**UNIVERSITY OF EDUCATION, WINNEBA**

# IMPACTS OF E-LEARNING ON PUPILS AT THE KINDERGARTEN: A CASE STUDY AT REV. WILSON B BASIC SCHOOL IN MFANTSEMAN MUNICIPAL


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**220022667**

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**of the Requirements for the Award of the Degree of Master of Education (Educational School Supervision) in the University of Education, Winneba**

**DECEMBER, 2022**

# DECLARATION

I Beatrice Owusu-Yeboah hereby declare that, except for references made to other persons' works that have been duly acknowledged, this dissertation is original research undertaken by me and has not been presented in part or in whole for the award of a degree in this university or elsewhere.

Signature: …….

Date: ……

**Supervisor's Declaration**

I hereby declare that; the preparation and presentation of this dissertation was supervised in accordance with guidelines of dissertation supervision laid down by the University of Education, Winneba.

Supervisor's Name: Dr. Seth Dade Ansah

Signature: …….

Date: ……..

# DEDICATION

To my family and friends, especially to my lovely husband Mr. George Ernest Bentum and my children Angela, Elizabeth, Anna and George Ernest Bentum Jnr.

# ACKNOWLEDGEMENTS

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# ABSTRACT

The COVID-19 pandemic in 2020 had a profound impact on our daily activities and presented us with unprecedented challenges. As the dreadfulness of COVID-19 became clear, globally, governments closed schools in an attempt to curb the spread of the virus impacting over 90% of the world's enrolled learners. Governments ensured that education continued via emergency remote learning/teaching approaches with many deploying online learning solutions. Since then, e-learning has been part of the curriculum in many Ghanaian schools. This study was therefore set up to investigate the impacts of e-learning on kindergarten pupils' learning at Rev. Wilson B Basic School. Therefore, all pupils and teachers in the school made up the population. The descriptive survey design was adopted, questionnaire was used to collect data from the 24 respondents. The study found that positive impacts of e-learning on kindergarten pupils' learning included improving the quality of pupils' learning, making pupils learning convenient and flexible, and motivating pupils. Also, negative impacts of e-learning were: limiting human interaction between pupils and the teacher, lack of human contact affecting quality of learning, and putting financial burden on parents and guardians. It was then recommended that basic schools especially kindergartens should exploit the benefits of e-learning by ensuring that pupils are exposed to the system. Also, the Ghana Education Service together with the ministry of education must ensure that the right teaching and learning materials that can support the implementation of e-learning in schools are supplied to the various basic schools in Ghana.

# CHAPTER ONE

# INTRODUCTION

## 1.0 Introduction

This chapter introduces the main topic under study. It covers areas such as the background, statement of the problem, objectives, research questions, significance, delimitation and limitations.

## 1.1 Background to the Study

The importance of education in transforming societies cannot be overlooked. It is through education that the norms and beliefs of the society are imparted to generations. Education in its general sense is a form of learning, in which knowledge, skills and habits of a group of people are transferred from one generation to the next through teaching, training or research. Education has been discussed by many as an important component in the development of every society and improvement of lives of its people. The importance of education is recognized by Wambugi (2014) with his assertion that globally, education is seen as one of the key components of human and national development. He noted that education is considered as a critical resource in that it helps a country to particularly equip the youth with respect to knowledge, skills and expertise in enabling them to be actively involved in the development of that country.

The convention of face-to-face interaction has prevailed ever since communities adopted the model of schools and classes to facilitate education. The most common practice has always been a classroom with one or more teachers and students, with both groups meeting physically and in real time. However, Marfo and Okine (2018) posit that globally, e-Learning has become the protagonist for change in the education

sector with the rising numbers in student enrolments and the masses of potential students that are turned away each year for lack of classrooms and accommodation. The necessity of e-learning in our schools has become even more paramount with the emergence of the Coronavirus Pandemic. The pandemic has affected educational systems worldwide, leading to the widespread closures of schools, universities and colleges as a result over 80% of the world's students (as of 21 April, 2020, approximately 1.723 billion learners) are not attending school (UNICEF, 2020). About 191 countries have implemented nationwide closures and five (5) have implemented local closures, impacting about 99.4 percent of the world's student population (UNESCO, 2020). School closures have impacted several stakeholders like students, teachers, and families as well as economic and societal consequences (Barrett, 2020; UNESCO, 2020). The closing down of schools have broadened learning disparities and have indignant susceptible students disproportionately (UNESCO, 2020).

In order to address this issue, UNESCO endorsed the use of distance learning programmes, the computer and its accessories and open educational applications and platforms that schools and teachers can use to reach learners remotely and limit the disruption of education (UNESCO, 2020). Following this recommendations schools in Ghana have intensified the implementation of e-learning strategies to improve learning (Bozkurt & Sharma 2020). E-learning is now the prevailing curriculum paradigm in the Ghanaian sense owing to the Corona Virus (COVID -19) pandemic. Also, according to the World Health Organization (WHO) (2022), in view of the COVID - 19 pandemic that has caused almost all educational establishments to close down across the globe e-learning is crucial to the continuation of the classroom learning cycle. Considering its advantages particularly in the current health

environment, its adoption as a model is essential to continue the academic calendar and to enhance educational quality.

With the Coronavirus pandemic and the arrival of computer technology and the internet, the traditional setup of learning is evolving into a form mostly referred to as "Electronic Learning (e-learning)". Wang, Wang and Shee (2011) note that the advancements of Information and multimedia technology, and the use of internet as a new way of teaching, has made a revolutionary change in the educational system. Collis (2013) also recognizes this change. He asserted that recent technological tools for teaching breakthroughs have led to improvements in almost all educational practices. Such breakthroughs have helped teachers to develop their pedagogical practices for teaching. He continues that those further developments in pedagogical practices have led to the emergence of the concept of the use of the computer and its accompanying tools in the classroom which many term "e-learning". Hung and Cho (2010) also add that using electronic media such as computer videoconferencing, audio, internet, interactive TV and satellite as medium to conduct electronic learning (e-learning), has fuelled the opportunity to introduce a new learning environment and scenarios to potential benefiters. Also, educated and uneducated masses use technology frequently for enjoyment and benefits. It is observed that different social media like Facebook, Whatsapp and Twitter play an important role in education. These applications strongly attract students and connect them with different parts of the world. These applications introduce them to a variety of new terms of education, one of them is e-learning. E-learner want to adopt new technologies to learn and to connect with peoples related to their field of study (Anshari, Alas & Guan, 2016).

The wide acceptance and availability of the Internet means that e- learning eliminates time, distance and socio- economic status barriers and at the same time allows students to take more responsibility for their lifelong learning (Sannino & Engeström, 2017). Islam (2013) also adds that e-learning offers new possibilities for learning and leads to drastic changes in educational practice.

According to Klement (2012), the concept of traditional education does not fit well with the new world of lifelong learning in which the roles of teachers, students and curriculum are changing. Horn and Staker (2011) also add that e-learning becomes mostly useful in situations where there is no alternative for learning. For instance, in small, rural and urban schools which are unable to offer a broad set of courses with highly qualified teachers in certain subject areas; in the advanced courses that many schools struggle to offer on their campuses; in remedial courses for students who need to recover grades to graduate; and with home-schooled and homebound students. Again, teaching in the traditional classroom is instructor-centric where the instructor mainly controls class content including topic, course material, progress and discussions (Baloian, Pino & Hoppe, 2011). Sharpe, Benfield, Roberts and Francis (2016) recognize that students can take advantage of a wide range of experts and resources that may not be available locally. E- learning aspects were explored in studies comparing e- learning with traditional teacher- led approaches; including usefulness, efficiency, cost- effectiveness and satisfaction of learners, and learners gain more knowledge, skills and attitudes than traditional methods (Asabere & Enguah, 2012). Truskolaska, Łuka, Toruj, Wrona and Smagowska (2015) also add that E-learning makes it easy to make new friends with people who are physically distant but can be close in terms of interests, problems and experiences. It promotes the development of social contacts for people who are tacit, shy or closed. The use of

technology in teaching has help teachers to meet the individual learning needs and learning styles of students (Voci & Young, 2011). According to Collis (2013), the use of technology for teaching have increased students' access and convenience to instructional materials. The use of technology in teaching enables students to learn independently and be in control of the learning process coupled with facilitating cooperative learning (Dziuban, 2014). Among other benefits of e- learning, high efficiency in the acquisition of knowledge and the attractiveness of the technical environment, especially for young people, are also mentioned. The advantages shown are flexibility, accessibility, satisfaction and cost efficiency (Bader & Ko¨ttstorfer, 2013).

Despite the numerous advantages that come with the implementation of e-learning in our schools, concerns have been expressed about the consequences of the abrupt movement from a traditionally-centred classroom instruction to E-learning instruction. As much as E-learning is economical, simple to access 24 hours a day, and convenient, its quality and effectiveness are being questioned. According to Jabli and Qahmash (2013), teaching and learning have long been part of human lives and remains an integral part of human society, however, with the advent of e-learning, this field has experienced a substantial degree of change. According to Salamat, Ahmad, Bakht and Saifi (2018), albeit the advantages E-learning offers, there is minimal interactivity and a lack of pedagogical considerations rendering it inferior to traditional classroom-based learning. On the impacts of e-learning on pupils' learning, Family Zone Team (2018) claims that Shortened attention spans and the rise of "selfie culture" are among the negative impacts of digital learning on kid students. They continue that the ubiquitous use of digital tools and environments afforded by mobile devices, social media and the internet creates risks for the development of young

people's social, emotional and critical thinking skills. Also, according to Vanbuskirk (2021), disparities in digital literacy and online access among students, teachers, and parents meant that some pupils faced big obstacles to just signing on to class. For example, many pupils did not have Wi-Fi or a computer—or had to share one device among multiple pupils or parents. The fear is that these disparities will exacerbate the learning gap among disadvantaged students. Vanbuskirk (20210 further add that the mental health toll of distance learning has been well documented. Childhood rates of mental health conditions, such as depression, anxiety, and eating disorders, rose sharply while pupils were out of school. And many of those with pre-existing mental health conditions reported a worsening of symptoms, ffeelings of isolation (as well as suicide risk) also increased, which was a big reason many educators, doctors, and parents called for a return to in-person schooling.

### 1.2 Statement of the Problem

E-learning has generated a lot of interest in information systems research and valuable studies have been conducted in this regard. The very high adoption rate of e-learning in schools has led to sustained research into e-learning adoption over the years (Alkhalaf, Drew & Alhussain, 2012). E-learning could be more useful compared to traditionally-centred classroom-based model. For its potential to increased access to more students than may be done through a traditional classroom based model and enhanced quality of schooling, E-learning is widely adopted by government and educational organizations across the globe (WHO, 2020). The reliance on e-learning in Ghanaian schools was rampant during the COVID-19 pandemic. To curtail the spread of COVID-19 in Ghana, the president of Ghana had to interdict all public gatherings including conferences, workshops, funerals, festivals, political rallies, church activities and other related events. In addition, both public and private basic

schools, senior high schools, colleges and universities were closed down (Kokutse, 2020; Nyabor, 2020). Even after restrictions were relaxed, the use of e-learning still exists in our schools with many schools now integrating the use of the computer and its accompanying devices in the traditional classroom.

Despite the enormous benefits of e-learning systems, studies have proven the consequential effects it can have on students especially young pupils. Studies show that reliance on e-learning caused big drops in exercise. Many pupils also experienced weight gain, headaches, poor sleep, and eyestrain from too much screen time, and increased exposure to domestic violence (e.g. Vanbuskirk 2021). Other problems also include inadequate ICT staff to support and implement e-learning systems, low motivation for teachers to blend e-learning into their face-to-face classrooms, inadequate bandwidth to support the e-learning system, poor financing for acquisition of ICT infrastructure and poor educational awareness of the e-learning system (Marfo & Okine, 2018).

Even though there appears to be a plethora of studies that have investigated the impacts of e-learning on pupils, it appears not much has been done to specifically investigate the phenomenon among kindergarten pupils of Rev. Wilson B Basic School in the Mfantseman Municipality in the Central Region of Ghana. Also, the new age calls for the deployment of new technology into the field of education. Now, educational institutions are exploiting the advantages that come with the use of the internet and other e-learning platforms. This study is in accordance set-up to fill a gap in literature and also investigate how e-learning can be used to improve pupils' learning.

### 1.3 Purpose of the Study

The main purpose of the study was to investigate the impacts of e-learning of kindergarten pupils of Rev. Wilson B Basic School in the Mfantseman Municipality in the central region of Ghana.

### 1.4 Objectives of the Study

Specifically, the study intends to find out:

1. The positive impacts of e-learning on the learning of kindergarten pupils of Rev. Wilson B Basic School in the Mfantseman Municipality in the central region of Ghana.
2. The negative impacts of e-learning on kindergarten pupils of of Rev. Wilson B Basic School
3. Ways to improve e-learning among kindergarten pupils of Rev. Wilson B Basic School in the Mfantseman Municipality in the central region of Ghana.

### 1.5 Research Questions

Based on the purpose of the study, the following questions have been asked to guide the study.

1. What are the positive impacts of e-learning on the learning of kindergarten pupils of Rev. Wilson B Basic School in the Mfantseman Municipality in the central region of Ghana?
2. What are the negative impacts of e-learning on kindergarten pupils of Rev. Wilson B Basic School?
3. In what ways can e-learning among kindergarten pupils be improved in Rev. Wilson B Basic School?

### 1.6 Significance of the Study

It is the researcher's hope that this study would provide enormous benefits. Firstly, this research contributes to, arguably, the limited literature in the area of e-learning adoption of a multi-facet and multi-dimensional perspective from a developing country. Thus, serving as a stepping stone for subsequent studies in this field.

Secondly, the findings of this study map out the e-learning adoption and implementation strategies not only higher educational levels in Ghana but also in basic schools and even pre-schools.

Again, the findings of this study can inform e-learning systems designers, instructors, administrators and students of the best practices to apply in the adoption and implementation of e-learning in their activities. For the systems administrator and designer, the study identifies some of the challenges or weaknesses in the e-learning systems that require improvement or redesigning. Furthermore, the study can inform instructors and students of the best practices in the use of e-learning systems to maximize productivity

Finally, the study findings can also inform the policy making bodies, how best to improve the deployment and management of e-learning systems at the basic schools and at the district and national levels

### 1.7 Delimitation of the Study

In terms of content, the study is delimited to impacts of e-learning on kindergarten pupils of Rev. Wilson B Basic School. Only the kindergarten pupils were considered in the study. In terms of geographical area, the study is delimited to the Mfantseman Municipality in the central region of Ghana.

### 1.8 Limitations of the Study

A number of problems were experienced in the collection of the data for the research and it is quite imperative to bring the major ones to light. The main instrument used for data collection was questionnaire which had the tendency of non-response from the respondents. Also, responses from respondents may not represent the true situation on the ground. This can affect the validity and reliability of findings.

Again, some teachers were reluctant to participate in the study because they felt they were not getting any financial rewards for their participation. This led to some of them refusing to be include.

### 1.9 Organization of the Rest of the Study

This is a five-chapter study. Following the present is Chapter Two which discusses literature related to the topic under study which is themed under theoretical, conceptual and empirical review. Chapter Three discusses the research methodology which includes the design, population, sample and sampling procedure, data collection instrument and data analysis. Chapter Four discusses the results and findings. Chapter Five, being the last, discusses the conclusions and recommendations of the study and also make suggestions for further studies.

# CHAPTER TWO

# REVIEW OF RELATED LITERATURE

## 2.0 Introduction

This chapter is concerned with what experts and authorities have said on the topic under study. The review seeks to find what current literature is saying about the various research questions posed to guide this study.

## 2.1 Conceptual Review

### 2.1.1 Meaning of E-Learning

E-learning has been defined and explained by many experts and scholars. For instance, Tamm (2020) postulates that E-learning, also referred to as online learning or electronic learning, is the acquisition of knowledge which takes place through electronic technologies and media. In simple language, e-learning is defined as "learning that is enabled electronically". Typically, e-learning is conducted on the Internet, where students can access their learning materials online at any place and time. E-Learning most often takes place in the form of online courses, online degrees, or online programmes. Lawless (2018) also position that eLearning, or electronic learning, is the delivery of learning and training through digital resources. Although e-Learning is based on formalized learning, it is provided through electronic devices such as computers, tablets and even cellular phones that are connected to the internet. Further, the ATD Online Learning Platform (2018) explained it as a structured course or learning experience delivered electronically; it can also include performance support content. There are also many different elements that can make up an e-learning programme, such as live or pre-recorded lecture content, video, quizzes, simulations, games, activities, and other interactive elements.

Lutkevich (2020) added his voice by stating that E-learning (sometimes called web-based training) is anywhere, any-time instruction delivered over the internet or a corporate Intranet to browser-equipped learners. Contrary to traditional learning methods, e-learning allows students, employees in training and casual learners to participate in an organized learning experience regardless of their physical location. He gave a vivid explanation on how e-learning works by explaining that Instruction can be delivered by a combination of static methods, such as learning portals, hyperlinked pages, screen cam tutorials, streaming audio/video and live Web broadcasts; and interactive methods, such as threaded discussions, chats and desktop video conferencing. E-learning tools primarily enable the delivery of learning material directly from teacher to learner. Now, the e-learning experience has evolved to enable more multi-directional communication using increasingly interactive tools. E-learning refers to the use of computer network technology, primarily over or through the internet, to deliver information and instructions to individuals (Wang, Ran, Liao, Cheung, & Lieu 2010).

According to the Orchid International School (2022), E-learning is an essential opportunity for many pre-primary and Kindergarten pupils to learn valuable lessons through the medium of online technology. Online learning is a value-driven concept that can impact the lives of even the youngest of children. The next generation of learners are already opting for the best tools for e-learning for pupils and are independently exploring new ideas, concepts, and topics. As parents, we can ensure that our child's education is not compromised in any way and that we can provide the best online learning environment that is available for them.

### 2.1.2 Forms of E-learning

E-learning has types, forms and variations. For example, Tamm (2020) has grouped e-learning into the following categories:

Adult e-learning: According to him, for adults, online learning often manages to solve the numerous challenges adult learners face during studies. Online learning allows them to progress at their own pace, to submit assignments and take assessments at times best suited for them. This kind of flexibility is especially beneficial for adult learners because often they are forced to balance employment, family duties and online learning altogether.

Online Colleges: It was explained that for educational institutions, e-learning brings the most potential uses of all. Many accredited online colleges already offer online degree programmes, and more of them will start to do so in the upcoming years. E-Learning degrees enable universities to accept considerably more students than they would have otherwise been able to due to space and working staff constraints. With e-learning, universities have the chance to become more international than ever before. With increased amounts of admitted students and reduced costs, educational institutions who are properly able to adapt to the standards of Internet learning will undoubtedly see increased profitability.

Corporative E-Learning: Companies, on the other hand, use e-learning to boost the knowledge, skills, and overall productivity of their employees while cutting down on the costs normally associated with employee training.

Blakely, Shetty and Jacobs (2018) also group e-learning as: asynchronous and synchronous. They expounded that asynchronous e-learning is self-paced; the learners

are taking the course on their own, usually on a laptop. Asynchronous e-learning programme may include pre-recorded lecture content and video, visuals, and/or text, knowledge quizzes, simulations, games, and other interactive elements.

On the other hand, synchronous e-learning, more commonly referred to as live-online training, online learning, synchronous online training, or virtual classroom training, is instructor-led and taken at the same time as other learners – everyone just happens to be geographically dispersed. This training typically uses a web-conferencing or virtual classroom platform (such as Adobe Connect or GoToTraining) that offers features such as slide or screen sharing, as well as interaction tools such as chat, polling, and screen annotation. Similarly, Lutkevich (2020) also share this line of classification by noting that There are two primary models of Web-based instruction: synchronous - instructor-facilitated and asynchronous - self-directed and self-paced. Basically, synchronous e-learning requires all the participants to be present, albeit virtually, at the same time, whereas asynchronous e-learning does not. He further added some examples of synchronous e-learning methods as the use of scheduled and timed online tests, virtual classrooms, web conferencing technology or interactive shared whiteboards that learners can use to collaborate. Likewise, examples of asynchronous e-learning methods include the use of a message boards, discussion groups and self-paced online courses.

### 2.1.3 Covid-19 and E-Learning in Ghana

The Covid-19 pandemic in 2020 caused by the novel coronavirus has had a profound impact on our daily activities and has presented us with unprecedented challenges. As the dreadfulness of COVID-19 became crystal clear, globally, governments closed schools in an attempt to curb the spread of the virus impacting over 90% of the

world's enrolled learners (UNESCO, 2020). The intermissions to education can have long-term repercussions, exclusively, for the most vulnerable. This may not only cause loss of short-term learning but also further loss in human capital and diminished economic opportunities in the long-term as well as prejudice towards particular groups (World Bank, 2020). The COVID-19 outbreak affected education in terms of reduction in utilisation of schools, lack of quality appropriate education, reduction in access to education services, reduction in availability of education services, lack of maintenance of schools, lack of teacher training, fear of school return and emotional stress caused by outbreak, reduced financial resources, diversion of resources and teachers, confusion and stress for teachers, lack of at-home educational materials, challenges measuring and validating learning, parents unprepared for distance and home schooling, challenges creating, maintaining, improving distance learning, loss of quality teaching and learning, social isolation, emotional disequilibrium and school drop outs (Bozkurt & Sharma, 2020; Hallgarten, 2020).

Due to these effects, governments took measures to ensure that education continues via emergency remote learning/teaching approaches with many deploying online learning solutions (Jalli, 2020; UNESCO, 2020c; 2020d). This might have seemed experimental to some education institutions, typically, those in developing countries like Ghana, and however, there might be others who had managed online teaching/learning before. Regarding this, several organisations were providing assistance to ensure that learners continue their education worldwide. For example, the World Bank was vigorously working with Ministries of Education in numerous countries to support their efforts to employ instructional technologies of all sorts to provide remote learning opportunities for students while schools are closed as a result of the COVID-19 crisis (World Bank, 2020). Similarly, UNESCO was helping

countries in their labours to alleviate the instantaneous effect of school closures, particularly for more vulnerable and disadvantaged communities, and to facilitate the continuity of education for all through remote learning (UNESCO, 2020).

However, it seemed that educational institutions understood the pedagogical, logistical, and also technological challenges to these timely measures. Most of the educational institutions in low- and middle-income countries, including students and teachers, lacked access to high-speed broadband or digital devices needed to fully deploy online learning options. Thus, transition from in-person to person instruction to emergency remote learning/online learning has wide-open cavernous digital divides between and within schools and countries (World Bank, 2020a), particularly, among low-medium income countries like Ghana. The condition was far poorer for lower resource environments in middle- and- low-income countries with internet dissemination rates typically less than 50% and a large fraction of students without devices to enable emergency remote learning at home (World Bank, 2020). This result indicated the capacity of parents and even schools to support emergency remote learning or online learning during school closures as result of COVID-19. Per this, educational institutions needed to cogitate substitute ways for students to continue learning when they are not in school, like in the current COVID-19 crisis.

On this account, UNESCO was centring on solidifying capacities of distance learning systems to overcome the digital divide through resources providing support to teachers, parents and caregivers. In equivalent, the Organization was firming its assistance with the open educational resource (OER) community to support openly licensed teaching and learning materials in the framework of the 2019 UNESCO OER Recommendation; identify MOOCs and OERs which can provide online courses and

self-directed learning content through both mobile and desktop platforms; support, through the OER4Covid initiative, transition to online learning using OER during the COVID-19 pandemic (UNESCO, 2020).

### 2.1.4 Positive Impacts of E-learning

The idea of e-learning in the education sector has a plethora of positive impacts on the overall education sector. This was made even more evident during the Covid-19 era and its associated lockdown. Experts and other researchers have a lot to say on this.

According to Fayomi, Ayo, Ajayi and Okorie (2019), the use of new multimedia technologies and the internet in learning is seen as a means to improve accessibility, efficiency and quality of learning by facilitating access to resources and services as well as remote exchanges and collaboration. E-learning has become a new paradigm and philosophy in education with a mission to serve as a development platform for present-day society based on knowledge. It is evident that the concept of e-learning is considered to be very attractive as a new learning model whose effect will be a positive one to the development of education in developing countries.

According to Arkorful and Abaidoo (2014), e-learning involves the use of digital tools for teaching and learning. It makes use of technological tools to enable learners' study anytime and anywhere. It involves the training, delivery of knowledge and motivates students to interact with each other, as well as exchange and respect different point of views. It eases communication and improves the relationships that sustain learning. Its adoption in some institutions has increased faculty and learner's access to information and has provided a rich environment for collaboration among students which have improved academic standards.

Web-based instruction is the perfect solution to meet the needs of life-long learners because it is available on demand, does not require travel and is cost-efficient. Learners can continue to access material throughout their life as the subject they are learning about evolves. Web-based training and e-learning enable greater flexibility in how the learner consumes information and greater adaptability to new available information (Lutkevich, 2020). It implies that it is does not require huge financial might to undertake a course or learning programme. In effect, the learners at the kindergarten level can be given the needed education and training without much financial burden on their parents or guardians. Similarly, Blakely, Shetty and Jacobs (2018) assert that e-learning can be less expensive. Tamm (2020) also added his view that e- learning is both cost-effective and cost-efficient, as it removes the geographical obstacles often associated with traditional classrooms and education. Lawless (2018) added more by asserting that traditional learning can be expensive and often frustrating to maintain. E-Learning removes the need for costly printed learning materials and even on-site instructors. If modules within your content need to change, this can be done easily via your LMS without having to print and distribute updated training materials.

Another notable positive impact of e-learning is that it allows learners to move at their own pace. For example, Lutkevich (2020) had to say that E-learning platforms today offer increased adaptability for learners and teachers alike. Similarly, Online learning allows them to progress at their own pace, to submit assignments and take assessments at times best suited for them. This kind of flexibility is especially beneficial for adult learners because often they are forced to balance employment, family duties and online learning altogether (Tamm, 2020). In effect, they are saying the e-learning takes into account individual differences. With respect to the

introduction of the Standard Based Curriculum, which calls for differentiation, facilitators can incorporate e-learning to monitor the progress of individual learners. Also, Lawless (2018) maintains that eLearning allows learners to quickly and more easily complete their training, resulting in improved performance and greater productivity. Learners appreciate that they can participate in training at their convenience. They are likely to feel more motivated to further their academic goals through e-Learning, as it gives them the flexibility to learn at their own pace and from a location of their choosing.

Also, experts are of the view that e-learning saves time in teaching and learning. According to Lawless (2018), time is precious, especially in a work environment, so why not save as much of it as you can? For teachers, e-learning keeps any updates you need to impart simple. Whether you need to implement changes to your training content or company policies, eLearning allows you to easily add them to your LMS. This saves you a considerable amount of time on the organization of reprints, etc. Learners can also save time by accessing content where and when they need to, rather than relying on scheduled training. And you can use your LMS to automate manual tasks, making training management more time efficient. Also, Blakely, Shetty and Jacobs (2018) added their voice that it saves time away. It helps organizations manage training events, self-paced courses, and blended learning programme. It provides automation that replaces rigorous and expensive manual work, saves time, and enables you to organize your content, data, and learners. It tracks and reports on training activity and results.

Moreover, the use of e-learning in the early grades prepares learners for future expertise in computer and technology. This view is strongly shared by Steinhoff

(2016) that useful online platforms and smart hardware in classrooms, the implementation of e-learning also includes computer education. She added the importance of computer education because of its positive influence on child development. She argues that computer education facilitates a variety of skills which are also associated with employment in the areas of programming and graphic design. The basic skills required in these areas include intelligence, emotional intelligence, hand-eye coordination, mathematical skills and social competence. In the future, the majority of companies will be web-orientated in their business, and will expect employers to be able to support their business system to the core. Following this long-term scenario, she acknowledges that children who have had the ability to develop computer operation skills from a very young age will have better life prospects as they grow older. This cannot be disputed for that fact that learners who were born after the advent of computer age are more technologically inclined.

In addition, the Orchid International School (2020) argues that e-learning encourages curiosity through productive engagement. According to them, the primary goal of any pre-primary or Kindergarten programme is to enable students to learn through fun-filled activities and play-driven initiatives. By having online teachers go through complex subjects in a fun and interactive manner, pupils can be taught to organically learn some of the most challenging topics for their age. Curiosity can be cultivated as well, with the best distance learning in preschool programme. Pupils can pick up a lot of information when their minds are activated through productive engagement. I strongly agree with them in the sense that e-learning breaks the boredom associated with the monotony of the traditional classroom engagements.

Also, the practicality of using digital aids enable learners to acquire knowledge and skills that they can hardly forget. This position is also held by the Bright Path Preschool (2021) that clear memory recollection can be challenging to instil in our young children. Therefore, when it comes to helping our children remember information more clearly, e-learning has attained the position of a learning aid because of the highly visual nature of e-learning platforms, software, and smart hardware that have been extremely helpful in recognition and recollection. In the same way, learning through practical visuals are important because most children are visual learners; 80% of what they learn is through visual reception (The Visual Learning Centers of America, 2019).

Moreover, it is argued by other researchers that, e-learning promotes social development of early childhood learners. One such stance is taken by the Bright Path Preschool (2021) that E-learning can also support children mentally and emotionally, no matter if they are winning or losing. When performing a task or solving a problem with e-learning, the lack of finality and the ability to try again can help to foster a more resilient and pragmatic mindset from a young age. The Orchid International School (2020) elaborated it further that for many children, the virtual world is as natural to them as the real world outside. For them, online learning and distance learning in preschool courses are becoming a part of the everyday happenings. Virtual engagement for pre-primary and Kindergarten children is a natural extension of everyday experiences. By interacting with other children virtually, pupils can get closer to other pupils in a highly controlled manner. Those few hours that pupils dedicate every day can help them develop core social skills holistically. In addition, they posit that virtual engagement is also a critical tool, under distance learning in preschool, that many students use to define their personalities. The best tools for e-

learning for pupils ensure that children can chart their approach to solving problems and interacting with the teacher. Pupils can also learn more about how other students are performing in common tasks and can learn from them in a play driven environment.

Furthermore, others share the view that e-learning introduces learners and facilitators to a broader global perspective. According to Miller (2019), students in online programmes come from across all over the world. Because of the ability to log on from any location, class discussions feature a broader range of perspectives, helping you enhance your own cross-cultural understanding. Students then not only have the opportunity to network with people from around the globe, but can also broaden their perspective and become more culturally aware. He means that, learners who engage in online e-learning, they are not confined to their immediate local environment or country but are open to diverse sources from all over the globe. Facilitators are also abreast with the newest pedagogies and knowledge in teaching the learners. Khan and Setiawan (2022) in a similar study concluded that e-learning offers important information to increase the knowledge base on the effectiveness of different educational methods. Online learning brought out effect for students' achievement. It has various benefits over the traditional techniques of learning. A lot of the students are attracted because of it flexible, although they need pay for the cost to use the internet (Yusnilita, 2020). The Science Prog (2020) added more that online learning for pupils is one of the most efficient ways of teaching students. It involves many tools for PDFs, videos, and podcasts. Teachers can use all these tools for delivering lessons. Online learning for pupils includes lessons that go beyond the traditional method of textbook teaching.

### 2.1.5 Negative Impacts of E-learning

Despite the numerous advantages of electronic learning there are other notable negative impacts on learners. For example, Lutkevich (2020) notes that critics point out that web-based training is a good alternative for independent, self-motivated students, but technical issues and the need for human contact limit its usefulness for students with other learning styles. He added that learner utilizing an asynchronous e-learning method might find themselves unable to successfully complete an e-learning course without the added structure of a deadline or the instant response to questions that a synchronous e-learning or traditional learning method provides.

Another disadvantage of using e-learning methods, especially on free and easily accessible resources, is that sometimes the quality and credibility of the content or the teacher is not transparent. Khan and Setiawan (2022) shared on this view that E-Learning, has some drawbacks. The opacity of the designs also forces the need to learn new technical problems and to run a learning platform and a programme for older participants in particular. There is also a lack of direct contact with the group and the teacher, the " face to face" relationship. This is especially important from the point of view of students of social sciences, where it is important not only to acquire knowledge but also social skills. The big disadvantage is that the group has no social and professional experience.

E-learning raises significant challenges to learners on technical part (Rana Rajiv & Lal 2014). Technical challenges may include internet failure or internet do not work according to what academics require. Success in the implementation of E-learning educational system as one of the main approaches in managing knowledge and

educational needs of higher education organization will not be achieved without identifying the different skill, technical and cultural challenges (Leila et al., 2018). Cultural challenges should be identified before implementing e-learning because everyone has got their ways of learning based on their culture. For example, those who are used with taught way of learning will have challenges to adapt to E-Learning strategy and their academic performance will be affected negatively. There are technical training challenges when using e-learning (Islam et al., 2015).

Another challenge is the access to a stable internet connection. Ayuni, Marini, Fauziddin and Pahrul (2021) position that some affected areas are very difficult to get good signal access due to their location in hilly areas. Not infrequently some explanations about the existence of students who have to be brought by their parents to crowded places and easy internet access.

Moreover, Safrizal, Yulia and Suryana (2021) concur that the biggest difficulty in implementing online learning felt by teachers at the kindergarten level is cooperation with parents to assist in the implementation of online learning at home as an extension of the teacher's hand in controlling and supervising children while studying. Another difficulty felt by kindergarten teachers in online learning is the difficulty in assessing children's development both physically, motorically, socially, and cognitively, so it is a difficult task for teachers to make online learning in accordance with the desired expectations. The last thing that becomes a difficulty for teachers in implementing online learning is the effectiveness of learning time and assignments by children at home.

Tamm (2022) has highlighted some of the negative impacts of e-learning as making participating students undergo contemplation, remoteness and a lack of interaction. As a result, many of the students and teachers who inevitably spend much of their time online can start experiencing signs of social isolation, due to the lack of human communication in their lives. Social isolation coupled with a lack of communication often leads to several mental health issues such as heightened stress, anxiety, and negative thoughts. Moreover, Online student feedback is limited; e-learning can cause social Isolation; e-Learning requires strong self-motivation and time management skills; lack of communicational skill development in online students; cheating prevention during online assessments is complicated; online instructors tend to focus on theory rather than practice; e-learning lacks face-to-face communication; e-learning is limited to certain disciplines; online learning is inaccessible to the computer illiterate population; lack of accreditation and quality assurance in online education.

Thompson (2021) in his work highlighted some challenges associated with e-learning as that online learning requires additional training for instructors. He explained that online classes imply an initial learning curve and extra effort on the teacher's behalf to create a successful online course. Instructors need to get a deep understanding of the different approaches to teaching and learning to avoid just replicating the physical class environment and miss out on all the added advantages and tools that eLearning and blended learning have to offer.

Also, it is argued that e-learning may cripple cooperation in learning. Thompson (2021) says it better that online learning may create a sense of isolation. To him, everyone learns in their own manner. Some students possess the ability to work

independently, while others find comfort in their community on campus with easy access to professors or their fellow students.

Vanbuskirk (2021) concurs that the mental health toll of distance learning has been well documented. Childhood rates of mental health conditions, such as depression, anxiety, and eating disorders, rose sharply while pupils were out of school. And many of those with pre-existing mental health conditions reported a worsening of symptoms. Feelings of isolation (as well as suicide risk) also increased, which was a big reason many educators, doctors, and parents called for a return to in-person schooling.

The Science Prog (2020) reports cases of stress and anxiety They explain that there are many cons of using technology among pupils. A negative effect of online learning with pupils is that it makes the pupils introverted. As pupils are exposed to minimal interaction, they are exposed to social anxiety. More so, e-learning affects eyesight. All screens have bright and harmful light that affects the eyesight of pupils. Another major reason why parents should monitor the time spent by pupils online as it can cause obesity.

### 2.1.6 How to Improve E-learning

Like any other form of learning, there are certain conditions that need to be taken into account before any successful learning can take place. For example, Zubrick et al. (2010) have identified that the basic human needs of students must first be met for education programmes to be able to succeed, especially with regards to mental health and well-being. Studying the impacts of online learning on the students' mental and social-emotional well-being is necessary to ensure students' health, academic success, equity, and inclusion. They added that it is necessary to adjust the curriculum and to

address individual learning needs for students to reconnect and also highlighted that students' and educators' well-being is a priority because this impacts student learning.

Hamzeh (2021) recommended that teachers need to be involved in planning so that technology fits with instructional needs; however, the sudden changes to educational delivery in response to the pandemic prevented this. Moreover, teachers need time to upskill in facilitation techniques and assessment practices if teaching is offered solely in online mode.

Also, for the purpose of a successful electronic learning, the are some gadgets and online platforms that facilitate its success. Facilitators are to use online teaching strategies to enhance learning of their students. In this 21$^{St}$ Century, there are diverse ways to incorporate online teaching and learning. A view shared by Wandera (2012). Heather (2018) also calls for the incorporating technology into teaching is a great way to actively engage your students, especially as digital media surrounds young people in the 21st century. Interactive whiteboards or mobile devices can be used to display images and videos, which helps students visualize new academic concepts. Learning can become more interactive when technology is used as students can physically engage during lessons as well as instantly research their ideas, which develops autonomy. Mobile devices, such as iPads and/or tablets, can be used in the classroom for students to record results, take pictures or videos or simply as a behaviour management technique. Teach.com (2020) also suggests that advancements in technology have propelled the education sector in the last few decades. As the name suggests, the high-tech approach to learning utilizes different technology to aid students in their classroom learning. Many educators use computers and tablets in the classroom, and others may use the internet to assign homework. The internet is also

beneficial in a classroom setting as it provides unlimited resources. Teachers may also use the internet in order to connect their students with people from around the world. Some of the notables are, G-Suite (Gmail, Docs, Sheets, Classroom, Drive, and Calendar); Tablets/laptops; Gamification software (such as 3DGameLab and Classcraft) and Education-focused social media platforms (such as schoology and Seesaw).

Tamm (2022) has suggested some ways to solve the challenges of -learning and improving it. He wrote that there are numerous considerations for quality assurance of E-Learning, and they must be followed in order to ensure the authenticity of E-Learning. Additionally, there are accreditation management systems such as Creatrix which provide a centralized solution for the accreditation process. Again, implementing hands-on student projects in conjunction with one-on-one mentorship are some of the most effective ways of developing practical skills in online students. There are several examples of successful practice-based online courses on platforms such as Udacity and Springboard. Finally, he suggested that Peer-to-peer group activities and online lectures which require communication must be used even in an online learning environment. In doing so, we can ensure that E-Learning does not fail to teach students the communicational skills necessary to succeed in real working environments. Similarly, instructors also need proper training to tackle the technical aspect of online learning: the use of video and audio recording equipment, virtual classroom and lecture capture software, and of course the Learning Management Software (LMS). The combination of all these new skills represents a steep learning curve for the teacher, but thoughtful investment in proper training will pay off tenfold for the institution, the teacher, and the students alike (Thompson, 2021). He further posited that the good news is online virtual classroom platforms have been working to

bridge those gaps, recreating the feeling of community in the virtual space by producing a series of tools that encourage learners to actively participate in live sessions. Online education must support the social aspect of learning to match the effectiveness of traditional classes. The Science Prog (2020) added that parents should monitor pupils to ensure they do not spend up a lot of time online.

Further, Slamat (2020) has suggested some strategies to improve e-learning. He suggested that the principals of schools provide a circular to the teacher regarding the implementation of online learning; each class teacher creates a WA group as a place to carry out online learning; the classroom teacher provides information to parents regarding the implementation of online learning; each teacher prepares a special online learning schedule that is delivered to students and parents through the WA group that has been created. This can be seen from the findings that students in the online learning process will learn independently and independently. Students can create their own learning atmosphere that is comfortable and according to their wishes in their respective homes. It is also postulated that online learning is carried out in a structured manner according to the schedule given by the teacher. The teacher designs online learning that can activate students, such as through games. Even though they are not face to face with each other, there is still interaction between students and teachers, as well as between students and each other. Students' ability to operate mobile phones is still weak; this of course can hinder the course of the online learning process itself. However, the teacher has overcome this by providing home visits to students who have not been able to operate mobile phones, especially for low grade students. The second factor in the learning process is the teacher. The teacher is the initial initiative maker and the director and guide, while the students are those who experience and are actively involved in obtaining self-change in learning. Teachers

must have professional competence (mastery of subjects), pedagogy, personality and social.

## 2.2 Theoretical Perspective

### 2.2.1 The Connectivists Learning Theory (2005) – Reviewed by the Western Governors University (2021).

In other to get an in-depth insight into the topic, a seemingly modern learning theory known as Connectivism is reviewed from experts' views and how they relate to this study.

According to the Western Governors University (2021), Connectivism was first introduced in 2005 by two theorists, George Siemens and Stephen Downes. Siemens' article Connectivism: Learning as a Network Creation was published online in 2004 and Downes' article An Introduction to Connective Knowledge was published the following year.

They continued that Connectivism is a relatively new learning theory that suggests students should combine thoughts, theories, and general information in a useful manner. It accepts that technology is a major part of the learning process and that our constant connectedness gives us opportunities to make choices about our learning. It also promotes group collaboration and discussion, allowing for different viewpoints and perspectives when it comes to decision-making, problem-solving, and making sense of information. Connectivism promotes learning that happens outside of an individual, such as through social media, online networks, blogs, or information databases. This learning theory proposes that learning is more than our own internal construction of knowledge. Rather, what we can reach in our external networks is also considered to be learning. From this theory, two terms—nodes and links—have been

commonly used to describe how we gain and connect information in a network. In connectivism, students are seen as “nodes” in a network. A node refers to any object that can be connected to another object, like a book, webpage, person, etc. Connectivism is based on the theory that we learn when we make connections, or “links,” between various "nodes" of information, and we continue to make and maintain connections to form knowledge.

In the classroom situation, connectivist viewpoint, the new learning responsibilities shift from the teacher to the learner. Unlike traditional teaching methods and other theories like constructivism or cognitivism, the educator’s job is to guide students to become effective agents for their own learning and personal development. In other words, it’s up to the learner to create their own learning experience, engage in decision making, and enhance their learning networks. Connectivism relies heavily on technology, so the first step to creating a connectivist classroom is to introduce more opportunities for digital learning—like online courses, webinars, social networks, and blogs.

### 2.2.2 How Connectivism Works in Education

For an effective incorporation of this theory in education, these modules were suggested as being very effective.

#### 2.2.2.1 Social Media

One-way teachers implement connectivism is through the use of classroom social media. For example, a class Twitter account can be used to share information, engage in discussion or announce homework tasks. This can help boost class engagement and open the lines of discussion among students and teachers.

#### 2.2.2.2 Gamification

Gamification takes assignments and activities and puts them into a competitive game to make learning more of an interactive experience. There are many learning-based apps and instructional technologies teachers can use to add an element of gamification to the classroom. One example is DuoLingo, an online learning tool that helps students learn languages through fun, game-like lessons. Teachers can track students' progress while students can earn “points” for progressing through lessons. Other examples include apps like Brainscape, Virtual Reality House, and Gimkit, just to name a few.

#### 2.2.2.3 Simulations

Simulations engage students in deep learning that empowers understanding as opposed to surface learning that only requires memorization. They also add interest and fun to a classroom setting. Take, for example, a physics class where students create an electric circuit with an online programme. Instead of being instructed via a book or classroom lecture, they’re learning about physics by simulating an actual physical setup. Some of the advantages of this theory in the classroom in are that it creates collaboration. Within connectivism, learning occurs when peers are connected and share opinions, viewpoints, and ideas through a collaborative process. Connectivism allows a community of people to legitimize what they’re doing, so knowledge can be spread more quickly through multiple communities. It empowers students and teachers. Connectivism shifts the learning responsibilities from the teacher to the student. It’s up to the learner to create their own learning experience. The role of the educator then becomes to “create learning ecologies, shape communities, and release learners into the environment” (Siemens, 2003). It embraces

diversity Connectivism supports individual perspectives and the diversity of opinions, theoretically providing for no hierarchy in the value of knowledge.

In relation to this study, the theory suggests the use of technology in education by providing contents that learners can relate or connect with.

### 2.3 Empirical Perspective

Khan and Setiawan (2022) carried a study on the impacts of e-learning and found that e-learning improved student perceptions, communication, quality of education, critical thinking, self-learning and the result also shows that the impact of teacher's responsibility and students' satisfaction in higher education.

Fayomi et al (2019) embarked on a similar study to analyse the impacts of e-learning in facilitating academic performance. Analysis of the result from the study provides evidence of significant impact of e-learning in facilitating academic studies and self-development resulting to improved learning process and high academic performance.

Also, Hamzeh (2021) undertook a study on this topic and the findings highlighted that student do not equate to academic selves, that the level of expected responsiveness was surprisingly high while online, and that new connections and social and emotional support systems emerged. These findings have important implications for understanding how teachers and educational professionals iterate their practices of online learning going forward.

Again, Sufrizal et al. (2021) discovered in a survey that the difficulty of implementing online learning lies in the difficulty of collaborating with parents in helping learning from home, stated difficulties in assessing child development, time effectiveness less learning. Also, the contributing factors were that parents were busy due to work, the

learning support facilities were limited leading to learning objectives not achieved. So it can be concluded that the difficulty of online learning is caused by the coordination of teachers and parents who have different activities, so there is a lack of synergy in assisting children when carrying out online learning.

Yusnilita (2020) found from his survey that online learning is interesting for students. It was discovered that 65% of students answer that online learning class are easier than regular class and 5% answer not. 85% of students always prepare their learning with taking notes or record it. 90% of students answer online learning practical for them. When talking about the time of online learning 7% of students feel disturb and hurry but 70% are not. 75% of students ask that online learning is cheaper than they should go to class, because they need to pay for bus fare, lunch, clothes etc. 68% of students always join discussion along the online learning. 75% of students feel more confident joining online learning that face to face in class. That's why 60% of students think online learning can improve high quality of learning. And 70% of the teacher always accommodate their students in learning. The teacher also gives them feedback after they send their assignment and more of the students feel more confidence with online learning. In summary, online learning provide students practical and flexible way in learning, it also makes them more creative and active. Online learning gives them some benefit in learning.

Utomo (2021) also found in a survey that the impact of online learning on the teachers, students and parents could be seen by creating WhatsApp groups for each class. The positive impacts included that teachers, students and parents obtained new learning experiences, developed technology skills and could benefit from the flexible timing of the online environment. The negative impacts were having to deal with

internet credits, issues with internet signal, lack of technology skills and incomplete materials based on curriculum achievements.

### 2.4 Summary of the Review

This chapter sought for expert views and scholarship ideas on the impacts of -learning on kindergarten learners. It is reviewed at three main levels: known as Conceptual, Theoretical and Empirical.

The conceptual explanations of e-learning have been presented. Also, the positive impacts have been discussed as helping learners move at their own pace, saving time and being cost effective among others. On the other hand, the negative impacts include isolation and anxiety, credibility issues and the technical difficulties as well as learners being too young to be exposed to electric gadgets.

Suggestions for improvements have also been presented from experts' point of view which include adequate technological training for facilitators, peer-to-peer group activities and parents monitoring the activities of their pupils on the internet. The theory of Connectivism was reviewed in relation to the topic under study.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.0 Introduction

This chapter describes the methods and procedures used to conduct the study and focuses on the research design, population, sample and sampling technique, research instrument, data collection procedure and analysis.

## 3.1 Research Philosophy

Researchers' perception of the best research approach continues to be a debatable topic. According to Sarantakos (2004), there are three basic steps for selecting in research. He stresses the selection of appropriate paradigm, selection of methodology and selection of a set of method for collecting and analyzing data. Related to the selection of research design are the paradigms of positivism, transformative, pragmatic and interpretative.

### 3.1.1 Positivism Paradigm

According to Johnson and Christensen (2008), the positivist paradigm is the idea that only what can empirically be observed is important and that science is the only true source of knowledge. The positivist philosophy, located within normative studies, is underpinned by the assumption that "human behaviour is essentially rule-governed (Cohen, Mannion & Morrison, 2004). To the positivist, the use of scientific methods to uncover reality is essential. The positivists believe that there is one reality in the world. The researcher's role is therefore, to discover the universal laws that govern human behaviour. They also argue that human behaviour is described by predictability and causality. It follows that behaviour is both observable and

measurable, which makes it possible to discover the patterns and regularities of such behaviour.

### 3.1.2 Interpretive Paradigm

In sharp contrast, the interpretive paradigm developed as a critique of positivism in the social sciences. The interpretivist believes that reality as we know it is constructed intersubjectively through the meanings and understandings developed socially and experientially. Therefore, we cannot separate ourselves from what we know. The investigator and the object of investigation are linked such that who one is and how one understands the world is a central part of how one understands himself/herself, others and the world (Blumer, 1984).

Interpretive paradigms rely heavily on naturalistic methods (interviewing and observation and analysis of existing texts). These methods ensure an adequate dialogue between the researchers and those with whom they interact in order to collaborate meaningfully with reality (Dash, 2005). The interpretivist considers educational research and the people in them as being social construction rather than the result of external mediators assumed by the positivist research paradigm (Carr & Kemmis, 1986). From the epistemological point of view, people generally perceive social reality in diverse ways. As a result, their actions and decisions are influenced by the interpretations and other social reality (Radner, 2002).

### 3.1.3 The Critical Paradigm/Transformative Paradigm

The Critical paradigm situates its research in social justice issues and seeks to address the political, social and economic issues, which lead to social oppression, conflict, struggle, and power structures at whatever levels these might occur. Because it seeks to change the politics so as to confront social oppression and improve the social

justice in the situation, it is sometimes called the Transformative paradigm. This paradigm assumes a transactional epistemology, (in which the researcher interacts with the participants), an ontology of historical realism, especially as it relates to oppression; a methodology that is dialogic, and an axiology that respects cultural norms (Kivunja & Kuyini, 2017).

### 3.1.4 The Pragmatic Paradigm

This Paradigm arose among philosophers who argued that it was not possible to access the 'truth' about the real world solely by virtue of a single scientific method as advocated by the Positivist paradigm, nor was it possible to determine social reality as constructed under the Interpretivist paradigm. For them, a mono-paradigmatic orientation of research was not good enough. Rather, these philosophers (such as Alise & Teddlie, 2010; Biesta, 2010) argued that what was needed was a worldview which would provide methods of research that are seen to be most appropriate for studying the phenomenon at hand. So, these theorists looked for approaches to research that could be more practical and pluralistic approaches that could allow a combination of methods that in conjunction could shed light on the actual behaviour of participants, the beliefs that stand behind those behaviours and the consequences that are likely to follow from different behaviours.

This gave rise to a paradigm that advocates the use of mixed methods as a pragmatic way to understand human behaviour – hence Pragmatic paradigm. So, as explained briefly in the brackets, this paradigm advocates a relational epistemology (i.e. relationships in research are best determined by what the researcher deems appropriate to that particular study), a non-singular reality ontology (that there is no single reality and all individuals have their own and unique interpretations of reality),

a mixed methods methodology (a combination of quantitative and qualitative research methods), and a value-laden axiology (conducting research that benefits people).

The discussion and examination of the various paradigms have revealed the strength and weaknesses of each of them. Due to the purpose of this study, the positivist approach is adopted. The reason for the choice is that it is best for investigating the impacts of e-learning on pupils' learning. Particularly, the positivist philosophy was considered because it affords researchers to apply methods and techniques within the quantitative approach. The study therefore adopted the quantitative methodology, where numerical data was collected from a large sample through structured questionnaire and statistical analytical procedures were used to analyse the data (Leedy & Ormrod, 2014).

### 3.2 Research Design

According to Babbie (cited Appiah, 2019) the research design is a plan or blueprint of how one proposes to conduct research. Thus, research design determines the research methods and procedures to be applied as determined by the nature of the research problem or objectives of the study. Jahoda, Deutch and Cook (cited in Akhtar, 2016) also explain that a research design is the arrangement of conditions for the collection and analysis of data in a manner that aims to combine action relevance to the research purpose with economy and procedure. Research design is the plan, structure and strategy and investigation concaved so as to obtain ensured to search question and control variance. Creswell (2014) posits that a research design can be qualitative, quantitative or both. Research design relates to the general approach adopted in executing the study. The researcher has to specify the type of the design followed in the study (Oyedele, 2003).

The decision to use qualitative, quantitative and mixed methods is replete with the assumption concerning "the nature of knowledge and reality and the process of acquiring knowledge about reality" (cited by Cresswell, 2014). Experts cite many justifiable reasons for the choice of any of the methods. According to Vaughan (2021), it is best to use qualitative research because it can capture changing attitudes within a target group such as consumers of a product or service, or attitudes in the workplace. He continues that qualitative approaches to research are not bound by the limitations of quantitative methods. Qualitative Research provides a much more flexible approach. If useful insights are not being captured, researchers can quickly adapt questions, change the setting or any other variable to improve responses (Vaughan, 2021). According to Johnson et al (2008), quantitative design allows the researcher to work with larger sample. Thus, a much broader study can be done. The design is also cost-effective. Thus, the cost of someone participating in a quantitative survey is typically far less than the price of a focus group

This study is quantitative in nature and it adopts the descriptive survey approach. It was adopted based on its associated strength in relation to the topic under study. It is also known as statistical research which describes phenomena as they exist. It is used to identify and obtain information on characteristic of a particular issue like community, group or people. In other words, we can say that this type of research describes social events, social structure, social situations, etc. It is used to study the current situation (Akhtar, 2016).

Specifically, quantitative data was collected by relying on the perceptions of parents and teachers to determine the impacts of e-learning on the academic performance of kindergarten children in Rev. Wilson B Basic School. The choice was in line with

Bhat (2020) that quantitative research is for cases where statistical conclusions to collect actionable insights are essential. He claimed that numbers provide a better perspective to make critical business decisions. Insights drawn from hard numerical data and analysis prove to be highly effective when making decisions related to the future.

### 3.3 Population

Cohen, Manion and Morrison (2006) explain that population describes the characteristics of object, people, humans, groups, organization, cases or elements from which generalization can be made from its study. The study population is the representation of elements from which the sample is selected and every individual with the same characteristics have the same chance of selecting for the sample (Willie 2022). According to Willie (2022), the population is regarded as the "target population" and it is the set of elements that the investigator focuses upon. According to Asiamah et al (2017), target population refers to the entire group of individuals or elements with common attributes or characteristics from which samples are taken for measurements. Therefore, the target population refers to the entire similar group of individuals or elements from which the sample is derived for a study. The target population for the study is all kindergarten pupils and basic school teachers in the Mfantseman Municipality in the Central Region.

Accessible population, on the other hand, is the portion of the target population who are actually available and can be accessed at the time of a study Asiamah et al (2017). In this study, the accessible population is all teachers in Rev. Wilson Basic School. They were 24 in number.

### 3.4 Sample and Sampling Procedure

Sampling is a process of selecting a number of individuals for a study in such a way that they represent the larger group from which they were selected. It is a smaller group drawn from the population that has the characteristics of the entire population. The observations and conclusions made against the sample data are attributed to the population as a whole (Momoh, 2021). Welsh (2006) also defines sampling as the process of choosing from a much larger population, a group about which we wish to make generalised statements so that the selected part will represent the total group. Sampling per say is not a technique or procedure for getting information but it ensured that any technique used helped in getting information from a smaller group, which accurately represented the entire group (Teye, 2012).

The census survey technique was used to select the respondents. According to the Australian Bureau of Statistics (2020), a census is a collection of information from all units in the population or a 'complete enumeration' of the population. We use a census when we want accurate information for many subdivisions of the population. Such a survey usually requires a very large sample size and often a census offers the best solution. The Bureau cites the following as some of the advantages of using the technique: Data for small areas may be available, assuming satisfactory response rates are achieved; Data for sub-populations may be available, assuming satisfactory response rates are achieved; The estimates are not subject to sampling error.

The technique was appropriate because the researcher wanted to use all the teachers in the school as respondents. They were 24.

### 3.5 Research Instrument

According to Richard (2013), the term research instrument refers to any tool that you may use to collect or obtain data, measure data and analyse data that is relevant to the subject of your research.

Questionnaire was the instrument used to collect data for all the research questions. According to Debois (2019), a questionnaire is an instrument for collecting data, which almost always involves asking a given subject to respond to a set of oral or written questions. An advantage of using questionnaire is that it allows easy analysis and visualization. A major disadvantage of the instrument is that when using questionnaires, there is a chance that some questions will be ignored or left unanswered Debois (2019).

The questionnaire was in four sections. Section A sought data on demographic characteristics of respondents, Section B contained questions on a five-point Likert scale which sought responses on the positive impacts of E-learning on kindergarten pupils' learning. The next section which was Section C similarly contained items on a five-point Likert scale which sought data on the negative impacts of e-learning on kindergarten pupils' learning. Finally, Section D also contained questions on a five-point Likert scale which sought responses on how e-learning among kindergarten pupils can be improved.

### 3.6 Validity of Instrument

The evidence of validity and reliability are prerequisites to assure the integrity and quality of a measurement instrument (Kimberlin & Winterstein, 2008). According to Bartlett, Kotrilik and Higgins (2001), validity explains how well the collected data

covers the actual area of investigation. Validity basically means measure what is intended to be measured.

### 3.6.1 Face Validity

According to Boudreau, Gefen and Straub (2001), face validity is a subjective judgment on the operationalization of a construct. Face validity is the degree to which a measure appears to be related to a specific construct, in the judgment of non-experts such as test takers and representatives of the legal system. That is, a test instrument has face validity if its content simply looks relevant to the person taking the test. It evaluates the appearance of the questionnaire in terms of feasibility, readability, consistency of style and formatting, and the clarity of the language used (Boudreau, Gefen & Straub 2001). It can therefore be inferred that face validity refers to researchers' subjective assessments of the presentation and relevance of the measuring instrument as to whether the items in the instrument appear to be relevant, reasonable, unambiguous and clear

According to Jones and Rattray (2010), face validity can be ensured by getting friends to test-run the instrument to see if the questions appear to be relevant, clear and unambiguous. Therefore, the instrument was given to colleagues to express their views on whether the items in the instrument was measuring what they intend to. Their responses were then considered in improving the face validity of the instrument.

### 3.6.2 Content Validity

Breweton and Millward (2001) define content validity as the degree to which items in an instrument reflect the content universe to which the instrument will be generalized. Also, Sekaran (2006) states that content validity ensures that a measure includes an adequate and representative set of items to cover a concept, and it can be ensured by

expert agreement. It can therefore be inferred that in general, content validity involves evaluation of a new survey instrument in order to ensure that it includes all the items that are essential and eliminates undesirable items to a particular construct domain.

In order to establish the content validity of the instrument, it was first submitted to the supervisor. The supervisor then checked and made corrections which were effected before the instrument was used to collect the data.

### 3.7 Reliability of Instrument

Carmines and Zeller (2006) explain that reliability concerns the extent to which a measurement of a phenomenon provides stable and consist result. Reliability is also concerned with repeatability. For example, a scale or test is said to be reliable if repeat measurement made by it under constant conditions will give the same result (Moser & Kalton, 2010). Testing for reliability is important as it refers to the consistency across the parts of a measuring instrument. The most commonly used internal consistency measure is the Cronbach Alpha coefficient. It is viewed as the most appropriate measure of reliability when making use of Likert scales (Huck, 2012).

#### 3.7.1 Pre-Testing of Instrument

According to Burns and Grove (2011), pre-testing of research instruments involves a small-scale study that researchers carry out before the real survey to trial-test data gathering tools. Pre-testing is a key stage in the development of the instruments which allows assessment of the instruments before the main study is conducted (Parahoo, 2006).

The instrument was tested in two schools in the Mfansteman municipality, thus Methodist A Basic School and SDA Basic school. These schools were selected because they had similar characteristics of the school in the study area. The sample size of the pre-testing was 10% - 30% of the sample as suggested by Cooper and Schilder's (2011). Therefore, 7 respondents participated in the pre-testing.

Field (2005) further argued that Cronbach's alpha coefficients value from 0.7 to 0.8 is an acceptable while values more than 0.8 indicate good internal consistency. The overall Crombach Alpha estimate was 0.82. This shows that the instrument was reliable.

### 3.8 Data Collection Procedure

The researcher being a teacher in the school sought permission from the headteacher and explained the purpose of the study. The researcher also spoke to the teachers and explained the purpose to them. A date was then scheduled for the administration of the questionnaire instrument. During the administration of the questionnaire, all respondents were assured confidentiality and privacy of data. Again, they were given the choice to withdraw anytime they wanted. In some circumstances where respondents were busy with their duties, the researcher rescheduled the sessions. The order of the of questions was organized to encourage the participants to remain focused on their responses (Creswell, 2014). Demographic data was first collected before the various questions to address the main research questions.

Each step of the research process was recorded chronologically as a means of creating an audit trail to ensure the reliability of findings (Merriam, 2009). By comparing the responses to the information provided in the documents, there was a better understanding of the data.

### 3.9 Data Analysis

The data collected was checked and corrected for errors. Responses from the questionnaires were organized using the Statistical Package for Service Solution (SPSS). Descriptive Statistics such as frequencies and percentages, mean and standard deviation were used the data obtained. Also, inferential statistics was used to check the significance of findings.

### 3.10 Ethical Considerations

For the sake of ethics, permission from school authority was sought. Explanation was also given to the participants about the purpose of the study and the approval and co-operation of the respondents were sought before being allowed to participate in the study. All these participants were contacted personally with oral invitation to participate in the study. With this invitation, participants were introduced to the study and all information pertaining to the process of the administration of the questionnaire.

In the view of Somekh and Lewin (2005), confidentiality is an ethical principle that motivates participants to express their opinion in confidence. Confidentiality was maintained as respondents were assured that their names will be kept anonymous and therefore, they were not expected to provide their names. Participants were not forced to take part in the study against their will and they were informed that they have the right to participate in the study or withdraw from the study at any possible time.

Considerable care was taken to ensure that respondents did not feel pressured to participate in the study. It was explained to the participants that their involvement was voluntary, and refusing to take part or to continue participating will not present any disadvantages or loss to them. They were also informed that they could break or end

their participation if they so require. As suggested by Merriam (2009), an open and positive relationship were developed with each participant by letting them have sufficient time to respond to questions, voice their concerns and ask questions.

# CHAPTER FOUR

# RESULTS AND DISCUSSIONS

## 4.0 Introduction

This chapter presents the results obtained for all the research questions and the discussions on these results. The primary aim of this study was to assess the impacts of e-learning on pupils at the kindergarten in Rev. Wilson B Basic School in Mfantseman Municipal. To this end, three research questions were formulated to guide the study. Specifically, the study sought to find out the positive impacts of e-learning on kindergarten pupils' learning, the negative impacts and the measures that can be adopted to improve e-learning among these pupils. The analysis was based on the 100% return rate of the data obtained from 24 respondents who were selected through the census survey technique. The analysis and interpretation of data were carried out based on the results of the three (3) research questions set for the study. The obtained data were analysed using mean and standard deviation.

## 4.1 Demographic Characteristics of Respondents

The demographic characteristics of respondents were discussed in terms of sex, age and teaching experience. These variables were important because the researcher believes that they affect respondents' perception of the topic under discussion. Table 4.1 gives a summary of the social characteristics of the respondents.

*Table 4.1: Social Characteristics of Respondents*

| Variable | Sub-scale | Frequency | Percentage |
|---|---|---|---|
| Sex of Respondents | Male | 13 | 54.2 |
| | Female | 11 | 45.8 |
| | **Total** | **24** | **100** |
| Ages of Respondents | 20 – 29 years | 14 | 58.3 |
| | 30 – 39 years | 7 | 29.2 |
| | 40 – 49 years | 2 | 8.3 |
| | 50 – 59 years | 1 | 4.2 |
| | **Total** | **24** | **100** |
| Teaching experience | 1 – 5 years | 10 | 41.7 |
| | 6 – 10 years | 9 | 37.5 |
| | 11 – 15 years | 3 | 12.5 |
| | 16 and above | 2 | 8.3 |
| | **Total** | **24** | **100** |

Source: Field data (2022)

Results from Table 4.1 show that a majority of 13 respondents representing 54.2% were males and 11 of them which represents 45.8% were females. With respect to the ages of respondents, a majority of 14 (58.3%) were aged from 20 – 29 years. Also, 7 respondents representing 29.2% were aged from 30 – 39 years. Those aged from 40 – 49 years were 2 representing 8.3%. Finally, only 1 respondent (4.2%) was aged from 50 – 59 years. When it comes to teaching experience, a majority of 10 respondents representing 41.7% had taught for 1 to 5 years. This was followed by those who had taught for 6 – 10 years who were 9 representing 37.3%. Those who had taught for 11 – 15 years were 3 (12.5%). finally, only 2 respondents representing 8.3% had taught for 16 years and above.

The implications of the data are that respondents have a lot of teaching experience and are more informed on the subject.

**Research Question One: What are the positive impacts of e-learning on the learning of kindergarten pupils of Rev. Wilson B Basic School in the Mfantseman Municipality in the central region of Ghana?**

This question was asked in order to assess the positive impacts of e-learning on kindergarten pupils' learning in the school. In order to gets answers for this question, respondents were asked to respond to questionnaire items on a five-point Likert scale which was coded as Strongly Agree (SA) =5, Agree (A) = 4), Undicided = 3, Disagree (D) = 2 and Strongly Disagree (SD) = 1. For the purpose of analysis, a mean score of 3 or above indicates agreement whereas a mean score less than 3 shows disagreement. Results are summarized in Table 4.2

*Table 4.2: Positive impacts of e-learning on kindergarten pupils' learning*

| S/N | Impact of e-learning on kindergarten pupils' learning | Mean | Standard Deviation |
|---|---|---|---|
| 1. | E-learning improves the quality of pupils' learning | 3.3 | 1.2 |
| 2. | E-learning has made pupils' learning convenient and flexible | 3.9 | 1.0 |
| 3. | E-learning motivates pupils | 3.9 | 1.0 |
| 4. | It improves pupils' communication skills | 4.1 | 1.1 |
| 5. | Pupils learn at their own pace | 4.3 | 0.2 |
| 6. | Pupils can now retain more information | 4.2 | 1.0 |
| 7. | It develops technological expertise of pupils | 4.5 | 0.9 |
| 8. | It improves hand-eye coordination skills, mathematical skills and social competence | 4.3 | 1.1 |
| 9. | It encourages curiosity through productive engagement | 4.3 | 1.1 |
| 10. | Mean of means | 3.6 | 0.9 |

Source: Field data (2022)

Results in Table 4.2 show that respondents agree to all the items as indicated by the mean on means (M=3.6.0, SD=0.9). Respondents agree (M=4.5, SD=0.9) that e-learning develops the technological expertise of pupils. Also, respondents indicated their agreement (M=4.3, SD=1.1) that e-learning improves hand-eye coordination skills, mathematical skills and social competence. Similarly, asked if e-learning encourages curiosity through productive engagement, respondents indicated their agreement (M=4.3, SD=1.1). Also, majority of respondents agree (M=4.3, SD=0.2) that e-learning gives learners the opportunity to learn at their own pace. Asked if e-learning ensures that pupils retain more learnt information, respondents agreed (M=4.2, SD=1.0). Furthermore, respondents indicated their agreement (M=4.1, SD=1.1) to that e-learning improves pupils communication skills. The results also indicate that respondents agree (M=3.9, SD=1.0) that e-learning motivates pupils. Similarly, respondents agree (M=3.9, SD=1.0) that e-learning offers flexibility and convenience in pupils' learning. Finally, respondents agree (M=3.3, SD=1.2) that e-learning improves quality of pupils' learning.

The study has found that the positive impacts of e-learning on kindergarten pupils learning are: e-learning improves the quality of pupils' learning, e-learning makes pupils learning convenient and flexible, e-learning motivates pupils, it improves pupils' communication skills, pupils learn at their own pace, pupils retain learnt information, it develops the technological expertise of pupils, it improves hand-eye coordination skills, mathematical skills and social competence, and it encourages curiosity through productive engagement.

The quality of the educational system of any country is a major factor that contributes to the achievement of the goals that are established for that system. The provision of

quality education has always been the vision of successive governments over the years. E-learning as has been established by the study contributes to the provision of quality. This finding agrees with the position of Fayomi, Ayo, Ajayi and Okorie (2019). According to them, e-learning through the use of new multimedia technologies and the internet in learning is a means to improve accessibility, efficiency and quality of learning by facilitating access to resources and services as well as remote exchanges and collaboration.

Another positive impact of e-learning as established by this study is that fact that e-learning makes learning flexible and convenient. Kindergarten pupils being able to learn whiles they are in their homes offer them the convenience and flexibility of learning what they want and when they want to. E-learning tools such as the internet, television and radio can be accessible anywhere and pupils can actually use these tools whenever it is appropriate for them. This position is further collaborated by Yusnilita (2020) who concluded that online learning provides students practical and flexible way in learning, it also makes them more creative and active. Also, according to Collis (2013), the use of technology for teaching have increased students' access and convenience to instructional materials learning. Similarly, Bader and Ko¨ttstorfer (2013) claimed that the advantages shown by e-learning are flexibility, accessibility, satisfaction and cost efficiency. Similarly, Lawless (2018) claimed that pupils are likely to feel more motivated to further their academic goals through e-Learning, as it gives them the flexibility to learn at their own pace and from a location of their choosing.

Motivation is a key element in any effective learning environment and pupils learn better when they are motivated both intrinsically and extrinsically. Learner motivation

is also seen to influence the quality of any educational system and this study has revealed that e-learning offers students the motivation to learn. This is so because pupils interacting with devices such as the computer, smart boards and other tools builds interest and makes learning fun. This position was earlier established by Arkorful and Abaidoo (2014) who also found that e-learning involves the use of digital tools for teaching and learning and it makes use of technological tools to enable learners' study anytime and anywhere which involves the training, delivery of knowledge and motivating students to interact with each other, as well as exchange and respect different point of views. In Lawless' (2018) view, e-learning allows learners to quickly and more easily complete their training, resulting in improved performance and greater productivity which makes them feel more motivated to further their academic goals.

Effective communication is essential in every classroom interaction. The study has revealed that the use of e-learning platforms improves communication the communication skills of pupils which is an essential element in any classroom interaction. This position was confirmed by earlier studies. For example, Khan and Setiawan (2022) carried a study on the impacts of e-learning and found that e-learning improved student perceptions, communication, quality of education, critical thinking, self-learning and the result also shows that the impact of teacher's responsibility and students' satisfaction in higher education. Similarly, Arkorful and Abaidoo (2014) concluded that e-learning eases communication and improves the relationships that sustain learning. They explained that its adoption in some institutions has increased faculty and learner's access to information and has provided a rich environment for collaboration among students which have improved academic standards.

It is really important for effective learning when pupils determine the learning processes and are able to learn at their own pace. No two individuals are the same and learning becomes even more effective if the learning does so at his own pace. This study has revealed that e-learning offers pupils the opportunity to learn at their own pace without pressure from other learners. The use of e-learning platforms such as the internet and computers offer the learner to access information whenever they want unlike the traditional classroom where everyone must learn at the instructor's pace. This finding corroborates the position of Tamm (2020) who claimed that e-learning platforms such as online learning allows students to progress at their own pace, to submit assignments and take assessments at times best suited for them. Similarly, Lawless (2018) claimed that learners appreciate that they can participate in training at their convenience which makes them feel more motivated to further their academic goals through e-Learning, as it gives them the flexibility to learn at their own pace and from a location of their choosing.

Effective teaching and learning only occurs when learners are able to retain learnt information. It is therefore important for educators to exploit effective means for learners to remember what they have taught. One of such means is e-learning as has been proven this study. Pupils are able to retain information because of the opportunity to interact with the various teaching and learning resources that come with e-learning such as the computer and the use of the internet. This position is upheld by numerous findings. According to Orchid International School (2020), e-learning encourages curiosity through productive engagement and by having online teachers go through complex subjects in a fun and interactive manner, pupils can be taught to organically learn some of the most challenging topics for their age. Curiosity can be cultivated as well, with the best distance learning in preschool programmes.

Pupils can pick up and retain a lot of information when their minds are activated through productive engagement. Also, according to Bright Path Preschool (2021), the practicality of using digital aids enable learners to acquire knowledge and skills that they can hardly forget and clear memory recollection can be challenging to instil in our young children. Therefore, when it comes to helping our children remember information more clearly, e-learning has attained the position of a learning aid because of the highly visual nature of e-learning platforms, software, and smart hardware that have been extremely helpful in recognition and recollection. In the same way, learning through practical visuals are important because most children are visual learners; 80% of what they learn is through visual reception (The Visual Learning Centers of America, 2019).

E-learning comes with a lot of technological resources and pupils improve their technological expertise they are given the opportunity to interact with these resources. The study has revealed that e-learning develops the technological expertise of pupils. Pupils learn to interact with devices such as the computer, smartphones, internet etc. which builds their expertise. This position is supported by findings by Steinhoff (2016) who claimed that the implementation of e-learning includes computer education and useful online platforms and smart hardware in classrooms. These she adds are important because computer education positively influence the child's development. She argues that computer education facilitates a variety of skills which are also associated with employment in the areas of programming and graphic design. Steinhoff (2016) also acknowledges that children who have had the ability to develop computer operation skills from a very young age will have better life prospects as they grow older. This cannot be disputed for that fact that learners who were born after the advent of computer age are more technologically inclined.

The study has also found that e-learning improves hand-eye coordination skills, mathematical skills and social competence of kindergarten pupils in schools. These are essential for learners in kindergarten because they form the basis upon which other educational skills are built. A study by Steinhoff (2016) also found that the basic skills that e-learning offers pupils are intelligence, emotional intelligence, hand-eye coordination, mathematical skills and social competence. She continues that these skills are essential because in the future, the majority of companies will be web-orientated in their business, and will expect employers to be able to support their business system to the core.

Finally, on the positive effects of e-learning, the study found that it encourages curiosity through productive engagement. This position is further advanced by Orchid International School (2020) which claimed that e-learning encourages curiosity through productive engagement.

**Research Question Two: What are the negative impacts of e-learning on kindergarten pupils of Rev. Wilson B Basic School?**

The researcher asked this question in order to assess the negative impacts of e-learning on pupils learning in the school. Respondents were asked to respond to items on a five-point Likert scale which was coded as Strongly Agree (SA) =5, Agree (A) = 4), Undecided = 3, Disagree (D) = 2 and Strongly Disagree (SD) = 1. For the purpose of analysis, a mean score of 3 or above indicates agreement whereas a mean score less than 3 shows disagreement. Results are summarized in Table 4.3

*Table 4. 3: Negative Impacts of e-learning on Kindergarten Pupils*

| S/N | Negative impacts of e-learning | Mean | Standard Deviation |
|---|---|---|---|
| 1. | E-learning limits human interaction between pupils and the teacher | 4.1 | 1.5 |
| 2. | Lack of human contact affects quality of learning | 4.0 | 1.2 |
| 3. | It puts financial burden on parents and guardians | 4.1 | 1.5 |
| 4. | It negatively affects the culture of the society | 1.7 | 1.3 |
| 5. | Lack of technical expertise on the parts of parents, teachers and pupils affects the quality of learning | 4.2 | 1.3 |
| 6. | Difficulty in assessing pupils effectively | 3.8 | 1.6 |
| 7. | Causes mental issues for the child | 1.7 | 1.4 |
| 8. | Technical challenges such as unstable internet affects quality | 3.8 | 1.5 |
| 9. | Causes sense of isolation among pupils | 3.9 | 1.5 |
| 10. | Mean of means | 3.5 | 1.4 |

Source: Field data (2022)

Results from Table 4.3 show that respondents agree to majority of the statements as indicated by the mean of means (M=3.4, SD=1.4). With respect to the negative impacts of e-learning on the pupils' learning, majority of the respondents agree (M=4.2, SD=1.3) that lack of technical expertise on the parts of parents, teachers and pupils affects the quality of teaching and learning.

Also, respondents agree (M=4.1, SD=1.5) that e-learning limits human interaction between the teacher and pupils. Equally, respondents were in agreement (M=4.1, SD=1.5) that e-learning puts financial pressure on parents as well as pupils. In the same vein, respondents were in agreement (M=4.0, SD=1.2) When it comes to e-learning causing sense of isolation among pupils, respondents agreed (M=3.9,

SD=1.5). Furthermore, respondents agreed (3.8, SD=1.6) that with e-learning, there is the difficulty of assess pupils effectively.

However, respondents disagreed (M=1.7, SD=1.3) that e-learning negatively affects the culture of the society. Finally, respondents disagreed (M=1.7, SD=1.4) that e-learning causes mental issues for the child.

The study has found the negative impacts of e-learning on kindergarten pupils' learning to include: E-learning limits human interaction between pupils and the teacher, lack of human contact affects quality of learning, it puts financial burden on parents and guardians, lack of technical expertise on the parts of parents, teachers and pupils affects the quality of learning, difficulty in assessing pupils effectively, technical challenges such as unstable internet affects quality, causes sense of isolation among pupils. However, the study found that the negative impacts do not include mental issues for pupils and negatively affecting the culture of the society.

E-learning platforms such as online learning and self-learning through tutorials limits human interactions between pupils and the teacher just as the study has found. Pupils are not able to directly interact with their teachers when the access platforms. Also, the study has found that the lack of human interaction affects the quality of learning that e-learning provides. The finding agrees with the position of Tamm (2022) who found that a major negative impact of e-learning is the fact that participating students experience contemplation, remoteness and a lack of interaction. Khan and Setiawan (2022) also found that there is a lack of direct contact with the group and the teacher, the " face to face" relationship. This is especially important from the point of view of students of social sciences, where it is important not only to acquire knowledge but

also social skills. The big disadvantage is that the group has no social and professional experience.

Technologies that are used to access e-learning platforms do not come cheap. In Ghana, technologies such as the computer and other smartphones are really expensive putting financial burdens on parents and students just as this study has found. These findings are in contraction to the position of findings made by other studies. For example, Lutkevich (2020) maintained that e-learning does not require huge financial might to undertake a course or learning programmes. In effect, he claimed that the learners at the kindergarten level can be given the needed education and training without much financial burden on their parents or guardians. Similarly, Blakely, Shetty and Jacobs (2018) asserted that e-learning can be less expensive. Tamm (2020) also added his view that e- learning is both cost-effective and cost-efficient, as it removes the geographical obstacles often associated with traditional classrooms and education. Lawless (2018) added more by asserting that traditional learning can be expensive and often frustrating to maintain, e-learning removes the need for costly printed learning materials and even on-site instructors.

E-learning requires technical expertise on the part of parents, teachers and pupils. If these skills are unavailable, it affects the quality of e-learning just as this study has found. The position is advanced by Leila et al (2018) who concluded that technical challenges may include internet failure or internet do not work according to what academics require. Success in the implementation of e-learning educational system as one of the main approaches in managing knowledge and educational needs of higher education organization will not be achieved without addressing the different skill, technical and cultural challenges.

Most e-levy platforms require a stable internet connection and when this is non-existent, it affects the effective implementation of the system and the quality of education that the platform provides as revealed by the study. Similar finding was made by Ayuni, Marini, Fauziddin and Pahrul (2021) who position that some affected areas are very difficult to get good signal access due to their location in hilly areas. and this affects effective implementation.

Another negative effect of e-learning on pupils' learning is the difficulty in assessing the progress of pupils. This agrees with the position of Safrizal, Yulia and Suryana (2021) who claimed that the biggest difficulty in implementing e-learning felt by kindergarten teachers in e-learning is the difficulty in assessing children's development both physically, motorically, socially, and cognitively, so it is a difficult task for teachers to make online learning in accordance with the desired expectations.

The study also found that the negative impacts do not include mental issues for pupils and negatively affecting the culture of the society as claimed by Tamm (2022) who claimed that students and teachers who inevitably spend much of their time online can start experiencing signs of social isolation, due to the lack of human communication in their lives which often leads to several mental health issues such as heightened stress, anxiety, and negative thoughts. Vanbuskirk (2021) also claimed that the mental health toll of distance learning has been well documented. He continued that childhood rates of mental health conditions, such as depression, anxiety, and eating disorders, rose sharply while pupils when students are out of school. And many of those with pre-existing mental health conditions reported a worsening of symptoms. Feelings of isolation (as well as suicide risk) also increased, which was a big reason many educators, doctors, and parents called for a return to in-person schooling.

**Research Question Three: In what ways can e-learning among kindergarten pupils be improved in Rev. Wilson B Basic School?**

The researcher asked this question in order to find ways and measures that can be adopted to improve e-learning among kindergarten pupils in the school. Respondents were asked to respond to items on a five-point Likert scale which was coded as Strongly Agree (SA) =5, Agree (A) = 4), Undecided (U) = 3, Disagree (D) = 2 and Strongly Disagree (SD) = 1. For the purpose of analysis, a mean score of 3 or above indicates agreement whereas a mean score less than 3 shows disagreement. Results are summarized in Table 4.4

*Table 4.4: Measures to Improve e-learning among Kindergarten Pupils*

| S/N | Measure to improve e-learning | Mean | SD |
|---|---|---|---|
| 1. | Teachers need to be involved in its planning | 3.8 | 1.5 |
| 2. | Provision of the right teaching and learning materials to support it | 3.8 | 1.5 |
| 3. | Constant monitoring and supervision from parents and teachers | 3.9 | 1.5 |
| 4. | Teachers and pupils should be properly trained to use the system | 3.9 | 1.7 |
| 5. | Students should be encouraged to use the internet productively | 3.8 | 1.8 |
| 6. | Mean of Means | 3.8 | 1.6 |

Source: Field data (2022)

Results in Table 4.4 show that respondents agree (M=3.9, SD=1.5) that constant supervision and monitoring by parents and teachers is a way of improving e-learning among pupils. Similarly, respondents agreed (M=3.9, SD=1.7) that teachers and pupils should be given the right training to use the systems. Also, respondents agreed (M=3.8, SD=1.8) that teachers need to be involved in its planning. Asked if providing

the right teaching and learning materials to support it as a measure to improve e-learning, respondents agreed (M=3.8, SD=1.5). Finally, respondents indicated their agreement (M=3.8, SD=1.8) that students should be encouraged to use the internet productively.

The study has revealed that the measures that can be adopted to improve e-learning among kindergarten pupils are: teachers need to be involved in its planning, provision of the right teaching and learning materials to support it, constant monitoring and supervision from parents and teachers, teachers and pupils should be properly trained to use the system, students should be encouraged to use the internet productively.

Effective planning of any education system is fundamental in its implementation. By this, teachers must be involved in the effective planning of any e-learning system which will serve as a source of motivation. When teachers are involved in the planning, they always have the motivation to ensure the effectiveness of its implementation. As recommended by Hamzeh (2021), that teachers need to be involved in planning so that technology fits with instructional needs.

Also, another way of improving the quality of e-learning among pupils is provision of the right teaching and learning materials to support it. These materials are essential and without them, it would be difficult to implement the system. These materials include, computers, internet connection, radio, smartphones and smartboards. According to Heather (2018), materials that can be incorporated into teaching; thus, technology is a great way to actively engage students, especially as digital media surrounds young people in the 21st century. These include interactive whiteboards or mobile devices which can be used to display images and videos, which helps students visualize new academic concepts. E-learning can become more interactive when these

technologies are used as students can physically engage during lessons as well as instantly research their ideas, which develops autonomy. Mobile devices, such as iPads and/or tablets, can be used in the classroom for students to record results, take pictures or videos or simply as a behaviour management technique. These materials have to be available to make e-learning effective (Heather, 2018).

The computer and its associated devices and the internet offer numerous benefits to the pupil in terms of learning. However, pupils can use these materials to access negative contents. Hence, parents and teachers must offer constant monitoring and supervision to ensure effective implementation. As suggested by The Science Prog (2020), parents should monitor pupils to ensure they do not spend up a lot of time online.

# CHAPTER FIVE

# SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## 5.0 Introduction

This chapter provides a summary of the study, draws conclusions and make some recommendations concerning directions for future studies and policy.

## 5.1 Summary

The study sought to assess the impacts of e-learning on pupils at the kindergarten in Rev. Wilson B Basic School in Mfantseman Municipal. The descriptive research design was used. The census survey sampling method was used to select the 24 respondents who participated in the study. Questionnaire was the instrument used to gather data from the respondents.

## 5.2 Key Findings

The following were the key findings of the study

1. Major positive impacts of e-learning on kindergarten pupils' learning include e-learning improving the quality of pupils' learning, e-learning making pupils learning convenient and flexible, e-learning motivating pupils, and e-learning improving pupils' communication skills.
2. Other positive impacts of e-learning were: it develops the technological expertise of pupils, it improves hand-eye coordination skills, mathematical skills and social competence, and it encourages curiosity through productive engagement.
3. Major negative impacts of e-learning on kindergarten pupils' learning were: e-learning limits human interaction between pupils and the teacher, lack of

human contact affects quality of learning, and it puts financial burden on parents and guardians.

4. Other negative impacts of e-learning were lack of technical expertise on the parts of parents, teachers and pupils affects the quality of learning, difficulty in assessing pupils effectively, technical challenges such as unstable internet affects quality, causes sense of isolation among pupils.
5. The study has revealed that the measures that can be adopted to improve e-learning among kindergarten pupils are: teachers need to be involved in its planning, provision of the right teaching and learning materials to support it, constant monitoring and supervision from parents and teachers, teachers and pupils should be properly trained to use the system, students should be encouraged to use the internet productively

### 5.3 Conclusion

The following conclusions can be made based on the findings:

1. The quality of teaching and learning in kindergarten can be improved through the use of e-learning platforms. Such platforms will offer pupils the flexibility and convenience in learning, build up their communication skills and provide motivation for pupils.
2. Pupils' technological expertise can be built through the implementation of effective e-learning systems. In addition, curiosity in pupils, their hand-eye coordination skills, mathematical skills and social competence, and it encourages curiosity can be improved through e-learning.
3. The lack of human interaction between pupils and the teacher, lack of human contact affects quality of learning, and the financial burden on parents and

guardians that e-learning brings will also limit the ability to implement an effective e-learning system.

4. There will be ineffective e-learning system in the school because of the lack of technical expertise on the parts of parents, teachers and pupils, difficulty in assessing pupils effectively, technical challenges such as unstable internet.
5. Teachers being involved in the planning of e-learning, provision of the right teaching and learning materials to support it, constant monitoring and supervision from parents and teachers, teachers and pupils being trained to use the system, students being encouraged to use the internet productively are effective ways to improve the quality of e-learning.

## 5.5 Recommendations

The following recommendations are made based on the key findings and conclusions drawn:

1. Basic schools especially kindergartens should exploit the benefits of e-learning by ensuring that pupils are exposed to the system.
2. The Ghana Education Service together with the ministry of education must ensure that the right teaching and learning materials that can support the implementation of e-learning in schools are supplied to the various basic schools in Ghana.
3. Teachers, parents and pupils should be trained on how to use the various e-learning devices to support teaching and learning.

## 5.6 Suggestion for Further Study

It is further suggested that the study be replicated in all kindergartens in the Mfantseman Municipality.

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# APPENDIX A

## RESEARCH QUESTIONNAIRE

### QUESTIONNAIRE FOR TEACHERS

This questionnaire is being used to solicit information from you on your perception the impacts of e-learning on the learning of kindergarten pupils in Rev. Wilson B Basic School in Mfantseman Municipal. The information is needed for purely an academic work only. I would therefore be grateful if you would answer the questions as honestly as possible. I assure you of confidentiality as well.

**SECTION A: PERSONAL CHARACTERISTICS**

Please indicate your sex

**SEX OF RESPONDENTS**: Male ( ) Female ( )

Please indicate your age

**AGES OF RESPONDENTS**: 20 – 29 years ( ) 30 – 39 years ( ) 40 – 49 years ( )

50 – 59 years ( )

Please indicate your teaching experience

**TEACHING EXPERIENCE:** 1 – 5 years ( ) 6 – 10 years ( ) 11–15 years ( )

16 and above ( )

**SECTION B: POSITIVE IMPACTS OF E-LEARNING ON KINDERGARTEN PUPILS' LEARNING**

Kindly read each item and tick (√) the degree to which it applies.

Please be guided by the following: SA=Strongly Agree (5), A = Agree (4), U= Undecided (3) D = Disagree (2), and SD = Strongly Disagree (1)

| S/N | Positive Impact of e-learning on kindergarten pupils' learning | SA | A | U | D | SD |
|---|---|---|---|---|---|---|
| 1. | E-learning improves the quality of pupils' learning | | | | | |
| 2. | E-learning has made pupils' learning convenient and flexible | | | | | |
| 3. | E-learning motivates pupils | | | | | |
| 4. | It improves pupils' communication skills | | | | | |
| 5. | Pupils learn at their own pace | | | | | |
| 6. | Pupils can now retain more information | | | | | |
| 7. | It develops technological expertise of pupils | | | | | |
| 8. | It improves hand-eye coordination skills, mathematical skills and social competence | | | | | |
| 9. | It encourages curiosity through productive engagement | | | | | |

## SECTION C: NEGATIVE IMPACTS OF E-LEARNING

| S/N | Negative Impact of e-learning on kindergarten pupils' learning | SA | A | U | D | SD |
|---|---|---|---|---|---|---|
| 1. | E-learning limits human interaction between pupils and the teacher | | | | | |
| 2. | Lack of human contact affects quality of learning | | | | | |
| 3. | It puts financial burden on parents and guardians | | | | | |
| 4. | It negatively affects the culture of the society | | | | | |
| 5. | Lack of technical expertise on the parts of parents, teachers and pupils affects the quality of learning | | | | | |
| 6. | Difficulty in assessing pupils effectively | | | | | |
| 7. | Causes mental issues for the child | | | | | |
| 8. | Technical challenges such as unstable internet affects quality | | | | | |
| 9. | Causes sense of isolation among pupils | | | | | |

**SECTION D: HOW TO IMPROVE E-LEARNING AMONG KINDERGARTEN PUPILS**

| S/N | How to improve e-learning among kindergarten pupils | SA | A | U | D | SD |
|---|---|---|---|---|---|---|
| 1. | Teachers need to be involved in its planning | | | | | |
| 2. | Provision of the right teaching and learning materials to support it | | | | | |
| 3. | Constant monitoring and supervision from parents and teachers | | | | | |
| 4. | Teachers and pupils should be properly trained to use the system | | | | | |
| 5. | Students should be encouraged to use the internet productively | | | | | |