trying to ask you, do you think as a teacher if your school organises training sessions for digital technology, will you in your capacity will be able to give appropriate time and energy to that training?
I will be up to you. OK. Perfect. OK, now coming to your school.

**Question #6 How open are you in your capacity or your school for accepting digital transformation change?**

**Respondent** I thought it would be. I think so. The principal, but only in individual capacity and very open to change, very open to change. That's very good.

**Question #7 And lastly, do you think technology will empower students for their learning?**

**Respondent** It was an Impala. Yes.

**Question #8 Do you think technology can empower the students for their learning?**

**Respondent** Yes, I do. It does  empower students. OK, that's perfect. I really appreciate your time. Do you?

**Interview 4**

Exact time high school, public sector for high schools. Ohh, that's great. Which school likes the area?

*OK, I don't worry, I won't be. These details won't go anywhere, so it won't be a problem. Just trying to understand which area, because it's a public school.*
*Uh, I'm gonna hold one second.*
*I will.*
*Yeah, no problem. Yeah, it's.*
*OK, so is this like a proper rural school? Like, how is it?*
*And I've been to school. It's quite one of the better schools in Dublin with three sources and funds. So we are much better off than the full scale government schools, OK?*

*OK. So it's like so.*
*How does it work? The first one is a rural school with almost no funds. All of the things like that, and then it's the school that you are with, and then the urban schools or the private schools. Is this the hierarchy?*
*That's a good feeling school, that resource.*
*Well, no, I understand that. What I'm trying to understand is, is there any school which is less fortunate than the others? Are they more like rural schools? OK, so let me give you my background. I don't. I'm not a South African. I am a foreigner. So I'm trying to understand how it works in South Africa.*
*So first is the rural school, please.*
*Which obviously there's different areas under resourced areas and then you do get the full scale government schools which are in India but the areas do not have funds and resources due to the lack of school funds, OK, school fees, OK. And my type of school is in between Great Falls where it's a government*

*school, but it's a fee paying school where learners can afford to play baseball. OK, I got it now. And then you get the private schools.*
*Taking it at school is OK, so in the public sector, they're actually two types. One is fee paying and one is not fee paying.*
*And that is me speaking and one is not speaking. It's OK. OK, alright, that explains alright. So I'm gonna start talking. I'm recording now. Once you give me the questionnaire and once the questionnaire is complete, I would stop recording it. So there will be no lack of your personal information. Then I'll stop recording when I ask you more questions about if you can refer me to someone else's well so. But let me let me first start the question and I I'm sure you would have taken a look at it.*
*As teachers of school questions the group too.*

**Question #1 Yes. OK. So the first question is in your understanding, what is digital technology?**

**Respondent** I think it's just the technology is still subject to all devices that seems to have itself.
I think that's the ticket to digital for making life easier for specific purposes. Teaching, learning any type of work, etcetera

**OK, question #2, do you think technology can help in teaching and learning in schools? So basically?**

**Respondent** Yes.

So how to engage that is and it will make it easier for us to store information to really gotta monitor learning performance through digital technology instead of paper trail. OK,

**Question #3 What problems, in your opinion, can digital technology solve?**

**Respondent ：**All communication from teacher to parents and learners will be direct by email via whatever platform we use. It makes it easier to store information and data, and it also safeguards us from losing information. We can use the devices to store these stories. The hard drives or we can use the online clouds and it also helps with another.
Talking and not the progress as we have mouths and it learns to activities online, everything is there. So see that making it better solves problems there.

**Question #4 OK in your school where you currently do you think you have the correct infrastructure to implement technology in the classroom?**

**Respondent** Actually asked us. Yes, I do have a digital check and a laptop which helps me to implement digital technology to some extent. OK,

**Question #5 In your own capacity. Did you ever get a chance to speak to another school or a user who has implemented technology in the school?**

**Respondent** Yes, yes.

**Question #6 OK. On that note, will you as a teacher, if your school provides training for digital technology, will you be in your capacity, able to give time and energy to it through that?**

**Respondent** Yes.
OK.

**Question #7 And the school that you're currently in, how open are you or your school for accepting the digital transformation change?**

**Respondent**: The digital transformation and change. So we're very open, OK.

**Question #8 And the last question, do you think technology will empower students for learning?**

**Respondent: It's** definitely the generation now. These are so tech savvy and they're moving towards the digital era for almost everything at the game and absolutely nothing so much. So here's to an extent, most of the people help. OK, alright, that ends the interview which was very quick.
I'm gonna stop recording now. One second.

**Interview 5**

*It's nice funded because it's not a no fee school, OK?*
*OK, they're still paying the fees, but it's just less.*
*First or second afford answer 800 and this year and those that cannot afford applying for the exemption. OK, so with an exemption, the government pays 400 per learner. Hmm, but applies for exemption and.*
*That was like I I would say 70% of the learners apply for the exemption and yet. Ohh, OK, OK, I get it. Yeah. Thank you for giving the background because digital technologies are directly influenced by finance. So it just helps understand what kind of school and what kind of services they have. So I'm sure you've gone through the questionnaire document.*
*Alright, so I'll start taking the questionnaire just to let you know that this questionnaire will be recorded. However, it is anonymous, so there won't be any problem with privacy or anything. Both the interviews I will send you a document*

*to just sign that it was taken in consent and it just helps us take the record because when we translate the interview in a Word document, it's just good to have that signed document from your side.*
*But thank you.*
*After thinking I'm gonna ask you if you can refer me to someone or give me some contact numbers from your school.*
*Ohh that will be a post interview and one last question. By any chance is it possible to make contact with the principal of the school that you're currently in?*
*It was possible.*
*OK.*
*Like to ask what you thought so I can tell you who is more likely to give you information. OK, so it's the questions that I'll ask you. We also ask the principles because they are alternately responsible for decision making. So the questions that I can, OK, you mean the questions that you gave me above the questions I had to answer no. The blue belong to group 2 because you're a teacher of the school. We also interviewed principals.*
*Of the school. So even if it's a face to face meeting, uh, I don't really mind coming over. I'm sure it's in Durban, right?*
*Yes, but it's Umm.*

*It comes in two parts, an hour away from Devin.*
*One hour away, OK.*
*On my side, I would really like to explore a bit of a rural school, so if the meeting is possible in person as well, obviously on phone is definitely possible, but if it's possible and I would really love to just come and see how the how the infrastructure is and what kind of efforts will be required for additional technology to operate in its full form there.*
*OK, no problem.*
*Looking forward to that type of work.*
*If you don't want it, you don't wanna come. I can set up a date with what you hear, OK? And I think with him here to speak to you over the phone. OK, that*

*would be perfect. So I'll drop you a message with the date so that if possible, you can, if possible, we can schedule our face to face meeting and then that would be a good example. I will just speak to him tomorrow about that. Sure. And I'll just send you a message to say, you know, he would not say no yes or face to face. And I don't think so.*
*And she would say no to an interview. OK.*
*Yeah. So when it comes to things like this, he's very open to. OK. Awesome. That's great. And apart from that, do you know a few more teachers and maybe well funded public schools who would be open to give the 10 minutes of their time?*
*I'll send it, I can try. I can send you the numbers. OK. Thank you. I really appreciate your help. So, alright. I'm gonna start with the questions. So in the first question in your understanding, what is digital technology?*
*OK, OK, let's talk at the gym. Say.*
*Purple.*

**Question #1 : OK. So the first question is in your understanding, what is digital technology?**

**Respondent :**I use technology. I just have my laptop and I'm gonna speak that it is connected to my laptop so I use things like. It's an app called Jolly Phonics I use.
And I use YouTube to talk about using YouTube because he comes from really rural areas and lots of them don't have the data or the.
The phones or even the adults help them show them how to use these things. And I know that personally it has taught them more than just reading from a book because it's actual and they may not be in that place, but it's like handling experience. See what the flag is or what the earthquake is. And I mean using YouTube and I look, what is the audience? Is this exposed to technology?
Just putting it in the book in front of them is not what I myself felt and I had a book in front of me when I was younger. I was happy to have that, but.

Ohh name it. Don't worry, it's boring for them so I feel like technology.
What?
Is it because he didn't want to learn using?

**Question #2 : OK, perfect. What problems, in your opinion, can digital technology solve?**

**Respondent** Tell me this listing of paper, not the paper.. I really love paper. That's my biggest.
Ohh problem so you can see I think that when you set out papers and tests and stuff we have tickets. We have sent it to so many different people that have checked. So if my fellow colleagues started using more technology then that's what stopped me from putting up the paper and giving it to my dad and the speaking through a tablet or so.
Living in constant on that and at that time I I don't have to waste time testing in like in a.
I can send them home and say OK use this site and to the to the.
There was a question that, OK. OK. OK. Yeah, yeah. So basically one problem that you say that it can help soft drinks.

**Question #3 So the question was, what problem would it?**

**Respondent :** So I think from your opinion the first one that you think can help save trees, right?
What's the county of cheese? It will help save time. Hmm.
And it's like the environment didn't help. Using less electricity to print out all these things because you'll be using your phone and you'll get your phone charged. OK. Sustainability. OK, I get your point. Yeah.

**Question #4 is, do you have or or your school? Does the school have the**

**infrastructure to implement technology in the classroom?**

**Respondent :** Ah. OK, the physical classrooms are fine. Umm, we can eat into that. The screen and projector and stuff. It's security but.
But actually it is possible to have one in each classroom. Hmm. But does this have a proper infrastructure in terms of a Wi-Fi connectivity project?

**Question #5 Uh, all of that equipment, is it, do you think it's visible for your school to operate digital tech classes in full fledged?**

**Respondent:** But honestly at this point.
That's not, uh, that they'll be able to afford. OK, I'm problem, OK.
Because if you think about putting it, the smart board or projector in each classroom, that's.

So they use the, you know the blue box that you get to the bottom box, right? But they show them on the projector how to fill in.
And So what do you want to video? They use the app to teach something and also the teachers use.
What's this?
Athletes Dojo.
OK, we have the pins get an update. I'm not too sure about the name of the app. The teacher gives an update on each learner and their progress right on like a continuous speed space of maybe like once a week or.
OK, no.
What's up? What's the time? But I know that this is what they use and it helps both the learner and parent and the teacher communicate, right? And I've seen them with a friend of mine who I work with and like while she's in school, she gets an update on the child. Hmm. That's when she goes home. She has

something positive or something to correct the child about. Umm. And you know that's how technology is making things really like community, you know, like. So anyways, get time to go and speak to the teacher, but he is working together.
So this is where you have all observed this and this is happening where a teacher is able to send a response to the fact that to the parents about the child's progress, this is happening in a private school or a well funded public school. What school is it, which funded school it is.
It's well funded.
Alright, alright, I'm in public school. Ohh he's public. Ohh. OK. Yes, it's public, but it's not. It's like an X Model T school and I'm not sure if you but it's still learning from the government. OK, OK. Alright. Yeah great so.

**Question #6 Ohm like coming back to your school and you as a teacher. What do you think in your capacity as a teacher? Will you be able to give appropriate time and energy in case your school organises digital technology training sessions for you as a teacher?**

**Respondent** OK. Yes, I would. I worked. Yes, as much time as I can for them because when you become a teacher, you become a lifelong learner and something that's gonna benefit you as a teacher, as a person and benefit the letters that you have to teach. I would give and I know technology can do that for me.
I would give a lot of time too.
OK, perfect. Thank you..

**Question #7 How open are you and your school for accepting the digital transformation change?**

Respondent ：The school was extremely open because.
We have this example. We have other schools that come to our school.
Ohh.
Market.
So let me go probably.
Something something slideshow because we have it outside in our car park. So we have people set out there and they watch the slideshow and just introduce the closest to them.
But the pictures and without egos and and you know, just just to welcome, hmm. And I've actually been doing these PowerPoints to introduce all these all these.
And the things that we are doing in school, so the people that we like, I would guess so.
No, it's small things like that. We were trying to move into where you don't have someone talking too much, but it's more experience in the school through the PowerPoint also. But

Daily and in every lesson in every test. Umm yeah, I love it. I appreciate you and task **Question #8** for you. Ohh, coming to the end of the intervie**w, the last question is do you think in your opinion technology has the power to empower the students for learning?**
**Yes.**
He plans and you have this device in my head. It is a billion encyclopaedias.
Hmm. In your hand.
If you teach a child that if the child likes cars and the child wants to learn, and what cars you don't just have to go and find the book and teach them how to use the technology, use Google, Google videos, Google Information and even though it's something that they like, they are learning at the same time.
Ohh.

It was just nothing.
OK, so that ends the interview with you. I would really appreciate your time and your enthusiasm. I really felt very nice interviewing you.

**Interview 6**

*Before we start the interview, please would you mind giving me some insight about your school? It's a private school, a public school funded and non funded. What kind of school is it?*
*The reason I think slowly government funded OK as well as well the school fees come with the rest of the course. OK. So I will interview people from public government funded schools, but few schools were not sufficiently funded. So in what range does your school belong? Is it a well funded government school or does it lack funds?*
*So again, 6 Model T schools. So we are a bit more better funded than other schools, OK.*
*However, because we are in a rural area, we don't really get service delivery out here.*
*OK, rural area. So it's a rural school, but a public school in A A but well funded. Yes, ohk. OK, alright, OK. So just letting you know that this interview will be recorded and post the interview. I will send you a letter which says that this interview was taken with your consent.*
*OK, that's fine. OK, alright. So I'm gonna start the questions and I will also start the recording. However, the interviews are anonymous. So I don't think it will be a problem. OK. That's right. One second.*

**Question #1 To start with, uh, sorry, what in your understanding is digital technology.**

**Respondent** So I understand that I found this on the web is that everything to do was electronic technology, whether it's programming or tools or systems to generate or Princess and store data, whether it's online. So things like gaming, your social media, robotics, AI, all of that. OK, cool.

**Question #2 Do you think technology can help in teaching and learning in schools?**

**Respondent** I 100% think it can. I'm a science and technology teacher, so for me a lot of the content that you teach your kids don't actually delete you because they don't get to see it. Like this tone teaching about the solar system and planets. Hmm. Like bringing technology into the classroom, that's the engine needs to do things that they wouldn't actually see in the deed for you guys like Google has nice features where they allow you to explore.
Things so you get in to do these virtual reality tasks and it does help. Great. Thank you all. So also in the industrial revolution which is in totality happening with the advent of the Internet and I do feel that post pandemic realised important technology between because when we are remote and gotten no access to our kids with me teaching.
Their hiding went to move platforms like WhatsApp and you know if we have the capitalist sources, I think you know, they wouldn't have been such a barrier to learning during that time. So so from this.

**Question #3 If the school implemented it, do you think there were some problems that digital technology solved? Or I can put it in a way that what problems do you think digital technology can solve in a classroom setting?**

**Respondent** So like I said, I think to me my biggest thing to think about the world was how technology has bridged the gap with the during the pandemic and not being able to be in contact with people. So. And my communication

made it so much easier to connect to people even though we couldn't physically be there.
If we had been using them in the classrooms, it would have been much easier to actually carry on with the work that we just, you know, stopped because we are in like a rural area and a lot of our kids come from poor backgrounds. They don't have the technology. So we couldn't go on to zoom or anything. So we have to stick to basic WhatsApp. So it's like instructions or short videos because obviously they don't have much access to pre Internet.
So it was quite difficult. Nothing having the proper.
Resources would allow us to solve these problems. Thank you. And so if you talk about your school, do yours.

**Question 4 : As a teacher, now that you know that technology can do a lot, will you, in your capacity, be interested to give the appropriate time and energy for training in the training for digital technology?**

**Respondent** I would. I'm gonna teach you something that's always your planting. Fix lunch to constantly eat what you know and you still set. Especially now with the government trying to implement robotics into primary schools. So it is good to constantly improve my visual skills. Coming back to school. How open is your school for accepting this digital transformation change?
I'm still quite open. We can have a lot of older educators who say a bit of aversion to technology because they don't know how to use it, right? However, we are, we are working with them and when they start to see the benefits of using it, they get excited and they also willing to learn. So our school is very open to, OK. So just A twist of a question here.

**Uh, you said that your school is very open to the change, but do you think**

**that the school has the right resources or will get the right resources in the time to come to implement this change?**

So yeah, it's an ongoing process. As soon as funding is available, we try to do some improvements to allow us to know.
I have improved our facilities and infrastructure, so with time I'm hoping that we get there. He created the last question, do you think technology will empower students for learning?
It went out. Six nowadays are so much more technologically advanced as compared to before, and they are inclined to want to learn things from books they see. They're outdated. Do I mean anything they need to know? They just type into Google and they're getting an answer. So I do think it's way more enthusiastic when it comes to technology. And they will tell you new things that they've heard or seen and.
Some question how much of the Internet you actually are on and so.
It does empower it when we.
OK, well that's that.
I hope that you will be coming from a not so well funded or comparatively well funded rural or public school. I just hope that there are more teachers like you who are so enthusiastic about the digital transformation change.

*God, I really appreciate your time. Just a favour, do you in your network know more teachers who would be interested to give the 10 minutes of their time? It could be from public school or from private school. Doesn't matter.*
*I will and then I will thank you so much. I would really appreciate that.*
*I'll send you a form for you to sign and send back to me, and I'll wait for the contacts from your side.*
*OK, so no problem. Thank you so much. I appreciate your help. Thank you so much. Bye.*

**Interview 7**

**Question #1 What in your opinion is digital technology?**

**Respondent** I just helped the kids understand abstract concepts. It also links the kids.
To what they actually did, it can make sense. I mean, if you take the kid or child from a rural area and you're trying to teach the child.
Let's say something about educating what you have got. OK, let's do space. You're trying to teach the child something about space related, right? You want to show the exact example, like the fact that the same basically is much larger than what they think. Just showing them on the computer or even showing them something like that.
Huh.
It definitely helps them to see it rather than just hear about it or even and I, you know, I know some schools, they tell them, you know, pretend to be the son and you'll be the other child is the sun, another child that you move around. The same I mean just the visuals. It just makes the kids feel more interested in.
Get them interested in nothing because many of them are also visual learners, so that helps them. But visual Wellness helps them to be equal also cause immunity is continuous from the entertaining.
And just teaching with the teacher in front, reading up notes.

**Question #2 OK, do you have the infrastructure to implement technology in the classroom?**

**Respondent** And they're different.
OK, have you been able to talk to another school or a user who has implemented the technology or service?

It's many schools around you that have many copic schools around the same technology, huh?
Coping skills get her to enjoy using X because I mean just, you know, the fact that apart from just making things virtual like you have other apps that are very like you got programs, online programs. I spent metrics that kids can go practice online. So instead of just doing boring months where you're writing down sounds, you can go online on these sites and actually.
Do you need sons? And then there's a timer. You earn rewards, you know, if you do it quickly now, you can dress another.
Because I mean 'cause, you can even take on kids across the world and that's like motivational for the kids because, you know, all kids want to be the best. So they are eager to do it. So I'm sure, yeah. Schools. I've only spoken to people that have schools because I mean, the public school failure is not because we don't have such technologies. But yeah, they

**Question #3 definitely agree that there's a need for this. OK. Do you think as a teacher you will be able to give appropriate time and energy?**

**Respondent** In case your school organises training sessions for digital technology.
Yeah, sorry.

**Question #4 Able to give your time and energy for training sessions through being trained as a teacher for digital technology in your capacity, would you give your time and energy?**

**Respondent: Are** you going to visit effectively? Get this. You're going to have somebody training me who knows far less than what I know.
Uh, thank you. Then I would not, I mean, get qualified people that are going to be an advantage. OK and shop now, obviously something needs to improve, but it already knows. So like I I and I think this because we need meetings where

you have people who are teaching teachers how to teach for like telling teachers what to do when they themselves have their idea. What OK, makes sense.
Yeah, it's a waste of your teachers' time if you are going to invite them to meetings and they go and watch what you are doing and currently that's the problem with our departments, OK, you're right. Next question, how open are you and your school for accepting digital transformation change? Ohh no. We had a percentage we actually do. We work digital so yeah.

**Question #5 And do you think technology can empower students for their learning?**

**Respondent** Ohh definitely.
She's got, like I said, it's just like it has issues like, I mean, Internet issues, you know, sharing issues currently in South Africa. Locating is a problem. Umm, I struggle on days when I teach natural science and I'm prepared to listen to. The honour using technology we don't have because of the change. So the changes aren't huge. They're negatives. No chaining. It's very time consuming. Not only.
In terms of preparing your lesson, because we have to be.
Make sure you find appropriate videos. I mean, it's not just you. Go on to YouTube while the cops are happening and find the video, because what you're trying to teach, the concept you're trying to teach my idiot. But then they are not talking about what you wanted to show them. So like, just take space for example, if I'm trying to get the kids to change the kids about the sun, I could watch any 1000 videos on space and have so many different topics, you know? So it's time consuming when you're doing lesson planning.
That looks like that when you are finding what you like to do a PowerPoint for one of my classes. If I can't find something suitable, it takes me around 3 hours just to do one lesson.

It's something you want to make sure that it's not just a waste of time as well, so time consuming yesterday. It's the other thing is that low chilling the problem Internet issues are always a problem and then.
Just the setting up in the morning or whenever you're setting up before the most the time consuming because again, you know if you on the laptop then your laptop inside it needs to update and things like that. But even with all those negatives, all feel that they thought it.
OK.

Shikha Gupta11:31 AM
I sorry yeah you know the the negative I do think technology is the way to go forward especially with our kids goes in the rural areas definitely benefit from actually seeing that we are talking about like

I sorry. Yeah, you know the the negative, I do think technology is the way to go forward, especially with our kids goes in the rural areas definitely benefit from actually seeing that. We are talking about like things like we're sending, you learn to change your energy.
The different types, it's just much easier. Visual and artwork like your sites we, especially in rural schools, right? You know where?
Yeah, I just paid 7, so I know you know what, baby? Right. So great seven. Does electric circuits. Great success. Well, that's now in terms of kids in the rural areas, being able to form these things, it's very slow. And then you've got teachers. The teachers shouldn't have to be the ones paying.

Equipment that kids need to learn the passionately. That's the case most places. Like with technology, there are sites. Yeah, science sites that you visit are used from the very.
Interactive. They can actually build circuits online, and it's a brilliant site because.
If they do something incorrectly, it shows them how to serve people burnout. They can change instead of using.
Until using self, they could use different materials to see where they loads up about, so it will be beneficial especially to rural areas because I mean that's it. Kids can't buy this equipment they can't afford.
Alright, thank you so much for your time.

**Interview 8**

**Question #1 The first question is can you understand what digital technology is?**

**Respondent** Digital technology in my understanding is things like digital devices such as computers, televisions and cell phones as well as things like social media and the internet which provides information and also a means to create and store data.

**Question #2 Do you think technology can help in teaching and learning in schools?**

**Respondent** Yes Ithink technology most certainly can help in teaching and learning in schools.

**Question #3 What problems do you think digital technology can solve?**

**Respondent** It will solve the problem of lack of resources as learners will have access to the world of resources available online. Teachers will have easy access to tools to aid them in presenting lessons to learners. We are living in times where everything is moving to digital and children today are able to learn how to operate things very quickly.

**Question #4 Do you have, like, does your school have the infrastructure to implement the technology in the classroom?**

**Respondent** We have the classrooms and wifi at the school,however the human resources and actual technology needed to implement technology in the classroom we do not have nor can we afford it currently at the school.

**Question #5 Have you been able to talk to another school or the user who has implemented the technology in that promise is school premises?**

**Respondent** Yes, a few affluent schools within the district have implemented the use of tablets and smart boards as a means of teaching and learning.

**Question #6 Do you think as a teacher you will be able to give appropriate time and energy in getting the training for digital technology?**

**Respondent :** The younger teachers would be eager to get training;however the older teachers, those on their way out of the education system frown upon the idea. Most are not computer literate and just refuse to learn.

**Question #7 And how open is your school to accepting this digital transformation change?**

**Respondent** With the way the world is currently evolving, we are open to moving your school into the digital way of teaching and learning. The transformation is inevitable as already we are to introduce coding and robotics as a subject in 2023.

**Question #8 And last question, do you think technology will empower students for their learning and if yes, in what ways?**

**Respondent:** I believe that through technology we will be able to educate and create a generation of learners who are not only knowledgeable but also creative and inspired to be better citizens. Education is the key to success and if we can use different means provided by technology to educate young minds, I believe we will change the country for the better.

**Interview 9**

*Funnel if it's yours, is a self funded public school or a private school, or how is it?*

*It's a public school, well funded or not so funded.*
*I'm not very well.*
*I couldn't tell. OK, cool.*

I'll start with the questionnaire.

**Question #1 But the first question is in your understanding, what is digital technology?**

**Respondent: You're** welcome.

I don't understand.

Tell me everything and the device, Sir.

**Question #2 You know. So, what do you think is digital technology according to you?**

So OK, baby.

If you think about it.

Then it's like.

The second question is one second.

Do you have the Christian document?

I'm OK now. There you go. No problem.

**Question #3 Do you think technology can help in teaching and learning in schools?**

**Yes**

**Question #4 What problems do you think it can solve?**

Uh.

**Question #5  Umm do you have the infrastructure or does your school have the infrastructure to implement technology in classroom?**

It's not for.

**Question #6  Have you been able to talk to another school or another user who has implemented the technology?**

Yes.

**Question #7 Do you think as a teacher you will give appropriate time and energy in getting the training for digital technology?**
Right now,

**Question #8 How open are you or your school for accepting the digital transformation change?**
Again.

**Question #9 And last question, do you think technology will empower students for their learning?**
Yes.
All right. Thank you so much for your time.

**Interview 10**

*Hi, how are you?*
*Alright, thank you so much. So sorry you got. I went to take the to be before 4.*

*Umm, so the sector letting you know that I'm recording the meeting and OK, let's start with the question asked*.

**Question #1 The first question is can you understand what digital technology is?**

**Respondent** I think digital technologies and the first electronic devices that allow its users to interact with and in the process automates otherwise manual tasks. It provides enough marginal data and information in a way that may reduce the time taken to complete the task. It improves the visual quality in a

way that may reduce the learning curve and increase. So it's user management. Examples of digital digital technology in school environments may include devices such as smart boards.

**Question #2  Do you think technology can help in teaching and learning in schools?**

Respondent Yes, most definitely. You cannot only help, but it is increasingly becoming schedule for schools and their students to embrace technology schools that are not technologically inclined automatically put these students at a disadvantage for the for their careers after school, after school, students that attend a low tech school are on the back foot when they must not compete with standards that are set, set, assuming a technical, technologically inclined student or employee, for example, students that come from.
A public school background tends to struggle on board with their first job. You are the best students, students from private school since in addition to coursework, they're trying to pick up computer literacy. Cool.

**Question #3 What problems do you think digital technology can solve?**

**Respondent** And students will become more confused and not sure there will be more engaged in many cases for a wide variety of students that may have previously struggled with teaching approaches by being more visual, it will better equip students with skills that may give them a competitive chance. It may reduce the learning curve students post school, allowing them to allocate their time better, and may teach, making teaching more efficient. Allowing teachers to provide a more student centred teaching approach.
It's largely making it. Sorry it can't make marking, it can be largely originated. It will take a huge bite. Enough teachers and we encourage more objective marks between different teachers at the same grade. It will also reduce the reliance on

paper and printers contributing to a more sustainable education. It will make it easier for students to pursue careers that involve technology. This will benefit the entire country.
Call Tom. Question number. Phone.

**Question #4 Do you have a like, does your school have the infrastructure to implement the technology in the classroom?**

**Respondent** Actually to general school but.
And thank God that we are advanced and we do have smartphones in our classrooms. So we do have the infrastructure to implement digital technologies. Oh wow, that's the first global school children speaking to yes, who saying that they have the resources. That's right. Yes, we do have great.

**Question #5 Have you been able to talk to another school or the user who has implemented the technology in that promise is school premises?**

**Respondent** And no, I haven't actually. But with our school, it really largely benefits our teachers because we feel like the students are more engaged when it comes to using a smart phone rather than a blackboard to teach. So. And our school, it does work.
OK.

**Question #6 Do you think as a teacher you will be able to give appropriate time and energy in getting the training for digital technology?**

**Respondent** Uh, yes, I think we do need teachers, we are constantly growing and learning and we are lifelong learning. So it would be best if we could train everyone and should be trained in how and how to use the digital technology so they can considerably pass it on to their learners and it works like that. Right.

**Question #7 And how open is your school for accepting this digital transformation change?**

**Respondent** AbSolutely we are in terms of our resources, I'd say we are limited compared to other schools, but we are becoming more advanced by our principles, very advanced in terms of getting all of these resources for us and it actually is changing rural schooling.
Right.

**Question #8 And last question, do you think technology will empower students for their learning and if yes, in what ways?**

**Respondent** Yes, the amount of effort, the amount of effort and resources it takes for students to learn beyond what's in the textbook or what they have been told by the teachers is currently very high. Technology is one of the solutions that could massively decrease the amount of resources and effort required from students to go beyond the classroom by improving the access to learning material and information. In this scenario, that is, students find it difficult to understand the teacher's textbook. They will have other sources of information to learn from and potentially.
Typeracer formats in this new technology may be a useful tool to reach a broader group of students and any more effective manner. Alright, thank you so much for your time. It was not even 10 minutes, but I'm very impressed by thank you. OK, thank you. So it's fine. OK bye.