UNIVERSITY OF CAPE COAST

DIGITAL LITERACY SKILLS AS A DETERMINANT OF TEACHER'S PREPAREDNESS TO USE THE 2019 CURRICULUM: A CASE OF BASIC SCHOOL TEACHERS IN CAPE COAST METROPOLIS

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BY

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Dissertation submitted to the Department of Mathematics and Science of the College of Distance Education, University of Cape Coast, in partial fulfilment of the requirements for the award of Master of Education degree in Information Technology.

NOVEMBER 2023

DECLARATION

Candidate's Declaration

I hereby declare that this dissertation is the result of my original research and that no part of it has been presented for another degree at tats University or elsewhere.

Candidate’s Signature: …….. Date: ……

Name: Patrick Biney Amissah

Supervisor's Declaration

I hereby declare that the preparation and presentation of this dissertation were supervised by the guidelines on supervision of the dissertation laid down by the University of Cape Coast.

Supervisor’s Signature: …….. Date: ……

Name: Dr. Emmanuel Arthur-Nyarko

ABSTRACT

The study sought to ascertain the preparedness of basic school teachers concerning their digital literacy skills towards the implementation of the 2019 standards-based curriculum introduced at the pre-tertiary level of education in Ghana. For the study, conducted in the Cape Coast Metropolis of Ghana, some 335 public basic school teaching staff were sampled and administered with the study questionnaire which contained items to measure relevant constructs of the study such as Functional Skills, Digital Culture, Critical Thinking Skills, Collaboration and Creativity Skills, Online Safety Skills, and ultimately Teacher Preparedness – the dependent variable of the study. The study employed the correlational research design.

Key findings of the study revealed that there are significant positive correlations between the six variables measured, indicating that these variables may be useful in predicting each other. It was also evident that on average, the teachers in the sample feel moderately well-prepared in terms of digital literacy. However, there is also considerable variability in the data obtained, with some teachers reporting much higher or lower levels of preparedness concerning digital literacy skills and the implementation of the standards-based curriculum. It was concluded that it was necessary for policy makers to plan and train teachers in areas that would advance their digital literacy skills. With respect to recommendation, it is significant for educational stakeholders, especially the government, to provide opportunities that would assist the teachers in the development of their digital literacy skills as it would lead to their preparedness in implementing the curriculum at the basic school level.

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DEDICATION

To my entire family

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CHAPTER ONE

INTRODUCTION

This chapter includes the background to the study, statement of the problem, purpose of the study, research objectives, research questions, significance of the study, scope of the study, limitations, definitions of terms, abbreviations, and organization of the study.

Background to the Study

Ghana's education system has undergone several educational reforms (GhanaEducation.Org, 2017). Major ones among them include the Accelerated Development Plan of 1951 and the Education Act of 1961 which were the first reforms to be initiated and approved immediately Dr Kwame Nkrumah took office. This was followed by the Reforms of the National Liberation Council undertaking in 1966 (Aziabah, 2018). The reform encompassed a thorough review of the entire formal education system in Ghana and brought massive changes to the education system.

Digital literacy helps ascertain the degree of engagement with digital technology and concentrates on the endeavor to eliminate technological unfamiliarity with our society (Utoikamanu, 2019). Additionally, it assists upcoming generations in developing fresh relevant educational abilities that foster societal change through diverse digital activities (Tabieh et al., 2021a). Readiness has to do with teachers' awareness, knowledge of use, perceptions, and attitudes toward their capabilities and skills for technology integration as well as gaining experience in the use of educational technology (Villegas et al., 2023).

The New Structure and Content of Education reform was carried out in 1974. With this new reform came the introduction of the concept of the Junior Secondary School (JSS) and Senior Secondary School (SSS). The main focus of the reform was to enable school leavers develop employable skills irrespective of the time of exit from the education system (Adjei-Mensah et al., 2001). Thereafter, the 1987 Education Reforms were also implemented to broaden and enhance the standard of quality education, provide free and mandatory basic education, and significantly reduce the pre-tertiary education duration from the comparatively lengthy 17 years to a 12-year period. This reform also brought the nine years basic education and a three-year Senior Secondary School (SSS) concept (Adjei-Mensah et al., 2001b, pp. 129–172).

Contemporary technologies greatly influence the growth of the youth, shaping everything from their social interactions to their learning processes and even the formation of their individual identities (Kajamaa & Kumpulainen, 2019). In the view of Spante et al. (2018), at the systemic level, policy papers frequently highlight the necessity of investing in improving digital skills to foster economic growth and maintain competitiveness. Literature also exists to support the fact that digital technology has a potential to help improve upon knowledge acquisition, engagement, students' achievement, as well as self-improvement (Alsalem, 2016). In their study, Fraillon, Ainley, Schulz, Friedman and Duckworth. (2019) found that although teachers generally used ICT rather frequently, less than half of the teachers that participated in their study reported using it more frequently when they were teaching, with significant variance across participating countries.

The findings from the Teaching and Learning International Survey conducted in 2018, TALIS 2018, indicated that educators expressed a significant requirement for training in technology-related skills, with just 43% of teachers feeling adequately equipped to integrate technology into their teaching (Schleicher, 2020). Contemporary information and communications technology (ICT) systems are an integral aspect of both our everyday lives and professional environments (Bresnahan & Yin, 2016).

Today, a person's meaningful engagement in society significantly relies on their proficiency with respect to digital skills, which are interconnected with their level of education (Peromingo & Pieterson, 2018). Employees are consistently expected to utilize pertinent technology and also refresh their digital proficiencies (Peromingo & Pieterson 2018). Digital competence has the potential of introducing changes as well as challenges to teachers, thus, influencing the teachers necessary abilities, methods of teaching and learning, and ultimately the educational setting.

The new era propelled by digital transformation necessitates an early investment in young individuals, as preparedness is essential to keep pace with the ongoing changes in societies across the globe (Chowdhry et al., 2020). Digital literacy is highly important because digital technology is an essential part of our modern society, and has the potential to promote economic development, help face challenges, and provide new perspectives of a modern digital society.

The digital age sheds light on the educational phenomenon, as the current generations are advocates of major changes taking place in the world: globalisation, internationalisation, and digitisation. These phenomena

increasingly affect educational systems, which led to changing the traditional teacher-based and student-centred educational model into a widespread educational model for digital technologies (Tabieh et al., 2021b). This shift is related to future changes and the nature of work and requires new competencies. Digital literacy in education, training and learning provides various opportunities and challenges to recreate the curriculum architecture according to the real needs in the labour market (Catalano, 2019).

The digital age has brought vast changes to various scopes of human life and education has certainly not been left out. The use of various technologies in the field of education has over the years helped to improve the accessibility, quality, and efficiency of education worldwide (Singh, 2021). According to Howard and Mozejko (2015a), "while use of technology over the last 100 years has not resulted in a revolution, several key improvements and advancements in educational access and equity have resulted". Thus, there exists a compelling quest to constantly work at researching to improve the standards of education to meet the dynamic and growing demands of this age.

Significant levels of change evident in modern economies and their educational goals has largely been influenced by technological advancements and socio-economic factors (Hillyer, 2020b; Qureshi, 2022). Globally, the shift from valuing just products to valuing knowledge or information have brought about several innovations that allow for various ways to adopt teaching and learning to suit diverse contexts. With the global pandemic situation and its diverse effects, governments, the world over, are now more than ever forced to expedite efforts geared towards the use of digital

technologies at various sectors within their domain to ensure the successful attainment of various developmental goals (Howard & Mozejko, 2015b)

With the proliferation of Information and Communication Technologies (ICTs) in the early 2000, the New Patriotic Party (NPP) government reviewed the education system and introduced the 2007 Educational Reforms. The 2007 Reforms was rooted in the Ghana Information and Communication Technology for Accelerated Development (ICT4AD) policy introduced in 2003 which aimed at transforming Ghana into an information-rich knowledge-based society. Hence, one of the keys thrust of the reforms was the greater emphasis on Information and Communication Technology (ICT), Science and Technology and widening access to education through distance education. This reform was closely followed by another draft policy called the National ICT in Education Policy in November 2008. The ICT in Education policy deeply gave credence to the integration of ICT in Education. The overall goal of the policy was to "enable graduates from Ghanaian educational institutions – formal and non-formal to confidently and creatively use ICT tools and resources to develop requisite skills and knowledge needed to be active participants in the global knowledge economy by 2015" (Republic of Ghana, 2008, p.13) and a mission of "addressing current sector challenges and equipping Ghanaian learners, students, teachers and communities in meeting the national and global demands of the 21st Century" (Republic of Ghana, 2008, p.13). The policy which was promulgated and updated in 2009 has undergone several reviews and is still relevant today.

In effect, policies that seem to be spearheaded by technological factors are being introduced. Educational institutions are therefore obliged to also try

to keep up the pace to reflect and meet these national policies deployed by the government. In 2018, the move to adopt a standards-based curriculum at the pre-tertiary level is among other factors primarily driven by socio-economic factors as indicated in the National Pre-Tertiary Education Curriculum Framework (NaCCA, 2018a) by the National Council for Curriculum and Assessment (NaCCA). The aim of the Standard-based Curriculum is to produce "graduates who are good problem solvers, have the ability to think creatively and have both the confidence and competence to participate fully in the Ghanaian society as responsible local and global citizens" (NaCCA, 2018b). The competencies envisioned in the standard-based curriculum include critical thinking and problem solving, creativity and innovation, communication and collaboration, cultural identity and global citizenship, personal development and leadership, and digital literacy.

Acknowledging the influence of ICT on society has prompted educational stakeholders in Africa to reorganize programs and classroom resources in order to narrow the disparity between technologically advanced and less advanced societies. Due to the potential and opportunities it presents, ICT has evolved into a pivotal aspect of educational reform initiatives and is regarded as an essential element within the school curriculum (Tezci, 2011). Teachers are implementers of the curriculum and therefore need to learn and apply new technologies into their classroom instructions (Peters & Heraud, 2020). A report by the Global Education Monitoring Report Team (2021) stated that "Information and communication technologies (ICTs) must be harnessed to strengthen education systems, knowledge dissemination, information access, quality and effective learning, and more effective service

provision". It is therefore imperative that the teacher who is in the heart of curriculum implementation is equipped with the necessary competencies highlighted in the curriculum.

Statement of the Problem

Ensuring accessible high-quality education is both a necessity and a priority that must be aspired for at all levels of educational endeavour, thus, institutions in the world must strive to adopt positive educational solutions such as the use of ICTs to help realize this goal in this technological age as suggested by Eraku, Baruadi, Anantadjaya, Fadjarajani, Supriatna and Arifin (2021). With Ghanaian institutions increasingly expanding and progressing in the utilization of information and communication technologies, the integration of these technologies into the educational system is becoming more prominent, educational stakeholders are now more than ever obliged to focus on efforts to provide quality accessible education using ICTs.

However, it is revealed that some educators do not integrate relevant modern technologies in their lessons in an effective manner although some attempts have been made by authorities to coach them on such ICT integrations (Tezci, 2011). In addition, several challenges such as poor internet connection, inadequate standard ICT infrastructure in educational institutions and teachers with technology human resourc have all become a major setback for implementing digital technologies in teaching and learning at various levels in educational institutions in Ghana (Soma et al., 2021).

The utilization of ICT in the processes of teaching and learning is of utmost importance for life-long learning in the 21st century and beyond. Since time and other resources are costly and of utmost importance, there is the need

to adopt and use modern educational technologies to aid educational practices at every level of the educational ladder. This when successfully implemented will not only save time but has the potential to reduce the workload of educators as well as help provide prompt feedback on student performance for other stakeholders of education. Successful curriculum implementation firmly hinges on teacher preparedness and the ability to support the implementation process. It is against this backdrop that this study was conducted to ascertain the level of preparedness of the teacher with respect to digital literacy skills in the context of implementing the 2019 Ghanaian standards-based curriculum.

Purpose of the Study

This research is intended to ascertain the preparedness of basic school teachers with respect to their digital literacy skills towards the implementation of the standards-based curriculum being introduced at the pre-tertiary level of education in Ghana.

Research Objectives

Specifically, the study seeks to:

1. Assess the level of teacher preparedness to implement the standards-based curriculum being introduced at the pre-tertiary level of education in Ghana.
2. Analyse the extent to which teachers possess relevant digital literacy skills to implement the standards-based curriculum being introduced at the pre-tertiary level of education in Ghana.
3. Assess the effect of teachers' digital literacy skills on their preparedness to implement the standards-based curriculum being introduced at the pre-tertiary level of education in Ghana.

Research Questions

1. What is the level of teacher preparedness to implement the standards-based curriculum introduced at the pre-tertiary level of education in Ghana?
2. What is the extent to which teachers possess relevant digital literacy skills to implement the standards-based curriculum introduced at the pre-tertiary level of education in Ghana?
3. What is the effect that teachers' digital literacy skill have on their preparedness to implement the standard based curriculum being introduced at the pre-tertiary level of education in Ghana?

Research Hypothesis

1. H_{01}: There is no significant effect of critical thinking on teachers' preparedness to implement the standards-based curriculum.
2. H_{02}: There is no significant effect of online safety on teachers' preparedness to implement the standards-based curriculum.
3. H_{03}: There is no significant effect of collaboration and creativity on teachers' preparedness to implement the standards-based curriculum.
4. H_{04}: There is no significant effect of digital culture on teachers' preparedness to implement the standards-based curriculum.
5. H_{05}: There is no significant effect of functional skills on teachers' preparedness to implement the standards-based curriculum.

Significance of the Study

The use of digital technology is recognized in both the business and the academic environment. This study is relevant because its results would give an idea about the level of digital literacy skills of basic school teachers in Cape

Coast Metropolis as well as the extent to which teachers of basic institutions in the Cape Coast metropolis are making use of digital technologies and the various gaps that may exist. This will serve as a strong basis for policy and decision makers as well as academics to address the gaps that may exist in teaching and learning with technoloy

The findings of this study could provide valuable insights for diverse educational institutions seeking to enhance their comprehension of digital literacy challenges among teachers concerning curriculum implementation and the successful attainment of organizational objectives. The outcome of this study is to help augment the existing store of knowledge on the subject available and serve as a catalyst for further research on innovative ways of improving upon the use of digital technologies in educational institutions.

Delimitation

The study focused on the preparedness of the basic school teachers in Cape Coast Metropolis with respect to their level of digital literacy skills in the implementation of the 2019 Ghanaian standards-based curriculum for basic schools.

Limitation

It is advised that generalizations of the outcome of this study be done with caution given the fact that this study is only focused on the teachers within the Cape Coast Metropolis. It is perceived that when tested in different environment, due to certain dynamics, it may yield comparatively different results.

Definition of Terms

This study used some key variables and terms. Below are the definitions of some of the variables and key terms used in the context of this study.

Digital literacy: is the ability to use digital technologies to access, manage, evaluate, understand, create, and communicate information through digital platforms.

Information Technology: It is the use of computers create, process, store, retrieve, and exchange all kinds of data or information.

Information Communication Technology: Information and Communication Technology (ICT) is the integration of information processing, communication, and technology to handle, store, transmit, and secure information.

Critical Thinking Skills: It refers to the ability to analyze, evaluate, and interpret information and arguments in a systematic and logical manner. It involves thinking independently, questioning assumptions, and making informed judgments based on evidence and reasoning.

Online Safety Skills: This refers to the knowledge and practices that individuals need to protect themselves and their personal information when using the internet and participating in online activities.

Collaboration and Creativity Skills: They are the essential skills that enable individuals to work effectively with others, generate and implement new ideas, and find innovative solutions to identified problems.

Digital Culture: Digital culture refers to the collective behaviors, attitudes, values, and practices that emerge from the use and impact of digital

technologies in society. It encompasses the ways in which individuals, communities, and institutions engage with and shape the digital world.

Functional Skills: This refers to the specific abilities and competencies that individuals need to effectively use digital technologies and navigate the digital world. These skills are practical in nature and focus on the application and use of digital tools and platforms for everyday tasks.

Organization of the Study

The dissertation is structured into five chapters, each dedicated to a specific aspect of the study. Each chapter elaborates on the contents of its respective area as follows:

Chapter one serves as the Introduction. The chapter covers the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, the research hypothesis, significance, scope, limitation, and organization of the study.

Chapter two focuses on the review of related literature. This is where theories and concepts of digital technological skills are thoroughly examined. This encompasses the comparison and contrast of diverse viewpoints from experts in the field of digital technology.

Chapter three is the research methodology. This chapter commences with the research design and outlines the population and sampling technique employed. It outlines the data sources, methods of data collection, and analytical tools utilized to generate the necessary information. From this, conclusions and recommendations are drawn for the study.

Chapter four focuses on the results and discussions of the findings of this study. Finally, chapter five presents summary, conclusions, and recommendations of this study.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter focuses on the review of relevant literature on the adoption and utilisation of computer-based assessment. The chapter provides the theoretical and conceptual foundation for the study, followed by pertinent empirical studies conducted by various researchers and scholars in the field.

Theoretical Framework

Diffusion of Innovation Theory

Diffusion of Innovation (DOI) Theory, developed by (Rogers, 1962/2003) is one of the oldest social science theories. It originated in communication to explain how, over time, an idea or product gains momentum and diffuses (or spreads) through a specific population or social system. The result of this diffusion is that people, as part of a social system, adopt a new idea, behavior, or product. Adoption entails an individual engaging in actions different from their prior behaviors (i.e., purchase or use a new product, acquire, and perform a new behavior, etc.).

The essential aspect of adoption is the individual's perception of the idea, behavior, or product as novel or innovative. It is through this perception that the process of diffusion becomes feasible. Furthermore, this theory has found application in various academic disciplines, primarily economics, and extending to fields such as health, education, sociology, geography, communication, and business (Murray et al., 2009). It is imperative to note that Information systems provide a theoretical foundation for the implementation of ideas focused on the adoption of their projects (Majanja &

Kiplangat, 2005). Diffusion of innovation, namely uptake of subscribers, is considered a very significant determiner for success of any corporate entity (Frambach & Schillewaert, 2002). The model elucidates the factors influencing the adoption of innovation through 28 attitudes categorized into five distinct characteristics. Developing an attitude toward innovation is the reason for either approval or denial of innovation. Aforesaid variables are subjective, perceptual measurements which differ according to individuals.

To the theory's assertion, when variable factors have been applied, the diffusion of innovation will accelerate further. The classification comprises five types of adopters: 1) innovators, 2) early adopters, 3) early majority, 4) late majority, and 5) laggards. Innovators are individuals who possess a strong inclination to embrace novel concepts. They require a certain level of technical expertise. Early adopters' on the other hand are characterized by boundaries that are limited with a given social system. The attitudes of early adopters of innovations are quite significant. Rogers (2003) continues to assert that an early majority do not possess a leadership role, but that early majority likely to adopt an innovation before their peers adopt it.

Late majority patiently wait until after their peers adopt an innovation. Late majority are identified as being skeptical about adopting novel innovations. However, pressure from their peers may lead to them adopting an innovation. Laggards, comparatively, have more skepticism than those considered as late majority about the adaptation of innovation and the change agent. Rogers (2003) further suggests laggards also do not have a leadership role due to lack of resources and knowledge of the innovation in consideration. Laggards usually need reassurance that an innovation works

before they come on board to adopt. Rogers (2003) states that the characteristics of the adopter differ and that their usage of technology will also differ significantly. Rogers (2003) further suggests that the role of leaders be seen as very important in any innovation adoption process.

Rogers (2003) outlined the Five Stages of Innovation Decision Process, which encompass knowledge, persuasion, decision, implementation, and confirmation. The first stage, known as the knowledge stage, involves individuals learning about an innovation and gathering information related to it. Rogers (2003) subdivides the knowledge stage into three types: awareness knowledge, how-to knowledge, and principles knowledge. Awareness knowledge serves as a motivator for individuals to acquaint themselves with the innovation, potentially leading to its adoption. How-to knowledge is the type that entails understanding the factual aspects of how to correctly use the innovation (Rogers 2003).

Sahin (2007), suggests faculty choose not to use technology while teaching when they are unsure how to correctly use the technology even if their backgrounds are technical. Rogers (2003) describes principle knowledge as descriptive of how an innovation functions. Adoption can occur without principles knowledge, but issues of using the innovation incorrectly can cause non-adoption (Rogers 2003). Faculty that does not understand why or how to integrate technology into their curriculum will form barriers (Sahin, 2006).

According to Rogers (2003) in the persuasion stage individuals' attitudes toward the innovation can become negative or positive. Rogers (2003) said, "The formation of a favorable or unfavorable attitude toward an innovation does not always lead directly or indirectly to an adoption or

rejection". Roger suggests during this stage there is more involvement. Decision stage is the third stage when the individual has a choice of adopting or not adopting the innovation. Rogers further suggests that innovations are adopted faster when there is a trial basis of the innovation. Implementation stage is when the innovation is used. During this stage, individuals can still experience uncertainty. Uncertainty can be reduced using technical assistance. Rogers (2003) express that confirmation stage is the last stage when the individual has decided to adopt.

Since the 2019 curriculum is new, how prepared are the teachers in terms of their digital literacy. The theory is related to this study in terms of explaining, over time, how the new curriculum gains momentum and diffuses or spreads among the teachers who happen to be stakeholders. The consequence of this diffusion is that teachers, who are part of a social system, adopt new idea or behaviour.

Theory of reasoned action and theory of planned behaviour

The Theory of Planned Behaviour (TPB) is a development of the Theory of Reasoned Action (TRA), which was introduced by Fishbein and Ajzen in 1975, and later modified by Ajzen and Fishbein in 1980 (Ryan & Carr, 2010). Azjen's (1985) theory of planned behavior (TPB) suggests that an individual's intention to engage in a certain behavior can determine whether they will engage in that behavior. Ajzen (2011) also suggests that the theory of reasoned action (TRA) acts as a predictor of behavior. Positive or negative evaluations of behavior is explained as social pressure experienced of what people think you should do and how they comply (Westin, 2020). Individual

positive attitudes lead to behavioral actions. Educators' attitudes define the success of ICTs used in education (Ajzen, 1985).

Multiple factors play a role based upon influences of technology use, such as users' experience, and how prior behavior can modify the users' interactions. Ajzen (2005) suggests that the Theory of Planned Behavior is a continuation from the Theory of Reasoned Action. Morris, Marzano, Dandy, and O'Brien (2012) suggests that the Theory of Reasoned Action and Theory of Planned Behavior both works together.

Theory of Planned Behavior is based upon the intention of the individual to perform a behavior. Ajzen (2005) refers to intentions as an assumption that determines how behavior is influenced through motivation. Ajzen (1991) states that, "intentions are indications of how hard people are willing to try" (p. 181). Ajzen (1991) expressed individuals' behavioral achievement is based upon the individuals' intention and ability. Ajzen (1991) refers to intention as motivation and ability as behavioral control. Ajzen (1991) said, "Perceived behavioral control plays an important part in the Theory of Planned Behavior" (p. 183).

The Theory of Planned Behavior and Theory of Reasoned Action differ because of perceived behavioral control. Although the theories differ, Ajzen (1991) suggests that when both perceived behavioral control and behavioral intentions are used together, behavioral achievement can be predicted. Ajzen (1985) discusses the Theory of Planned Behavior (TPB) as a cognitive approach of behavior based upon attitudes and beliefs of the individual (Ajzen, 1985).

Ajzen (2005) suggests three beliefs of human behavior that include behavioral beliefs, normative beliefs, and control beliefs. Behavioral beliefs are expected beliefs of individuals and how they are motivated. Normative beliefs are factors that can delay performance of a behavior. Control beliefs are factors controlled by behavior. Morris et al. (2012) are of the view that individuals perform a behavior with no difficulties, or they experience difficulties. TPB should be used to predict behavior and identify behavioral influences that recognize change (Morris, Marzano, Dandy, & O'Brien, 2012).

A teacher's attitude toward behavior references how they feel favorable or unfavorable of the behavior (Tang & Hu, 2022). Subjective norms pertain to the conviction that a significant individual or a group of individuals will endorse and back a specific conduct. These norms are established through the perceived social influence from others, which compels an individual to act in a particular way, and their willingness to conform to those individuals' opinions (Ham et al., 2015). Perceived behavioral control is teachers ease or difficulty when performing a behavior (Morris, Marzano, Dandy, & O'Brien, 2012).

Filippou, Cheong, and Cheong (2016) express that people stop performing a behavior they do not enjoy performing after a period. Six stages of behavior change were discussed by Filippou et al. (2016) that include: first, there is no desire to change; second, change is considered; new behaviour is adopted in the third and fourth; fifth, new behavior is continued regardless of temptations to resume old behavior; and sixth, new behavior is fully adopted (Filippou, Cheong, & Cheong, 2016).

Morris and Venkatesh (2000) express that subjective norms are connected to the influence of peers and the influence of superiors when compared to technology adoption. Research studies reveal in an organizational environment, aging workers favor pleasing others, and they will agree with other opinions. Another study suggests that as age increases coworkers and superiors are friendlier. Age has a positive direct influence on subjective norms (Morris & Venkatesh, 2000).

Conceptual Review

Teachers Perception of the use of ICT in teaching and learning

Teachers hold diverse perspective on the use of ICT in education. Teachers' perceptions are critical to the success or failure of ICT integration in education (Merillo & Domingo, 2019). For this reason, it is vital that researchers gather information about the apprehensions teachers holds regarding the use of ICT in the classrooms. The decisions regarding whether and/or how to use ICT in education rests on the shoulders of the classroom or subject teachers. Jimoyiannis and Komis (2007) conducted a survey to investigate the beliefs and attitudes of present-day teachers towards ICT in education. The findings suggested that several factors, including age, gender, teaching experience, and availability of ICT resources, influence teachers' views towards ICT. The survey also revealed a correlation between teachers' beliefs and attitudes towards ICT and their frequency of ICT use in the classroom.

Although not all teachers have negative perceptions towards the use of ICT in education, Silviyanti and Yusuf (2015) state that the negative perceptions from teachers are one of the barriers which limits the use of ICT in

education. Furthermore, the effective use of ICT in education is determined by the teachers' personal beliefs and concerns that pursue their likelihood to use technology (Angers & Machtmes, 2005). It cannot be denied that the way teachers see their roles in education will influence the way they teach with technology.

Teachers' positive perception towards the integration of ICT in teaching-learning process serves as a catalyst in ICT usage in classrooms and subsequently stimulate learners' productive thinking such as pedagogical content knowledge (Akram & Yang, 2021). Moderately, lessons should be ICT driven but focused on clear teaching and learning objectives where ICT is used as a vehicle to support the achievement of those objectives (Gebremedhin & Fenta, 2015).

Kreijns et al. (2013) investigated teachers' intentions, attitudes, norms, and self-efficacy regarding using ICT in teaching and learning. Teachers tend to use ICT based on their previously used ICT, perceived knowledge, and skills to use some ICT devices (Kreijns et al., 2013). Adam (2008) shows that using ICT in the educating pupils with learning difficulties inspires pupils to better educational outcomes.

Benefits of ICT Use in Education

The use of technology in the learning environment has become an unstoppable force in recent years (Drexel University School of Education, 2020; Lumen Learning, 2021; Intel, 2019). ICT impacts on a large section of education, from record keeping and school websites to the creation of online learning communities (Tikam, 2013). Educational institutions can use specialized websites to make learning resources available online at any time.

Some educational institutions do not even require students to be physically present. Virtual classrooms have flourished in tandem with improved internet accessibility (Butler, 2022).

The significant barriers of time and distance are rendered almost obsolete in such virtual classrooms (Banks, 2020; Yeh & Tsai, 2022). However, the benefits of ICT use in the classroom depend on the success with which it has been integrated (Azmi, 2017). Dawes (2012) asserts that new technologies could support education across the entire curriculum, providing innovative opportunities for effective communication. ICT in education has undoubted potential, to be influential in changing teaching methodologies.

Condie and Munro (2007) concluded that the use of ICT has had positive effects in several subjects, as well as being constructive in assisting students that are marginalized because of personal or familial issues. Research has shown that many students benefit from the use of ICT (Frear & Hirschbuhl, 1999). Wishart and Blease (2009) claim that students get immediate feedback or rewards when using educational games in learning. Papert (2003) asserts that the computer is a tool, allowing for the construction of higher order thinking, facilitating users to take responsibility for their learning when making decisions, while Korte and Housing (2007) refer to its ability to motivate students learning.

Furthermore, Kozma and Anderson (2002) claim that ICT is transforming education by introducing new curricula based on real life problems, providing different tools to enhance learning, providing students and teachers with more opportunities for feedback and reflection. Social Constructivism places emphasis on this type of student-centered learning,

viewing the teacher as a guide or facilitator, motivating students to discover things for themselves (Vygotsky, 1978). Schoepp (2015) asserted that constructivist approaches dominate learning environment for technology to have a significant impact on learning. However, it must be remembered that the use of ICT in classrooms is a relatively new phenomenon when compared to traditional teaching methods in Ghana.

According to Hawkridge (1990), computers as pedagogical tools in Computer Assisted learning or Computer Assisted Instructions offer advantages over other methods of teaching and have revolutionized education in advanced countries. He further stated that computers are useful tools for pupil's drills and practice. The computer serves as a cognitive tool. Its software programs can amply, extend or enhance human cognition (Kozma, 2008). They are designed to aid users in task relevant, cognitive components of performance, leaving the performance open-ended hand controlled by the learner (Fouche, 2005).

The importance of ICT in teaching and learning has prompted Todd (1997) to declare that a real learning revolution has stand in which educators use information technologies to provide learning experiences that are qualitatively different from their predecessors. Despite the advantages that computers offer in education, Bigum (2007) recommends that ICT should not be seen as the only educational tool, but as one of several possible tools which could be used to teach content. Thapisa and Baribwa (2008) stated that evidence shows that to innovate and create stocks of information and knowledge by utilizing ICT, developing nations need telecommunication networks that can support electronic data exchange. Dankwa, (2007) points

out that many secondary schools in Ghana can boast of a computer laboratory through which students are gaining basic computer literacy.

A number of these schools have internet facilities, enabling students to deepen their connection to the outside world. Although this is encouraging information, extensive review of documents of NGOs that are spearheading ICT implementation in Ghanaian schools reveals that most secondary schools now are benefiting from ICT and are either located in urban areas or are classified as premier secondary schools (Dankwa, 2007). Despite these benefit ICT offers, many teachers are reluctant to facilitate substantial student use of computers for learning activities (Corte, 2010). Although ICT learning is good, it can also have its bad sides. Some students may use it for trivial purposes or use it to engage in immoral activities (Dellit, 2002). However, literature has attested to the power of ICT, if effectively taught in the classroom, can have effect on teaching and learning processes (Fonkua, 2006).

Challenges of ICT integration in education

The diffusion of ICT is still a growing phenomenon in the education sector. It is not surprising that, although it is a leading exercise, its integration within the educational sector is faced with numerous challenges. Gebremedhin and Fenta (2015) have admitted that ICT integration into education is fraught with numerous challenges that have bedeviled its effective integration into education. Gebremedhin and Fenta (2015) identified the challenges as a shortage of resources or technological tools, lack of technical support, poor ICT preparation for teachers and lack of encouragement for teachers which may have negative implications on the teachers' perceptions towards the use of ICT in teaching and learning.

Thus, they remarked that teachers perceived that teaching and learning would improve with ICT integration provided the challenges above are eliminated or minimized. Ghavifekr et al. (2016) found significant challenges associated with the use of ICT tools in teaching and learning. With this finding, the implementation of ICT in teaching and learning is faced with limited accessibility and poor network connection, limited technical support, limited time, and lack of teachers' competency. With the intent of using ICT, Khokhar and Javaid (2016) stated that teachers are bedeviled with challenges such as ICT devices being restricted to classroom teaching. Equally, some teachers maintain that to use ICT in education, more time is needed for instruction. What this means is that much instructional responsibility and skills is required to use the technological tools (Sim & Theng, 2007).

One of the challenges that teachers face when integrating ICT in education is that some schools have forbidden mobile phones, iPods claiming that they often interfere with their lessons (Mura & Diamantini, 2014; Kolog et al., 2018). In the same vein, these challenges can further be stretched to the teachers' practice of spending much of their teaching hours online, mainly to play games, engaging on social media and watch movies or listen to music instead of searching for educational materials. Based on the views of Kizlik (2008), it is crucial that teachers teach their pupils to appropriate ICT capability before applying it in other subjects.

Even though there is a strong relationship between ICT the subject and ICT in subjects, some teachers may find it a challenge to lay a foundation of ICT usage for their pupils if they (teachers) are not capacitated on the effective use of ICT. Despite the benefits of ICT usage in education, there are risks

associated with using ICT for teaching and learning. For instance, teachers may fall victims of cyberbullying or perhaps feel very unsafe when surfing the net in search of educational materials (Mura & Diamantini, 2014). Moreover, Internet failure can sometimes cause problematic situations, for example, interruptions in connections of the ICT devices may result in cancellation or postponement of a lesson.

Conceptual Framework

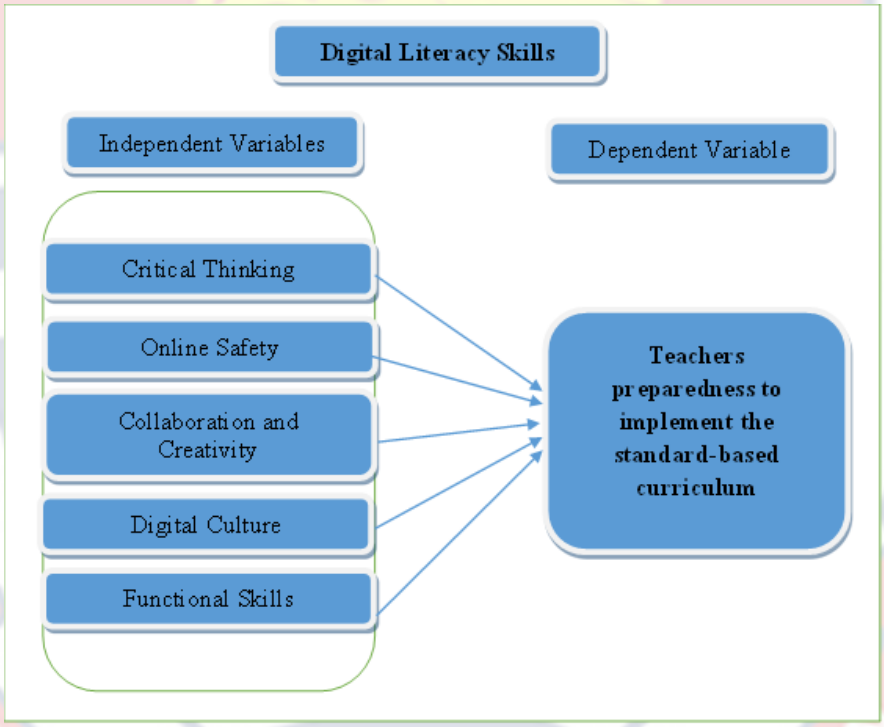

*Figure 1:*Pearson Correlation Results on Study Variables

Source: Author's construct (2023)

The study of digital literacy skills among teachers is an important area of research in today's world where technology is becoming increasingly integrated into our daily lives. The framework used in this study includes five independent variables: critical thinking skills, online safety skills, collaboration and creativity skills, digital culture, and functional skills. These

variables were essential in understanding a teacher's overall digital literacy and their ability to effectively implement the curriculum.

Critical thinking skills are vital in today's digital age as teachers are required to analyze and evaluate information from a wide variety of sources. The ability to critically analyze and evaluate information is an essential attribute in making informed decisions about what to include in the implementation of the curriculum and how to teach it effectively. This skill also enables teachers to help their students develop their own critical thinking skills, which are necessary for success in today's world (Eraku et al, 2021)

Online safety skills are crucial in protecting both teachers and students from potential online risks and threats. In the digital world, teachers must be able to identify and mitigate potential risks associated with using the internet, social media, and other online tools. This skill is essential in ensuring a safe and secure learning environment for both teachers and students (Atmazaki and Indriyani. 2019)

Collaboration and creativity skills are also critical in today's digital age. Teachers who are skilled in collaboration and creativity are better equipped to engage with their students and to work effectively with other teachers and staff members. These skills are necessary in developing new and innovative teaching methods and in fostering a dynamic and engaging learning environment (Cowan et al, 2021)

Digital culture encompasses a range of skills and knowledge related to the cultural norms and practices of the digital world. Teachers who are familiar with digital culture are better equipped to navigate the complex landscape of online communication and social media, and to understand the

impact of technology on society and culture as a whole (McGarr & McDonagh 2019)

Functional skills refer to a teacher's ability to use digital tools and platforms effectively and efficiently. In today's digital age, it is essential for teachers to be proficient in a wide variety of digital tools, including online learning platforms, multimedia tools, and social media platforms. This skill is vital in developing engaging and effective lesson plans and in ensuring that students are able to use digital tools and platforms effectively Atmazaki and Indriyani. 2019)

The dependent variable in this framework is the teacher's preparedness to implement the curriculum. By assessing a teacher's digital literacy skills in relation to these key variables, this framework can help identify areas where teachers may need additional support or training. This, in turn, can lead to better outcomes for both teachers and students, as teachers who are more digitally literate are better equipped to teach and engage with their students in a rapidly evolving digital landscape.

In conclusion, the framework used in this study provides a comprehensive and holistic approach to assessing a teacher's digital literacy skills. By focusing on key variables such as critical thinking skills, online safety skills, collaboration and creativity skills, digital culture, and functional skills, this framework can help identify areas where teachers may need additional support or training. Ultimately, this can lead to better outcomes for both teachers and students, as teachers who are more digitally literate are better equipped to teach and engage with their students in a rapidly evolving digital landscape.

In summary, some methodological and contextual gaps were identified after the review of the literature. Most of the reviews were done in developed countries hence the researcher identifies this as a gap as far as the Ghanaian context is concerned. Secondly, most of the reviewed studies did not take into consideration all the five independent variables under consideration.

Empirical Review

This section of the study focuses on review of empirical studies that underpinned the study, lessons and issues that need to be assessed from the empirical review as well as the conceptual framework that support the study.

Quaicoe and Pata (2015) explored the role of the teacher's digital literacy (TDL) among other schools' digital culture (SDC) components in determining Digital Divide (DD) among Ghana's basic schools. The questionnaire was adopted from the Institute for Capacity Building – UNESCO and EU rubrics for measuring ICT in education; and explored nine Digital Culture components including TDL. Data was analysed using K-means Clustering, Correlation analysis, Discriminant analysis, and Independent-samples T-test. The schools were clustered based on SDC components into two DD groups. The Digital Divide in the sample schools was significantly influenced by Teachers' digital literacy (f1) and ICT related policy documents.

Abbas, Hussain and Rasool (2019) explored the effect of digital literacy on academic performance of the students at higher education level. The study was mixed method and data were gathered with a questionnaire and semi structured interview. The statistical tests like mean, standard deviation and correlation were used. Results revealed that digital literacy had significant effects on communication skills, research skills and confidence of the students.

Tomczyk (2019) assessed the level of digital literacy among teachers. The research was conducted using a competency test and diagnostic survey. The survey was conducted among 421 teachers. The results showed different levels of digital literacy. The teachers of technical subjects (including ICT) obtained the best results, whereas natural science teachers scored the lowest. Age was not a determinant of ICT expertise.

Al-Awidi and Aldhafeeri (2017) examined how teachers in Kuwaiti perceive their readiness to implement digital curriculum in public schools and the factors that affect Kuwaiti teachers' readiness to implement digital curriculum from their perspectives. The study employed the mixed method research approach and a a sample of 532 teachers. It was revealed from the study that teachers are moderately ready for implementation of the digital curriculum in both components of readiness. Teachers identified some factors the hinder their readiness. These factors were related to time constraints, knowledge and skills, infrastructure, and technical supports.

Murithi and Yoo (2021) this study investigated the availability of ICT facilities; teacher capacity to integrate technology into their lessons; and teacher perceptions towards technology in schools. In particular, the study is premised on the constructivist learning theory and the Technology Acceptance Model. A total of 351 teachers completed an online questionnaire. Teachers perceived that ICT facilities were inadequate in schools, which presented a challenge in the integration of technology during the implementation of the new curriculum.

Most of the teachers answered that they received only basic computer literacy training. Although teachers perceived the use of computers as

necessary, they faced difficulties integrating technology in their lessons. The effect of age and gender on teacher capacity was also investigated in inferential statistics, specifically with Welch tests and Games Howell post hoc comparisons.

Ayesha, Sadaf, Tuba and Gezer (2020) explored factors that influence teachers' intentions to integrate digital literacy into their classrooms based on the Decomposed Theory of Planned Behavior (DTPB). Path analysis was used to analyze quantitative data collected through an online survey (n ¼ 144) and constant comparison approach was used to analyze open-ended survey responses. Findings revealed that the components of the DTPB–attitude, subjective norms and perceived behavioral control–explained significant variance in teachers' intentions to integrate digital literacy in their classrooms. Also, positive attitude, perceived usefulness, and self-efficacy are the strongest indicators of teachers' intentions to integrate digital literacy into their classrooms.

Serafín, Depešová and Bánesz (2018) identified the importance of environment and of the users (teachers) in the development of digital literacy, including age, gender and socioeconomic status, which can be considered as important predictors of digital competences. The results showed a positive correlation between the Internet usage and the levels of digital literacy. The assumption that variables such as the use of technology and the self-confidence of Internet users can provide the necessary skills to move around the virtual world and therefore the skills required to 'guide' their pupils in this world using networking, communication and online collaboration and critical

views of both positive and negative phenomena associated with the Internet, was confirmed.

Chapter Summary

This chapter provided the study's theoretical background as well as a literature review. Specific issues considered included theoretical framework, empirical review and the conceptual framework. The next chapter deals with the research methodology used for this research.

CHAPTER THREE

RESEARCH METHODS

Introduction

This chapter presents methodology to be adopted in this study which includes the research design, study area, population, sample, and sampling procedure. Research methodology is a systematic way of solving a problem. It is essentially, the procedures followed by researchers for describing, explaining, and predicting phenomena. It provides the work plan of a research. This research methodology is influenced by the purpose and objectives of this study.

Research Design

This study adopted the correlational research design. Correlational research design investigates the relationships between variables without the researcher controlling or manipulating any of them. It reflects the strengths or direction of the relationship between two or more variables. The variables create a unique data set that can work in several different ways with known and unknown relationships. The direction and strength of each relationship can be determined (Bhandari, 2021)

Research Approach

This study used the quantitative approach. By conducting, a quantitative study helps to report representative statistics for the study population. The quantitative correlation method was used for the research approach because Creswell (2014) states quantitative approach gives an opportunity to analyze results and explain the relation. Babbie (2021) asserts that quantitative research is used to measure and analyze variables and to

describe the relationships between them. Quantitative methods are characterized by the collection of information which can be analyzed numerically. According to Tashkkori and Teddlie (2012), this approach frequently involves gathering data in accordance with a hypothesis or theory and using either descriptive or inferential statistics. Because general assumptions about population features are drawn from tests of statistical hypotheses, quantitative techniques are frequently described as being deductive in nature.

Study Area

Cape Coast is situated along the southern coast of Ghana, overlooking the Gulf of Guinea. Administratively, the metropolitan city of Cape Coast is sub-divided into two as Cape Coast North and Cape Coast South (Cape Coast Metropolitan Assembly, 2021). The city experiences a tropical climate characterized by warm temperatures and high humidity throughout the year. With its rich historical background (Wikipedia, 2023), socio-cultural diversity, and unique environmental features, the city serves as an ideal area for the study "digital literacy skills as a determinant of teacher's preparedness to use the 2019 curriculum: a case of basic school teachers in Cape Coast metropolis".

Cape Coast also serves as a significant historic educational center in Ghana. Early formal schools such as Philip Quaque Boys School and Mfantsipim are in Cape Coast (Addo & Gyesi, 2014). The city also has schools such as Catholic Jubilee School, Jacob Wilson Say, Philip Quaque Girls, St. Augustines College, Adisadel College, Ghana National College, and Wesley Girls' High. At the tertiary level, the city prides itself with educational

institutions such as the University of Cape Coast, OLA College of Education, and Cape Coast Technical University. Today, it stands as a city committed to educational progress and development. The city has a rich historical background as a former European colonial hub and a center for the transatlantic slave trade (Wikipedia, 2021). It was the European colonial capital with many Europeans like the Portuguese, Danes and British (News Ghana, 2017).

Cape Coast has a diverse population, with various ethnic groups coexisting, including the Fante – the main ethnic group of the city, Twi, Ewe, and Ga. The city's economy is mainly driven by sectors such as education, tourism, fishing, and agriculture. As a center for educational institutions, Cape Coast attracts teachers from different backgrounds, creating a dynamic environment for any educational study of this nature.

Cape Coast, with its vibrant educational environment, history, diverse population, and unique geographical features, serves as an ideal study area to examine teachers' digital literacy skills in relation to the implementation of the 2019 standards-based curriculum. This study aims to contribute to the understanding of the digital competence among public basic school teachers and provide insights for educational policymakers, administrators, and teacher training programs to foster effective integration of digital technologies in the area of teaching and learning.

Population

McMillan and Schumacher (2010) define research population as a group of elements or cases, whether individuals, objects or events that conform to specific criteria in research. Blaikie (2009) defined research

population as an aggregate of all cases that conform to some designated set of criteria. The population of this study includes eighty (80) public basic schools and 10 Senior High Schools (SHS) in the Cape Coast district, which is made up of 2,611 teachers**.**

Sampling Procedure

In the view of Andrade (2020) regarding sample size, too large a sample is unnecessary and unethical, and too small a sample is unscientific and unethical. The sample size for this study was determined by using a standard formula for sample size determination.

Sample Size Calculation

The formula used to determine the sample size is shown in figure 2:

$$\text{Sample size} = \frac{\frac{z^2 \times p\,(1-p)}{e^2}}{1 + \left(\frac{z^2 \times p\,(1-p)}{e^2 N}\right)}$$

Figure 1: Formula used for sample size calculation of the study

Source: SurveyMonkey (2018)

Where:

S = sample size

Z = Z-Score

p = standard deviation

e = margin of error

N = population size

Calculation for the sample size of the study is as follows:

Given

Z = 1.96

p = 0.5

e = 0.05

N = 2611

$$s = \frac{\frac{1.96^2 \times 0.5(1-0.5)}{0.05^2}}{1 + \left(\frac{1.96^2 \times 0.5(1-0.5)}{0.05^2 \times 2611}\right)}$$

$$s = \frac{\frac{3.8416 \times 0.5(0.5)}{0.0025}}{1 + \left(\frac{3.8416 \times 0.5(0.5)}{0.0025 \times 2611}\right)}$$

$$s = \frac{\frac{3.8416 \times 0.25}{0.0025}}{1 + \left(\frac{3.8416 \times 0.25}{0.0025 \times 2611}\right)}$$

$$s = \frac{\frac{0.9604}{0.0025}}{1 + \left(\frac{0.9604}{6.5275}\right)}$$

$$s = \frac{384.16}{1 + 0.1471}$$

$$s = \frac{384.16}{1.1471}$$

$$s = 334.8966$$

Rounded up to the nearest whole number $s \cong 335$

The result from the sample size calculation using the given formula for the population of 2,611 is 335. This was the sample size which was used in this study.

The study adopted the simple random sampling technique. Simple random sampling, is a type of probability sampling technique that basically involves choosing participants at random from a given population with an equal selection chance for each individual in the given population, the

technique tends to yield representative, unbiased samples (Frost, 2021). The simple random sample means that every case of the population has an equal probability of inclusion for each subject, and it affords all the members under consideration an equal chance of being selected (Thomas, 2020; Simkus, 2022).

Given that the targeted sample size is 335 respondents of the 2,611-teacher population, the researcher assigned unique identifiers as numbers to the targeted teachers within the general teacher population. This was followed by calculation of an appropriate sampling interval, which in this case was obtained by dividing the general teacher population by the targeted sample size of 335. The result obtained for this calculation was approximately 7.76 (approximated to 2 decimal places) to be used as the settled-on interval figure.

2,611/335 = 7.794029851

Interval = 7.79 (2 d.p.)

The 'RANDBETWEEN' spreadsheet function was then used to ascertain the starting number for the selection. The 'RANDBTWEEN' function is a spreadsheet function that allows the generation of a uniformly random integer between two values, inclusive (Google LLC, 2023).

The function structure or syntax:

=RANDBETWEEN(a,b)

Where 'a' and 'b' are the function's parameters.

Parameter 'a' is the starting or low value of the random range.

Parameter 'b' is the end or high value of the random range.

Calculating for the starting value of this study:

=RANDBETWEEN(1,7.79)

The result obtained was 6, thus 6 was used as the starting position for the respondent sample selections.

The next step consisted of using the 'SEQUENCE' spreadsheet function to obtain the position numbers of the specific respondents. The SEQUENCE function is a spreadsheet function that can be used to return an array of sequential value or numbers, such as 1,2,3,4 (Google LLC, 2023).

The function structure or syntax:

=SEQUENCE(a,b,c,d)

Where 'a' , 'b', 'c', and 'd' are the function's parameters.

Parameter 'a' is the number of rows of values to be returned (Required).

Parameter 'b' is the number of columns to be returned where applicable (optional).

Parameter 'c' is the start value where applicable (optional).

Parameter 'd' is the step or interval value where applicable (optional).

Calculating for the position numbers for the sample of the study:

=iferror(transpose(wrapcols(SEQUENCE(335,1,6,7.79),13)),"")

The identified sample respondents were then contacted and given the opportunity to complete the questionnaire via a Google Form link upon their consent and at their convenience.

6	13	20	27	34	41	48	55	62	69	76	83	90
97	104	111	118	125	132	139	146	153	160	167	174	181
188	195	202	209	216	223	230	237	244	251	258	265	272
279	286	293	300	307	314	321	328	335	342	349	356	363
370	377	384	391	398	405	412	419	426	433	440	447	454
461	468	475	482	489	496	503	510	517	524	531	538	545
552	559	566	573	580	587	594	601	608	615	622	629	636
643	650	657	664	671	678	685	692	699	706	713	720	727
734	741	748	755	762	769	776	783	790	797	804	811	818
825	832	839	846	853	860	867	874	881	888	895	902	909
916	923	930	937	944	951	958	965	972	979	986	993	1000
1007	1014	1021	1028	1035	1042	1049	1056	1063	1070	1077	1084	1091
1098	1105	1112	1119	1126	1133	1140	1147	1154	1161	1168	1175	1182
1189	1196	1203	1210	1217	1224	1231	1238	1245	1252	1259	1266	1273
1280	1287	1294	1301	1308	1315	1322	1329	1336	1343	1350	1357	1364
1371	1378	1385	1392	1399	1406	1413	1420	1427	1434	1441	1448	1455
1462	1469	1476	1483	1490	1497	1504	1511	1518	1525	1532	1539	1546
1553	1560	1567	1574	1581	1588	1595	1602	1609	1616	1623	1630	1637
1644	1651	1658	1665	1672	1679	1686	1693	1700	1707	1714	1721	1728
1735	1742	1749	1756	1763	1770	1777	1784	1791	1798	1805	1812	1819
1826	1833	1840	1847	1854	1861	1868	1875	1882	1889	1896	1903	1910
1917	1924	1931	1938	1945	1952	1959	1966	1973	1980	1987	1994	2001
2008	2015	2022	2029	2036	2043	2050	2057	2064	2071	2078	2085	2092
2099	2106	2113	2120	2127	2134	2141	2148	2155	2162	2169	2176	2183
2190	2197	2204	2211	2218	2225	2232	2239	2246	2253	2260	2267	2274
2281	2288	2295	2302	2309	2316	2323	2330	2337	2344			

Figure 3: List of position numbers obtained for sample selection.
Source: researcher's own (2023)

The sequence of numbers obtained for the study sample selection by using the Google Sheets formula are shown in figure 3.

Data Collection Instrument

In this study, the main instrument for data collection was a self-developed structured questionnaire. Questionnaires help yield a high quality of usable data, achieve good response rates, and provide anonymity, which encourages a more honest manner in answering questions. The questionnaire was divided into seven sections. Section A elicited information on

respondents' background information. Section B of the questionnaire was on Critical Thinking Skills, Section C looked at respondents Functional Skills, Section D was for Online Safety Skills, Section E elicited information on respondents Collaboration and Creativity Skills. The next section, Section F, was on Digital Culture, and lastly, Section G was focused on Teacher Preparedness to use the curriculum. The questionnaire was adapted.

Additionally, all the items were close-ended items that permit the inclusion of more variables in a research study. This is because the format enables the respondent to answer more questions in a reasonable time. The items were developed using a 5-point Likert scale, from Strongly Disagree (1), to Strongly Agree (5). The questionnaire was developed based on the objectives of this study and through rigorous literature review. The research instruments were adapted.

Reliability of instrument

Reliability of an instrument refers to the degree to which an instrument yields consistent result. It is the consistency and stability of measurement obtained from a particular instrument, scale, or test. It is a crucial aspect of any measurement procedure as it determines the degree to which the instrument produces consistent and dependable results over time and across different situations Sekaran (2003).

In the context of psychological research and psychometrics, reliability is particularly important because it reflects the extent to which measurements are free from random error. If an instrument is unreliable, it means that the obtained scores may not accurately represent the true underlying construct

being measured, but rather reflect measurement error or inconsistencies in the instrument itself Bougie (2016).

Reliability can be thought of as the precision or consistency of measurement. A reliable instrument should yield similar results under similar conditions, assuming that the construct being measured remains stable. It is important to note that reliability is independent of validity, which refers to how accurately an instrument measure the intended construct Bougie (2016).

The instrument used was pilot-tested to ascertain its robustness in eliciting the appropriate data. Cronbach alpha reliability coefficients were used to report on reliability which provides an indication of the stability, consistency, and freedom of error. An alpha of 0.7 or above is reliable as suggested by many researchers (Davis 2000; Nunnally 1978). Sekaran and Bougie (2016) also affirms that normally, reliabilities of 0.7 range are considered acceptable.

Table 1: Cronbach Alpha Reliability Results of Study Instrument

Variable	Number of Items	Cronbach Alpha
CTS	12	0.838
FS	12	0.821
OSS	12	0.932
CCS	12	0.799
DC	12	0.831
TP	12	0.932

Source: Field Data (2023)

Validity of instrument

Validity is very important in the development and evaluation of research instruments (Ary et al, 2013). It is used to determine if an instrument

measures what it is intended to measure. Face validity, also called logical validity, is a simple form of validity where you apply a superficial and subjective assessment of whether your study or test measures what it is supposed to measure (Stephanie, 2015). Face validity, in the view of Bhandari (2022), is about whether a test appears to measure what it is intended to measure. It is a type of validity concerned with whether a measure seems relevant and appropriate for what it is intended to be assessing on the surface. To establish the face validity of the questionnaire, draft copies were given to some selected well-educated professional friends and two supervisors of the M.Ed. IT Department (University of Cape Coast) who read through and evaluated the relevance of each item in the instruments to the objectives and made the necessary corrections. Their recommendations to rephrase complex sentences and constructions into simpler sentences were incorporated to finally modify questions and format of the tool that had the ability to solicit expected data as a benchmark for validity.

Data Collection Procedure

According to Creswell (2002), respecting the site where the research takes place and gaining permission before entering a site is very paramount and ethical in research. A written introductory letter was therefore obtained from the Cape Coast Metropolitan Education Directorate, Cape Coast, and sent to the Heads of the selected Basic Schools where the research was carried out. Copies were also sent to the statistical department of Ghana Education Service (GES), Cape Coast, to solicit for other relevant information that would enhance the research.

The respondents were assured of confidentiality of their responses. They were also assured that all information obtained would be used for the intended academic purpose. According to Kelley et al (2003), these are the most important ethical issues to adhere to when conducting a survey. The questionnaires were then administered to the teachers. The respondents were allowed enough time and space to respond to the questions in the questionnaire comfortably and conveniently. The administration of the questionnaire of this study for data collection was done over a period of 12 days.

Data Processing and Analysis

The data processing and analysis process started with coding and cleaning of data. Descriptive statistics such as mean, percentages and standard deviation were run to describe the data while the hypotheses were tested using inferential statistics which included Pearson product moment correlation and multiple regression analyses. For instance, mean and standard deviation was used to analyze research questions one and two. Research question three which were turned into hypotheses were analyzed using regression analysis. The statistical tool that was employed for the purposes of analyses was SPSS version 26.

Ethical Consideration

Ethical issues are critical for any research study as they are required during the planning phase. The researcher sought access from the organization and employees during planning, data collection, analysis, and reporting phases of the study. According to Saunders, *et al.* (2003), ethics refers to the appropriateness of the researcher's behaviour in relation to the rights of those

who become the subjects. De-Vaus (2002) defined ethics as a preference that influence behaviour in human relations. Ethics is mostly associated with morality and deals with issues of right and wrong among groups, society, or communities.

It is therefore important that everyone who is dealing or involved in research should be aware of the ethical concerns (Cooper & Schindler, 2006). The following ethical issues, though not exhaustive, has been identified as important to be considered during any research.

Informed consent, avoidance of harm, violation of privacy, anonymity, and confidentiality, deceiving respondents or concealing of information and debriefing respondents (Babbie, *et al.*, 2002:12).

Chapter Summary

In summary, the research approach, the methods of data collection and the statistical techniques that were employed to answer the research hypothesis of the present study were presented. The next chapter focuses on the results obtained in the analysis with specific reference to the testing of the hypotheses of the present study.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter presents and discusses the results of the study in line with the objectives of the study. It starts with the presentation of respondents including their gender, age, highest level of academic education and teaching experience. It continues with the discussion of the extent to which teachers possess relevant digital skills for implementing the curriculum. Finally, the extent to which the teacher's digital literacy skills determine their preparedness to use the new curriculum is also evaluated.

Table 2: Demographic Frequency distribution of respondents (N – 335)

Variable	Category	Frequency	Percentage
Sex	Male	155	46.3
	Female	180	53.7
Age	18 – 25 years	57	17.0
	26 – 35 years	64	19.1
	36 – 45 years	88	26.3
	46 – 55 years	69	20.6
	Above 55 years	57	17.0
Education	JHS	3	0.9
	SHS/SHTS	2	0.6
	Tertiary	326	97.3
	Other	4	1.2
Teaching Experience	1-10 years	117	34.9
	11-20 years	100	29.9
	21-30 years	60	17.9
	31- 40 years	37	11.0
	41-50 years	20	6.0
	Above 50 years	1	0.3
Current Level Taught	KG	27	8.1
	Primary	73	21.8
	JHS	83	24.8
	SHS	152	45.4

Source: Field data (2023)

The results in Table 2 shows that out of the total of 335 respondents, 155 were male representing 46.3% and 180 were female representing 53.7 %. It can also be observed that 57 respondents representing 17.0 % were between the ages of 18 and 25 years, 64 respondents representing 19.1 % were between the age brackets of 26 and 35 years, 88 respondents representing 26.3 % were in the age bracket of 36 and 45 years, 69 respondents representing 20.6% were between the ages of 46 years and 55 years. 57 respondents constituting 17.0 % were above 55 years.

The results revealed further that 3 respondents representing 0.9% were JHS graduates, 2 respondents representing 0.6% were SHS graduates. 326 respondents representing 97.3% were university graduates. 4 respondents representing 1.2% were possessing other academic education. With respect to teaching experience, 117 respondents representing 34.9 % had between 1 to 10 years of teaching experience. Hundred respondents which constitute 29.9% had 11 to 20 years of teaching experience. Sixty respondents representing 17.9% had 21 to 30 years of teaching experience. Thirty respondents which constitute 11.0% had taught for 31 to 40 years. Twenty respondents which represent 6.0% had 41 to 50 years of teaching experience. One respondent representing 0.3% had taught above 50 years.

With respect to the current level of teaching, 27 respondents which represent 8.1% were teaching at the kindergarten, 73 respondents representing 21.8% were teaching at the primary level, 83 respondents which constitute 24.8% teach at the JHS level and finally 152 representing 45.4% teach at the Senior High School level.

Table 3: Descriptive Statistics

Variable	Mean	Std. Dev.
Teachers' preparedness	3.26	.73
Critical thinking	3.25	.67
Functional skill	3.21	.64
Online safety	3.16	.65
Collaboration and creativity	3.26	.69
Digital culture	3.26	.66

Source: Field data (2023), N=335

The mean score for teachers' preparedness is 3.26, with a standard deviation of 0.73. This suggests that, on average, the teachers in the sample feel moderately well-prepared in terms of digital literacy. However, there is also considerable variability in the scores, with some teachers reporting much higher or lower levels of preparedness with respect to digital literacy skills and the implementation of the curriculum.

It can also be observed from Table 3 that the mean score for critical thinking is 3.26, with a standard deviation of 0.67. This suggests that, on average, the sample demonstrates moderate levels of critical thinking skills in a digital context. However, there is still a fair amount of variability in the scores, indicating that some individuals in the sample may be more skilled in critical thinking than others.

The mean score for functional skill is 3.21, with a standard deviation of 0.64. This suggests that the sample has moderate levels of functional digital literacy, such as the ability to use digital devices and software effectively. However, again, there is variability in the scores, with some individuals in the sample reporting higher or lower levels of skill.

The mean score for online safety is 3.16, with a standard deviation of 0.64. This suggests that, on average, the sample is moderately aware of how to protect their personal information online and stay safe in digital environments. However, as with the other variables, there is still variability in the scores, indicating that some individuals may be more knowledgeable about online safety than others.

The mean score for collaborative and creativity is 3.26, with a standard deviation of 0.69. This suggests that, on average, the sample has moderate levels of collaborative and creative skills in digital environments. These skills are important for effective teamwork and problem-solving, so it is encouraging that the sample reports relatively high levels of proficiency. However, as with the other variables, there is still variability in the scores, indicating that some individuals may be more skilled in these areas than others.

The mean score for digital culture is 3.26, with a standard deviation of 0.66. This suggests that, on average, these sampled teachers have lower levels of proficiency in understanding, application, and use of digital culture in their professional area of practice. It is possible that they may be less familiar with the norms and conventions of digital communication, social media, and other aspects of digital culture.

Research Objective One: Assess the level of teacher preparedness to implement the standards-based curriculum introduced at the pre-tertiary level of education in Ghana.

The goal of this objective was to look at the responses from teachers with respect to their preparedness to use digital literacy skills in the implementation of the standards-based curriculum.

Table 4: Teachers' preparedness to use the standard-based curriculum

ITEM	SD	D	N	A	SA	Mean	Std. Dev.
I have an internet connected smart device such as a smartphone that I take with me everywhere I go.	46 (13.7%)	58(17.3%)	59(17.6%)	64(19.1%)	108(32.2%)	3.39	1.44
I am competent in using email.	62 (18.5%)	46(13.7%)	61(18.2%)	58(17.3%)	108(32.2%)	3.31	1.50
I incorporate digital resources and materials, such as online videos and e-books, and the use MS-Office applications into my lessons	45 (13.4%)	64(19.1%)	53(15.8%)	78(23.3%)	95(28.4%)	3.34	1.41
I can convert the printed content and activities in the curriculum to the digital form using available digital resources	57 (17%)	71(21.2%)	64(19.1%)	63(18.8%)	80(23.9%)	3.11	1.42
I can use social media (WhatsApp, Twitter, Instagram) to communicate with my students, parents, and other teachers.	56 (16.7%)	49(14.6%)	76(22.7%)	64(19.1%)	90 (26.9%)	3.25	1.42

ITEM	SD	D	N	A	SA	Mean	Std. Dev.
I can adapt my teaching methods to incorporate new technology and digital resources.	59 (17.6%)	45(13.4%)	73(21.8%)	78(23.3%)	80 (23.9%)	3.22	1.41
I am comfortable with trying new technologies and digital resources in my Classroom.	67 (20%)	43(12.8%)	64(19.1%)	70(20.9%)	91 (27.2%)	3.22	1.48
I can integrate the new curriculum with technology and digital resources in an effective manner.	54 (16.1%)	55(16.4%)	68(20.3%)	75(22.4%)	83 (24.8%)	3.23	1.41
I am willing to take professional development opportunities related to using new technologies and digital resources in the classroom	50 (14.9%)	45(13.4%)	60(17.9%)	83(24.8%)	97 (29%)	3.39	1.41
I can seek out and find new technology and digital resources to use in my classroom.	59 (17.6%)	58(17.3%)	61(18.2%)	78(23.3%)	79 (23.6%)	3.18	1.42
I can modify and adapt existing lesson plans to	54 (16.1%)	56(16.7%)	70(20.9%)	76(22.7%)	79 (23.6%)	3.21	1.39

ITEM	SD	D	N	A	SA	Mean	Std. Dev.
incorporate new technology and digital resources.							
I am open to incorporating new and innovative teaching approaches with technology and digital resources to facilitate teaching and learning.	57 (17%)	63(18.8%)	48(14.3%)	83(24.8%)	84 (25.1%)	3.22	1.44

Source: Field data (2023)

The data shown on Table 4 presents results of teachers' preparedness to use digital literacy skills in their implementation of the standards-based curriculum. The data indicates that 46 respondents representing 13.7% strongly disagreed with having an internet connected smart device which they could carry along with them anywhere. 58 respondents representing 17.8% of the respondents disagreed while some 59 respondents representing 17.6% remained neutral to the statement. 64 respondents representing 19.1% of respondents agreed to having such smart devices they could take with them everywhere. A large number of 108 respondents representing 32.2% of the respondents strongly agreed to this claim. The mean score for this was 3.39 with a standard deviation of 1.44.

With respect to how competent the respondent teachers are with their professional use of email, 62 respondents representing 18.5% of respondents strongly disagreed. 46 respondents representing 13.7% of respondents disagreed while 61 respondents representing 18.2% of respondents remained uncertain. 58 respondents representing 17.3% of respondents agreed while 108 respondents representing 32.2% of respondents strongly agreed. A mean score of 3.31 with a standard deviation of 1.50 was of obtained for this item.

Regarding the incorporation of digital resources and materials such as videos and e-books, as well as the use of MS-Office applications in lessons, 45 respondents representing 13.4% of respondents strongly disagreed while 64 respondents representing 19.1% of respondents disagreed. 53 respondents representing 15.8% of respondents remained neutral. 78 respondents representing 23.3% of respondents agreed whiles 95 respondents representing 28.4% of respondents strongly agreed to incorporation of digital resources and

materials in their teaching activities. A mean score of 3.34 with a standard deviation of 1.41 was of obtained for this item.

Considering the teachers' ability to convert printed contents and activities in the curriculum to digital form using available digital resources, 57 respondents representing 17% of respondents strongly disagreed. 71 respondents representing 21.2% of the respondents disagreed. Respondents who were uncertain with this totaled 64 representing 19.1% of the respondents. 63 respondents representing 18.8% agreed while 80 respondents representing 23.9% of the total respondents strongly agreed. A mean score of 3.11 with a standard deviation of 1.42 was of obtained for this item.

Table 4 also presents the responses of the respondents regarding their ability to use social media (such as WhatsApp, Twitter, Instagram) for communication with students, parents, and other teachers. Among the total respondents, 56 of the respondents representing 16.7% strongly disagreed, and 49 of the respondents representing 14.6% disagreed with this statement. Additionally, 76 of the respondents representing 22.7% were neutral, 64 of the respondents representing 19.1% agreed, and 90 of the respondents representing 26.9% strongly agreed with the statement. In total, 154 of the respondents representing 45.9% agreed or strongly agreed that they can use social media for communication, while 105 of the respondents representing 31.3% disagreed or strongly disagreed. A mean score of 3.25 with a standard deviation of 1.42 was of obtained for this item. This data suggests that a significant portion of the respondents are open to using social media as a communication tool in their educational context.

According to the data on Table 4 captured from respondents, 59 of the respondents representing 17.6% strongly disagreed, 45 of the respondents representing 13.4% disagreed, 73 of the respondents representing 21.8% were neutral, 78 of the respondents representing 23.3% agreed, and 80 of the respondents representing 23.9% strongly agreed that they can adapt their teaching methods to incorporate new technology and digital resources. Based on the data presented in the table, it can be inferred that a significant portion of the respondents (17.6%) strongly disagreed with the statement "I can adapt my teaching methods to incorporate new technology and digital resources." This suggests that there may be a portion of the respondents who may not feel confident or capable in adapting their teaching methods to integrate new technology and digital resources. On the other hand, a relatively larger portion of the respondents (23.3%) agreed and an even larger portion (23.9%) strongly agreed with the statement, indicating that a majority of the respondents feel confident in their ability to adapt their teaching methods to incorporate new technology and digital resources. This suggests a positive attitude towards incorporating technology into teaching practices. It's also worth noting that a significant portion of the respondents (21.8%) were neutral, indicating that they may have been undecided or had mixed feelings about their ability to adapt their teaching methods to incorporate new technology and digital resources. A mean score of 3.22 with a standard deviation of 1.41 was of obtained for this item. Overall, the response data to this question suggests that while there may be some respondents who lack confidence in adapting their teaching methods to incorporate new technology, most of the respondents are

positive about their ability to do so, which could indicate a willingness to embrace and utilize technology in their teaching practices.

The data shown in Table 4, presents a total of 67 respondents, accounting for 20% of the total, strongly disagreed with the statement "I am comfortable with trying new technologies and digital resources in my classroom." Additionally, 43 respondents representing 12.8% disagreed, 64 respondents representing 19.1% were neutral, 70 respondents representing 20.9% agreed, and 91 respondents representing 27.2% strongly agreed with the statement. A mean score of 3.22 with a standard deviation of 1.48 was of obtained for this item. The data indicates that a significant portion of the respondents (20% strongly disagreed and 12.8% disagreed) may not feel comfortable with trying new technologies and digital resources in their classroom. However, a larger portion of the respondents (20.9% agreed and 27.2% strongly agreed) expressed comfort in trying new technologies and digital resources, indicating a positive attitude towards incorporating new technologies in their classroom practices. It's worth noting that a considerable proportion of the respondents (19.1%) were neutral, suggesting mixed feelings or uncertainty about their comfort level with trying new technologies and digital resources in their classroom.

According to the data provided in the table, 54 (16.1%) of the respondents strongly disagreed, 55 (16.4%) disagreed, 68 (20.3%) had a neutral stance, 75 (22.4%) agreed, and 83 (24.8%) strongly agreed with the statement "I can integrate the new curriculum with technology and digital resources in an effective manner." A mean score of 3.23 with a standard deviation of 1.41 was of obtained for this item. The data reveals that a

significant proportion of the respondents expressed positive attitudes towards integrating the new curriculum with technology and digital resources. Specifically, 22.4% of the respondents strongly agreed, and 24.8% agreed with the statement, indicating a favorable disposition towards incorporating technology into the curriculum. On the other hand, a smaller proportion of the respondents (16.1% strongly disagreed, 16.4% disagreed, and 20.3% had a neutral stance) expressed less positive or uncertain views about their ability to integrate the new curriculum with technology effectively. These findings highlight the need for further support and professional development opportunities to enhance teachers' confidence and competence in leveraging technology in curriculum delivery.

It can be observed from Table 4 that a significant proportion of the respondents express a willingness to take professional development opportunities related to using new technologies and digital resources in the classroom. Specifically, 29% of the respondents strongly agreed, and 24.8% agreed with the statement, indicating a high level of openness to professional development in this area. Additionally, 17.9% of the respondents had a neutral stance, while smaller proportions of the respondents (14.9% strongly disagreed and 13.4% disagreed) expressed less willingness to take professional development opportunities. A mean score of 3.39 with a standard deviation of 1.41 was of obtained for this item. These findings suggest that a substantial number of teachers are receptive to enhancing their skills and knowledge in utilizing new technologies and digital resources in the classroom through professional development initiatives.

Data from Table 4 also suggests that a significant proportion of the respondents feel confident in their ability to seek out and find new technology and digital resources to use in their classroom. Specifically, 23.6% of the respondents strongly agreed, and 23.3% agreed with the statement, indicating a high level of self-efficacy in this regard. Additionally, 18.2% of the respondents had a neutral stance, while smaller proportions of the respondents (17.6% strongly disagreed and 17.3% disagreed) expressed less confidence in their ability to find new technology and digital resources. A mean score of 3.18 with a standard deviation of 1.42 was of obtained for this item. These findings suggest that a considerable number of teachers perceive themselves as capable of locating and incorporating new technologies and digital resources into their classroom practices, indicating a positive outlook towards integrating technology into their teaching approach.

The data on Table 4 also shows that a sizable percentage of the respondents feel capable of modifying and adapting existing lesson plans to incorporate new technology and digital resources in their classrooms. Specifically, 54 of the respondents, accounting for 16.1% of the total, strongly disagreed with the statement, while 56 (16.7%) disagreed. On the other hand, 70 (20.9%) respondents had a neutral stance, neither agreeing nor disagreeing. In contrast, 76 (22.7%) respondents agreed with the statement, and the highest percentage of 79 (23.6%) strongly agreed. A mean score of 3.21 with a standard deviation of 1.39 was of obtained for this item. These findings suggest that a considerable proportion of the respondents feel confident in their ability to modify and adapt lesson plans to integrate new technology and digital resources into their classroom practices.

Table 4 also shows that a significant percentage of the respondents are open to incorporating new and innovative teaching approaches with technology and digital resources to facilitate teaching and learning. Among the respondents, 57 (17%) strongly disagreed with the statement, while 63 (18.8%) disagreed. A smaller percentage of 48 (14.3%) respondents had a neutral stance, neither agreeing nor disagreeing. In contrast, a higher number of 83 (24.8%) respondents agreed with the statement, and the highest percentage of 84 (25.1%) strongly agreed. A mean score of 3.22 with a standard deviation of 1.44 was of obtained for this item. These findings suggest that a significant proportion of the respondents are receptive to adopting new and innovative teaching approaches that incorporate technology and digital resources to enhance their teaching and facilitate learning in the classroom.

Table 5: Teachers' critical thinking skills with respect to the new curriculum

ITEM	SD	D	N	A	SA	Mean	Std. Dev
I encourage students to ask questions and find solutions to challenges.	39(11.6%)	39(11.6%)	60(17.9%)	85(25.4%)	112(33.4%)	3.57	1.36
I guide students to give their opinions and comment on the opinion of others responsibly and constructively.	59(17.6%)	39(11.6%)	53(15.8%)	83(24.8%)	101(30.1%)	3.38	1.46
I plan activities that give students opportunities to generate flexible kind of ideas.	58(17.3%)	40(11.9%)	59(17.6%)	97 (29%)	81 (24.2%)	3.31	1.41
I plan activities that guide students to provide statements of logical and justifiable solutions.	69(20.6%)	59(17.6%)	58(17.3%)	92(27.5%)	57 (17%)	3.03	1.40
I plan activities that give students opportunities to identify problems and new problem-solving ideas	52(15.5%)	45(13.4%)	63(18.8%)	84(25.1%)	91 (27.2%)	3.35	1.41
I plan activities that give students the	57 (17%)	50(14.9%)	60(17.9%)	84(25.1%)	84 (25.1%)	3.26	1.42

ITEM	SD	D	N	A	SA	Mean	Std. Dev
opportunity to develop, add or expound ideas with a logical explanation.							
I help students analyze and evaluate digital media, such as videos, audio, and images.	69(20.6%)	49(14.6%)	67 (20%)	88(26.3%)	62 (18.5%)	3.07	1.40
I help students distinguish between fact and opinion when evaluating digital information.	53(15.8%)	60(17.9%)	68(20.3%)	93(27.8%)	61 (18.2%)	3.15	1.34
I help students develop the ability to think critically about the ethical and societal implications of technology	46(13.7%)	49(14.6%)	70(20.9%)	84(25.1%)	86 (25.7%)	3.34	1.36
I help students evaluate the potential biases and perspectives in digital information	55(16.4%)	62(18.5%)	63(18.8%)	80(23.9%)	75 (22.4%)	3.17	1.40
I encourage students to question and verify the information they find online.	58(17.3%)	59(17.6%)	71(21.2%)	62(18.5%)	85 (25.4%)	3.17	1.43
I help students develop the ability to think critically about the impact of digital	58(17.3%)	52(15.5%)	63(18.8%)	83(24.8%)	79 (23.6%)	3.22	1.41

ITEM	SD	D	N	A	SA	Mean	Std. Dev
technology on their lives and society.							

Source: Field data (2023)

Table 5 presents data gathered with respect to Teachers' preparedness to use the critical thinking skills in the new curriculum.

It can be inferred that a majority of the respondents encourage students to ask questions and find solutions to challenges. Among the respondents, 39 (11.6%) strongly disagreed with the statement, while another 39 (11.6%) disagreed. A relatively smaller percentage of 60 (17.9%) respondents had a neutral stance, neither agreeing nor disagreeing. In contrast, a higher number of 85 (25.4%) respondents agreed with the statement, and the highest percentage of 112 (33.4%) strongly agreed. The mean score obtained for this was 3.57 with a standard deviation of 1.36. These findings suggest that a significant proportion of the respondents actively encourage students to ask questions and seek solutions to challenges, indicating a positive attitude towards promoting critical thinking, problem-solving, and inquiry-based learning among students.

The data presented shows that a majority of the respondents guide students to give their opinions and comment on the opinions of others responsibly and constructively. Among the respondents, 59 (17.6%) strongly disagreed with the statement, while 39 (11.6%) disagreed. A relatively smaller percentage of 53 (15.8%) respondents had a neutral stance, neither agreeing nor disagreeing. In contrast, a higher number of 83 (24.8%) respondents agreed with the statement, and the highest percentage of 101 (30.1%) strongly agreed. A mean score of 3.38 with a standard deviation of 1.46 was of obtained for this item. These findings suggest that a significant proportion of the respondents actively guide students to express their opinions and provide

constructive comments on the opinions of others, indicating a positive attitude towards fostering responsible and constructive discourse among students.

According to the data provided, it can be observed that a considerable proportion of the respondents reported planning activities that provide students with opportunities to generate flexible ideas. Among the respondents, 58 (17.3%) strongly disagreed with the statement, while 40 (11.9%) disagreed. A similar percentage of 59 (17.6%) respondents had a neutral stance, neither agreeing nor disagreeing. On the other hand, a higher number of 97 (29%) respondents agreed with the statement, and 81 (24.2%) respondents strongly agreed. A mean score of 3.31 with a standard deviation of 1.41 was of obtained for this item. These findings indicate that a significant proportion of the respondents actively incorporate activities in their planning that promote the generation of flexible ideas among students, indicating a positive approach towards fostering creativity and critical thinking skills in the classroom.

The data on Table 5 reveals that a significant proportion of the respondents reported planning activities that guide students to provide statements of logical and justifiable solutions. Among the respondents, 69 (20.6%) strongly disagreed with the statement, while 59 (17.6%) disagreed. 58 (17.3%) respondents had a neutral stance, neither agreeing nor disagreeing. On the other hand, a higher number of 92 (27.5%) respondents agreed with the statement, and 57 (17%) respondents strongly agreed. A mean score of 3.03 with a standard deviation of 1.4 was of obtained for this item. These findings suggest that a substantial proportion of the respondents actively plan activities that encourage students to think critically and provide logical and justifiable

solutions, indicating a positive approach towards developing problem-solving skills and promoting higher-order thinking among students in the classroom.

The data indicates that a significant percentage of respondents reported planning activities that give students opportunities to identify problems and generate new problem-solving ideas. Among the respondents, 52 (15.5%) strongly disagreed with the statement, while 45 (13.4%) disagreed. 63 representing 18.8% of the respondents had a neutral stance, neither agreeing nor disagreeing. On the other hand, a higher respondent number of 84 (25.1%) agreed with the statement, and 91 (27.2%) respondents strongly agreed. A mean score of 3.35 with a standard deviation of 1.41 was of obtained for this item. These findings suggest that a substantial proportion of the respondents actively plan activities that foster problem identification and idea generation among students, indicating a proactive approach towards promoting critical thinking, creativity, and innovation in the classroom.

The data shown on Table 5 reveals that a significant percentage of respondents reported planning activities that provide students with the opportunity to develop, add, or expound ideas with a logical explanation. Among the respondents, 57 (17%) strongly disagreed with the statement, while 50 (14.9%) disagreed. 60 representing 17.9% of the respondents had a neutral stance, neither agreeing nor disagreeing. On the other hand, a higher number of 84 (25.1%) respondents agreed with the statement, and 84 (25.1%) respondents strongly agreed. A mean score of 3.26 with a standard deviation of 1.42 was of obtained for this item. These findings suggest that a substantial proportion of the respondents actively plan activities that encourage students to engage in critical thinking, reasoning, and justifying their ideas with logical

explanations. This indicates an emphasis on promoting higher-order thinking skills and reasoning abilities among students in the classroom.

The data shown on Table 5 also indicates that a significant proportion of respondents reported assisting students in analyzing and evaluating digital media, such as videos, audio, and images. Among the respondents, 69 (20.6%) strongly disagreed with the statement, while 49 (14.6%) disagreed. However, 67 (20%) respondents had a neutral stance, neither agreeing nor disagreeing. On the other hand, a higher number of 88 (26.3%) respondents agreed with the statement, and 62 (18.5%) respondents strongly agreed. A mean score of 3.07 with a standard deviation of 1.4 was of obtained for this item. These findings suggest that a substantial number of respondents actively engage students in developing critical media literacy skills by analyzing and evaluating digital media in the classroom. This indicates a focus on promoting media literacy and digital literacy skills among students, helping them become discerning consumers of digital content and media.

Table 5 shows that a considerable proportion of respondents reported assisting students in distinguishing between fact and opinion when evaluating digital information. Among the respondents, 53 (15.8%) strongly disagreed with the statement, while 60 (17.9%) disagreed. Additionally, 68 (20.3%) respondents had a neutral stance, neither agreeing nor disagreeing. On the other hand, a higher number of 93 (27.8%) respondents agreed with the statement, and 61 (18.2%) respondents strongly agreed. A mean score of 3.15 with a standard deviation of 1.34 was of obtained for this item. These findings suggest that a significant number of respondents actively engage students in developing critical thinking skills by helping them differentiate between fact

and opinion in digital information. This indicates a focus on promoting information literacy skills and critical evaluation of digital content among students, helping them become discerning consumers of online information.

According to the data on Table 5, a considerable proportion of respondents reported actively assisting students in developing the ability to think critically about the ethical and societal implications of technology. Among the respondents, 46 (13.7%) strongly disagreed with the statement, while 49 (14.6%) disagreed. Additionally, 70 (20.9%) respondents had a neutral stance, neither agreeing nor disagreeing. On the other hand, a higher number of 84 (25.1%) respondents agreed with the statement, and 86 (25.7%) respondents strongly agreed. A mean score of 3.34 with a standard deviation of 1.36 was of obtained for this item. These results suggest that a significant number of respondents prioritize helping students develop critical thinking skills related to ethical and societal considerations of technology. This reflects a focus on promoting digital citizenship and ethical awareness among students, preparing them to navigate the complex implications of technology in today's society.

Table 5 shows that a considerable proportion of respondents reported actively assisting students in evaluating potential biases and perspectives in digital information. Among the respondents, 55 (16.4%) strongly disagreed with the statement, while 62 (18.5%) disagreed. Additionally, 63 (18.8%) respondents had a neutral stance, neither agreeing nor disagreeing. On the other hand, a higher number of 80 (23.9%) respondents agreed with the statement, and 75 (22.4%) respondents strongly agreed. A mean score of 3.17 with a standard deviation of 1.4 was of obtained for this item. These findings

suggest that a significant number of respondents prioritize helping students develop critical evaluation skills to identify potential biases and perspectives in digital information. This reflects a focus on promoting information literacy and critical thinking skills among students, equipping them with the ability to critically analyze digital content and navigate potential biases and perspectives effectively.

Among the respondents, 58 (17.3%) strongly disagreed with the statement of actively encouraging students to question and verify information they find online, while 59 (17.6%) disagreed. Furthermore, 71 (21.2%) respondents reported a neutral stance, neither agreeing nor disagreeing. In contrast, 62 (18.5%) respondents agreed, and 85 (25.4%) strongly agreed. A mean score of 3.17 with a standard deviation of 1.43 was of obtained for this item. These findings suggest that a significant number of respondents emphasize the importance of information literacy and critical thinking skills by encouraging students to question and verify online information. This reflects a proactive approach in promoting digital literacy, helping students become discerning consumers of online information and develop critical evaluation skills to assess the reliability and credibility of online content.

The data shown on Table 4 also indicates that a significant number of respondents are actively involved in helping students develop critical thinking skills about the impact of digital technology on their lives and society. Among the respondents, 58 (17.3%) strongly disagreed with the statement, while 52 (15.5%) disagreed. Furthermore, 63 (18.8%) respondents reported a neutral stance, neither agreeing nor disagreeing. In contrast, 83 (24.8%) respondents agreed, and 79 (23.6%) strongly agreed. A mean score of 3.22 with a standard

deviation of 1.41 was of obtained for this item. These findings suggest that a considerable portion of respondents recognize the importance of guiding students to critically analyze the implications of digital technology on various aspects of their lives and society. This reflects a proactive approach in promoting digital literacy and responsible technology use, helping students develop a deeper understanding of the impact of digital technology on themselves and the world around them, and fostering critical thinking skills to navigate the digital landscape effectively.

Research objective two: The extent to which teachers possess relevant digital skills for implementing the curriculum.

Table 6: Teachers' Functional Skills for the New Curriculum.

ITEM	SD	D	N	A	SA	Mean	Std. Dev
I understand concepts such as licensed software, Pirated software, Open software, Malware, crack etc.	63 (18.8%)	74 (22.1%)	76 (22.7%)	55 (16.4%)	67 (20%)	2.97	1.39
I am familiar with the concept of hardware and software.	42 (12.5%)	56 (16.7%)	64 (19.1%)	73 (21.8%)	100 (29.9%)	3.40	1.39
I can install the operating system on my computer.	55 (16.4%)	52 (15.5%)	67 (20%)	80 (23.9%)	81 (24.2%)	3.24	1.40
I can install software or programs on my computer.	61 (18.2%)	61 (18.2%)	69 (20.6%)	63 (18.8%)	81 (24.2%)	3.13	1.43
I know what the internet, World Wide Web (WWW) is and its use.	47 (14%)	55 (16.4%)	64 (19.1%)	68 (20.3%)	101 (30.1%)	3.36	1.42
I incorporate digital tools such as a computer or smart devices such as a tablet or smartphone in my lesson preparation.	59 (17.6%)	49 (14.6%)	62 (18.5%)	73 (21.8%)	92 (27.5%)	3.27	1.45
I can troubleshoot basic technical issues that may arise while using new technologies and digital resources in the classroom.	53 (15.8%)	52 (15.5%)	82 (24.5%)	69 (20.6%)	79 (23.6%)	3.21	1.38
I can collaborate with other teachers to integrate new	59 (17.6%)	59 (17.6%)	66 (19.7%)	70 (20.9%)	81 (24.2%)	3.16	1.43

ITEM	SD	D	N	A	SA	Mean	Std. Dev
technologies and digital resources into the curriculum to facilitate teaching and learning.							
I can use technology and digital resources to enhance student engagement and learning.	51 (15.2%)	43 (12.8%)	69 (20.6%)	85 (25.4%)	87 (26%)	3.34	1.39
I am very comfortable with using various software and apps for teaching.	51 (15.2%)	57 (17%)	63 (18.8%)	86 (25.7%)	78 (23.3%)	3.25	1.38
I stay current and informed about new technologies and tools that can be used for teaching and learning.	51 (15.2%)	60 (17.9%)	60 (17.9%)	80 (23.9%)	84 (25.1%)	3.26	1.40
I have used online collaboration tools like Google Classroom, Microsoft teams, etc. for teaching and learning before.	63 (18.8%)	65 (19.4%)	73 (21.8%)	76 (22.7%)	58 (17.3%)	3.00	1.37

Source: Field data (2023)

Data on Teachers' functional skills for the new curriculum is presented on Table 6.

The data shown on Table 6 shows a significant proportion of respondents reported understanding concepts such as licensed software, pirated software, open software, malware, and crack. Among the respondents, 63 (18.8%) strongly disagreed with the statement, while 74 (22.1%) disagreed. Additionally, 76 (22.7%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 55 (16.4%) respondents agreed, and 67 (20%) strongly agreed. The mean score obtained for this was 2.97 with a standard deviation of 1.39. These findings suggest that a substantial number of individuals have an understanding of these concepts related to software and malware.

A significant proportion of respondents reported being familiar with the concept of hardware and software. Among the respondents, 42 (12.5%) strongly disagreed with the statement, while 56 (16.7%) disagreed. Additionally, 64 (19.1%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 73 (21.8%) respondents agreed, and 100 (29.9%) strongly agreed. A mean score of 3.4 with a standard deviation of 1.39 was of obtained for this item. These findings suggest that a majority of individuals have a good understanding of the concept of hardware and software.

Being able to install the operating system on a computer can be a valuable skill, as it allows individuals to set up and configure their computers according to their needs and preferences. It can also be useful for troubleshooting and upgrading purposes. The data reported on Table 6 shows

that a significant proportion of respondents reported being able to install the operating system on their computer. Among the respondents, 55 (16.4%) strongly disagreed with the statement, while 52 (15.5%) disagreed. Additionally, 67 (20%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 80 (23.9%) respondents agreed, and 81 (24.2%) strongly agreed. A mean score of 3.24 with a standard deviation of 1.40 was of obtained for this item. These findings suggest that a majority of individuals are capable of installing the operating system on their computer.

A significant proportion of respondents reported being able to install software or programs on their computer. Among the respondents, 61 (18.2%) strongly disagreed with the statement, while 61 (18.2%) disagreed. Additionally, 69 (20.6%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 63 (18.8%) respondents agreed, and 81 (24.2%) strongly agreed. A mean score of 3.13 with a standard deviation of 1.43 was of obtained for this item. These findings suggest that a majority of the teachers are capable of installing software or programs on their computer.

From the table, it appears the majority of respondents have a good understanding of what the internet and World Wide Web (WWW) are and their uses. Among the respondents, 47 (14%) strongly disagreed with the statement, while 55 (16.4%) disagreed. Additionally, 64 (19.1%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 68 (20.3%) respondents agreed, and 101 (30.1%) strongly agreed. A mean score of 3.36 with a standard deviation of 1.42 was of obtained for this item. These findings suggest that a significant proportion of individuals have knowledge about the internet and the World Wide Web (WWW) and their uses.

Data shown on Table 6 also reports a significant proportion of respondents incorporate digital tools such as computers or smart devices (tablets or smartphones) in their lesson preparation. Among the respondents, 59 (17.6%) strongly disagreed with the statement, while 49 (14.6%) disagreed. Additionally, 62 (18.5%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 73 (21.8%) respondents agreed, and 92 (27.5%) strongly agreed. A mean score of 3.27 with a standard deviation of 1.45 was of obtained for this item. These findings suggest that a substantial number of individuals utilize digital tools in their lesson preparation.

A significant proportion of respondents feel confident in their ability to troubleshoot basic technical issues that may arise while using new technologies and digital resources in the classroom. Among the respondents, 53 (15.8%) strongly disagreed with the statement, while 52 (15.5%) disagreed. Additionally, 82 (24.5%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 69 (20.6%) respondents agreed, and 79 (23.6%) strongly agreed. A mean score of 3.21 with a standard deviation of 1.38 was of obtained for this item. These findings suggest that a substantial number of individuals possess the skills to troubleshoot basic technical issues in the classroom when using new technologies and digital resources.

According to the data presented on Table 6, a significant proportion of respondents feel capable of collaborating with other teachers to integrate new technologies and digital resources into the curriculum to facilitate teaching and learning. Among the respondents, 59 (17.6%) strongly disagreed with the statement, while 59 (17.6%) disagreed. Additionally, 66 (19.7%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 70

(20.9%) respondents agreed, and 81 (24.2%) strongly agreed. A mean score of 3.16 with a standard deviation of 1.43 was of obtained for this item. These findings suggest that a substantial number of teachers feel confident in their ability to collaborate with other teachers for integrating new technologies and digital resources into the curriculum.

The data on Table 6 reports a significant proportion of respondents feel capable of using technology and digital resources to enhance student engagement and learning. Among the respondents, 51 (15.2%) strongly disagreed with the statement, while 43 (12.8%) disagreed. Additionally, 69 (20.6%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 85 (25.4%) respondents agreed, and 87 (26%) strongly agreed. A mean score of 3.34 with a standard deviation of 1.39 was of obtained for this item. These findings suggest that a substantial number of teachers feel confident in their ability to use technology and digital resources to enhance student engagement and learning.

A significant proportion of respondents reported that they feel comfortable with using various software and apps for teaching. Among the respondents, 51 (15.2%) strongly disagreed with the statement, while 57 (17%) disagreed. Additionally, 63 (18.8%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 86 (25.7%) respondents agreed, and 78 (23.3%) strongly agreed. A mean score of 3.25 with a standard deviation of 1.38 was of obtained for this item. These findings suggest that a substantial number of teachers feel comfortable using various software and apps for teaching.

A significant proportion of respondents also reported staying current and informed about new technologies and tools that can be used for teaching and learning. Among the respondents, 51 (15.2%) strongly disagreed with the statement, while 60 (17.9%) disagreed. Additionally, 60 (17.9%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 80 (23.9%) respondents agreed, and 84 (25.1%) strongly agreed. A mean score of 3.26 with a standard deviation of 1.40 was of obtained for this item. These findings suggest that a substantial number of teachers make an effort to stay updated with new technologies and tools for teaching and learning.

It can also be observed on Table 6 that a significant proportion of respondents have used online collaboration tools such as Google Classroom, Microsoft Teams, etc. for teaching and learning before. Among the respondents, 63 (18.8%) strongly disagreed with the statement, while 65 (19.4%) disagreed. Additionally, 73 (21.8%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 76 (22.7%) respondents agreed, and 58 (17.3%) strongly agreed. A mean score of 3 with a standard deviation of 1.37 was of obtained for this item. These findings suggest that a substantial number of teachers have experience in using online collaboration tools for teaching and learning.

Table 7: Teachers' online safety skills

ITEM	SD	D	N	A	SA	Mean	Std. Dev
I know how to restrict apps' access to my personal information (location, contact, camera).	69 (20.6%)	64 (19.1%)	66 (19.7%)	68 (20.3%)	68 (20.3%)	3.01	1.43
I can recognize and block unwanted emails and phishing messages.	62 (18.5%)	48 (14.3%)	62 (18.5%)	84 (25.1%)	79 (23.6%)	3.21	1.43
I can change the privacy settings on my social media posts and profile.	57 (17%)	52 (15.5%)	55 (16.4%)	82 (24.5%)	89 (26.6%)	3.28	1.44
I know how to create a strong password.	55 (16.4%)	57 (17%)	59 (17.6%)	72 (21.5%)	92 (27.5%)	3.27	1.44
I have a good understanding of the policies and procedures for reporting online safety incidents.	65 (19.4%)	66 (19.7%)	80 (23.9%)	61 (18.2%)	63 (18.8%)	2.97	1.38
I stay current on online safety issues and best practices.	55 (16.4%)	59 (17.6%)	79 (23.6%)	78 (23.3%)	64 (19.1%)	3.11	1.35
I encourage open communication and reporting of online safety concerns among students.	56 (16.7%)	62 (18.5%)	74 (22.1%)	72 (21.5%)	71 (21.2%)	3.12	1.38
I help students understand the potential consequences of their online actions.	48 (14.3%)	59 (17.6%)	70 (20.9%)	78 (23.3%)	80 (23.9%)	3.25	1.37
I help students understand the importance of digital footprint and its impact.	49 (14.6%)	70 (20.9%)	61 (18.2%)	78 (23.3%)	77 (23%)	3.19	1.38

ITEM	SD	D	N	A	SA	Mean	Std. Dev
I teach students about online privacy and how to protect their personal information.	43 (12.8%)	68 (20.3%)	78 (23.3%)	75 (22.4%)	71 (21.2%)	3.19	1.33
I educate students about online predators, cyberbullying, and other online dangers	67 (20%)	46 (13.7%)	70 (20.9%)	68 (20.3%)	84 (25.1%)	3.17	1.46
I effectively teach students about online safety and the responsible use of technology.	56 (16.7%)	48 (14.3%)	69 (20.6%)	91 (27.2%)	71 (21.2%)	3.22	1.38

Source: Field data (2023)

Table 7 presents gathered with respect to Teachers' preparedness to use the online safety skills in the new curriculum.

Restricting apps' access to personal information is an important aspect of digital privacy and security. Many apps request permission to access various types of personal information, such as location, contacts, camera, microphone, and more, to provide certain features or functionalities. However, it is essential to be cautious about granting such permissions, as it may involve sharing sensitive information and potentially compromising privacy. The data shown on Table 7 suggests that respondents have varying levels of knowledge about how to restrict apps' access to their personal information, such as location, contacts, and camera. Among the respondents, 69 (20.6%) strongly disagreed with the statement, while 64 (19.1%) disagreed. Additionally, 66 (19.7%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 68 (20.3%) respondents agreed, and 68 (20.3%) strongly agreed. The mean score obtained for this was 3.01 with a standard deviation of 1.43. These findings suggest that there is a range of knowledge levels among teachers when it comes to restricting apps' access to personal information.

A strong password helps protect personal and sensitive information from unauthorized access, reducing the risk of identity theft, data breaches, and other security incidents. A weak or easily guessable password, on the other hand, can leave accounts vulnerable to cyber-attacks and compromise privacy and security. It is observable from Table 7 that respondents have varying levels of knowledge about creating strong passwords. Among the respondents, 55 (16.4%) strongly disagreed with the statement, while 57

(17%) disagreed. Additionally, 59 (17.6%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 72 (21.5%) respondents agreed, and 92 (27.5%) strongly agreed. A mean score of 3.27 with a standard deviation of 1.44 was of obtained for this item. These findings suggest that there is a range of knowledge levels among educators when it comes to creating strong passwords.

The data on Table 7 also suggests that the teachers have varying levels of understanding about the policies and procedures for reporting online safety incidents. Among the respondents, 65 (19.4%) strongly disagreed with the statement, while 66 (19.7%) disagreed. Additionally, a significant number of 80 (23.9%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 61 (18.2%) respondents agreed, and 63 (18.8%) strongly agreed. A mean score of 2.97 with a standard deviation of 1.38 was of obtained for this item. These findings suggest that there is a range of understanding among educators when it comes to the policies and procedures for reporting online safety incidents.

When asked about staying current on online safety issues and best practices, 55 respondents (16.4%) strongly disagreed, while 59 respondents (17.6%) disagreed with the statement. In addition, 79 respondents (23.6%) reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 78 respondents (23.3%) agreed, and 64 respondents (19.1%) strongly agreed with the statement. A mean score of 3.11 with a standard deviation of 1.35 was of obtained for this item. The data indicates that while a significant number of teachers agree or strongly agree that they stay current on online safety issues and best practices, there is also a notable proportion of respondents who either

disagree or report a neutral stance. This suggests that there may be room for improvement in terms of increasing awareness and engagement among teachers in staying updated on online safety issues and best practices.

With the increasing use of technology and online resources in educational settings, it is important for teachers to create a safe environment where students feel comfortable to communicate and report any online safety concerns they may encounter. This promotes a culture of online safety awareness and helps protect students from potential online risks, ensuring a positive and secure learning experience. According to the data, 56 teachers (16.7%) indicated that they strongly disagreed with the statement, while 62 teachers (18.5%) disagreed. Furthermore, 74 teachers (22.1%) reported a neutral stance, neither agreeing nor disagreeing. On the other hand, 72 teachers (21.5%) agreed, and 71 teachers (21.2%) strongly agreed that they encourage open communication and reporting of online safety concerns among students. A mean score of 3.12 with a standard deviation of 1.38 was of obtained for this item.

Teaching students about the potential consequences of their online actions is vital in the digital age. As technology becomes increasingly prevalent in education, it is crucial for teachers to educate students about responsible online behavior and the potential repercussions of their actions. This helps students develop digital literacy skills and make informed decisions when using online resources. According to the data, 48 teachers (14.3%) strongly disagreed with the statement, while 59 teachers (17.6%) disagreed. Additionally, 70 teachers (20.9%) reported a neutral stance, neither agreeing nor disagreeing. On the other hand, 78 teachers (23.3%) agreed, and 80

teachers (23.9%) strongly agreed that they help students understand the potential consequences of their online actions. A mean score of 3.25 with a standard deviation of 1.37 was of obtained for this item. This suggests that there may be room for improvement in educating students about responsible online behavior and the potential repercussions of their actions. Teachers can play a critical role in guiding students to make informed decisions and develop digital literacy skills to navigate the online world safely.

Table 7 also presents respondents' feedback on helping students understand the importance of digital footprint and its impact. The data presented shows 49 teachers (14.6%) strongly disagreed with the statement, while 70 teachers (20.9%) disagreed. Additionally, 61 teachers (18.2%) reported a neutral stance, neither agreeing nor disagreeing. On the other hand, 78 teachers (23.3%) agreed, and 77 teachers (23%) strongly agreed that they help students understand the importance of their digital footprint and its impact. A mean score of 3.19 with a standard deviation of 1.38 was of obtained for this item.

The data present on Table 7 shows that 43 teachers (12.8%) strongly disagreed with the statement "I teach students about online privacy and how to protect their personal information.", while 68 teachers (20.3%) disagreed. Moreover, 78 teachers (23.3%) reported a neutral stance, neither agreeing nor disagreeing. On the other hand, 75 teachers (22.4%) agreed, and 71 teachers (21.2%) strongly agreed that they teach students about online privacy and how to protect their personal information. A mean score of 3.19 with a standard deviation of 1.33 was of obtained for this item.

Educating students about online predators, cyberbullying, and other online dangers is crucial to ensure their safety and well-being in the digital world. As technology becomes more prevalent in students' lives, it is imperative for educators to address these potential risks and provide guidance on safe online behaviors. The results data reveals that 67 teachers (20%) strongly disagreed with the statement, while 46 teachers (13.7%) disagreed. Furthermore, 70 teachers (20.9%) reported a neutral stance, neither agreeing nor disagreeing. On the other hand, 68 teachers (20.3%) agreed, and 84 teachers (25.1%) strongly agreed that they educate students about online predators, cyberbullying, and other online dangers. A mean score of 3.17 with a standard deviation of 1.46 was of obtained for this item.

Concerning teaching students about online safety and responsible technology use is essential in today's digital age, 56 teachers (16.7%) strongly disagreed with the statement, while 48 teachers (14.3%) disagreed. Additionally, 69 teachers (20.6%) reported a neutral stance, neither agreeing nor disagreeing. On the other hand, a significant number of teachers agreed or strongly agreed, with 91 teachers (27.2%) agreeing and 71 teachers (21.2%) strongly agreeing that they effectively teach students about online safety and responsible technology use. A mean score of 3.22 with a standard deviation of 1.38 was of obtained for this item.

Table 8: Teachers' collaboration and creativity skills

ITEM	SD	D	N	A	SA	Mean	Std. Dev
I actively seek out and participate in collaborative opportunities with other teachers.	41 (12.2%)	68 (20.3%)	55 (16.4%)	93 (27.8%)	78 (23.3%)	3.30	1.35
I use technology to facilitate collaboration and communication with other teachers.	50 (14.9%)	61 (18.2%)	62 (18.5%)	81 (24.2%)	81 (24.2%)	3.24	1.39
I incorporate teamwork and group activities into my lessons.	42 (12.5%)	66 (19.7%)	62 (18.5%)	78 (23.3%)	87 (26%)	3.30	1.37
I am open to receiving feedback and suggestions from colleagues.	55 (16.4%)	55 (16.4%)	64 (19.1%)	78 (23.3%)	83 (24.8%)	3.24	1.41
I am willing to share my own teaching materials and resources with colleagues.	56 (16.7%)	53 (15.8%)	64 (19.1%)	76 (22.7%)	86 (25.7%)	3.25	1.42
I am willing to try new teaching methods and strategies suggested by colleagues.	63 (18.8%)	56 (16.7%)	60 (17.9%)	59 (17.6%)	97 (29%)	3.21	1.49
I actively seek out and participate in professional development opportunities to improve my collaboration skills.	54 (16.1%)	58 (17.3%)	55 (16.4%)	60 (17.9%)	108 (32.2%)	3.33	1.48
I use technology to facilitate student collaboration	55 (16.4%)	52 (15.5%)	63 (18.8%)	85 (25.4%)	80 (23.9%)	3.25	1.40

ITEM	SD	D	N	A	SA	Mean	Std. Dev
and teamwork.							
I am willing to experiment and take risks in my teaching.	53 (15.8%)	49 (14.6%)	58 (17.3%)	86 (25.7%)	89 (26.6%)	3.33	1.41
I actively look for ways to infuse creativity into my teaching and lessons.	53 (15.8%)	48 (14.3%)	60 (17.9%)	81 (24.2%)	93 (27.8%)	3.34	1.42
I use technology to facilitate student-led and project-based learning.	61 (18.2%)	49 (14.6%)	81 (24.2%)	73 (21.8%)	71 (21.2%)	3.13	1.39
I actively seek out and use technology tools that support student creativity and collaboration.	56 (16.7%)	54 (16.1%)	62 (18.5%)	86 (25.7%)	77 (23%)	3.22	1.40

Source: Field data (2023)

Table 8 is used to present results on the question items relating to Teachers' preparedness to use collaboration and creativity skills in the curriculum.

When asked if teachers actively seek out and participate in collaborative opportunities with other teachers, 41 teachers (12.2%) strongly disagreed with the statement, while 68 teachers (20.3%) disagreed. Moreover, 55 teachers (16.4%) reported a neutral stance, neither agreeing nor disagreeing. On the other hand, a significant number of teachers agreed or strongly agreed, with 93 teachers (27.8%) agreeing and 78 teachers (23.3%) strongly agreed. The mean score obtained for this was 3.3 with a standard deviation of 1.35.

The use of technology in education has become increasingly prevalent, and it has the potential to greatly facilitate collaboration and communication among teachers. According to the data shown on Table 8, 50 teachers (14.9%) strongly disagreed with the statement "I use technology to facilitate collaboration and communication with other teachers.", while 61 teachers (18.2%) disagreed. Furthermore, 62 teachers (18.5%) reported a neutral stance, neither agreeing nor disagreeing. On the other hand, a significant number of teachers agreed or strongly agreed, with 81 teachers (24.2%) agreeing and 81 teachers (24.2%) strongly agreed. A mean score of 3.24 with a standard deviation of 1.39 was of obtained for this item.

It is also observable from table 8 that 42 teachers (12.5%) strongly disagreed with incorporate teamwork and group activities into their lessons, while 66 teachers (19.7%) disagreed. Additionally, 62 teachers (18.5%) reported a neutral stance, neither agreeing nor disagreeing. On the other hand,

a considerable number of teachers agreed or strongly agreed, with 78 teachers (23.3%) agreeing and 87 teachers (26%) strongly agreed. A mean score of 3.3 with a standard deviation of 1.37 was of obtained for this item.

The data shows that 55 teachers (16.4%) strongly disagreed with the statement "I am open to receiving feedback and suggestions from colleagues", while another 55 teachers (16.4%) disagreed. Additionally, 64 teachers (19.1%) reported a neutral stance, neither agreeing nor disagreeing. On the other hand, a significant number of teachers agreed or strongly agreed, with 78 teachers (23.3%) agreeing and 83 teachers (24.8%) strongly agreeing that they are open to receiving feedback and suggestions from colleagues. A mean score of 3.24 with a standard deviation of 1.41 was of obtained for this item.

The findings suggest that a significant proportion of teachers are willing to share their teaching materials and resources with colleagues. However, there are also teachers who either disagree or report a neutral stance, indicating potential areas for improvement in fostering a culture of resource sharing and collaboration among colleagues. The data on Table 8 indicates that 56 teachers (16.7%) strongly disagreed with the statement, while 53 teachers (15.8%) disagreed. Additionally, 64 teachers (19.1%) reported a neutral stance, neither agreeing nor disagreeing. On the other hand, a considerable number of teachers agreed or strongly agreed, with 76 teachers (22.7%) agreeing and 86 teachers (25.7%) strongly agreeing that they are willing to share their own teaching materials and resources with colleagues. A mean score of 3.25 with a standard deviation of 1.42 was of obtained for this item.

Being willing to try new teaching methods and strategies suggested by colleagues is essential for professional growth and development. It reflects a growth mindset and a willingness to embrace change and innovation in teaching practices. 63 teachers (18.8%) strongly disagreed with the statement, while 56 teachers (16.7%) disagreed. Additionally, 60 teachers (17.9%) reported a neutral stance, neither agreeing nor disagreeing. On the other hand, a significant number of teachers agreed or strongly agreed, with 59 teachers (17.6%) agreeing and 97 teachers (29%) strongly agreeing that they are willing to try new teaching methods and strategies suggested by colleagues. A mean score of 3.21 with a standard deviation of 1.49 was of obtained for this item. The findings suggest that a substantial proportion of teachers are open to trying new teaching methods and strategies suggested by their colleagues. However, there are also teachers who either disagree or report a neutral stance, indicating potential areas for improvement in fostering a culture of openness to new teaching approaches and strategies among colleagues.

With the item "I actively seek out and participate in professional development opportunities to improve my collaboration skills.", 54 teachers (16.1%) strongly disagreed with the statement, while 58 teachers (17.3%) disagreed. Additionally, 55 teachers (16.4%) reported a neutral stance, neither agreeing nor disagreeing. On the other hand, a significant number of teachers agreed or strongly agreed, with 60 teachers (17.9%) agreeing and 108 teachers (32.2%) strongly agreeing that they actively seek out and participate in professional development opportunities to improve their collaboration skills. A mean score of 3.33 with a standard deviation of 1.48 was of obtained for this item. The results presented suggest that a substantial proportion of

teachers recognize the importance of collaboration skills and actively seek out professional development opportunities to improve them.

Technology has become an integral part of modern education, and it can be leveraged to facilitate student collaboration and teamwork. Respondents were asked on their use of technology to facilitate student collaboration and teamwork. From the results shown on Table 8, 55 teachers (16.4%) strongly disagreed with the statement, while 52 teachers (15.5%) disagreed. Additionally, 63 teachers (18.8%) reported a neutral stance, neither agreeing nor disagreeing. On the other hand, a significant number of teachers agreed or strongly agreed, with 85 teachers (25.4%) agreeing and 80 teachers (23.9%) strongly agreed. A mean score of 3.25 with a standard deviation of 1.40 was of obtained for this item.

Concerning the statement "I am willing to experiment and take risks in my teaching.", 53 teachers (15.8%) strongly disagreed with the statement, while 49 teachers (14.6%) disagreed. Additionally, 58 teachers (17.3%) reported a neutral stance, neither agreeing nor disagreeing. On the other hand, a significant number of teachers agreed or strongly agreed, with 86 teachers (25.7%) agreeing and 89 teachers (26.6%) strongly agreed. A mean score of 3.33 with a standard deviation of 1.41 was of obtained for this item.

The reported data on Table 8 also indicates that 53 teachers (15.8%) strongly disagreed with actively looking for ways to infuse creativity into their teaching and lessons, while 48 teachers (14.3%) disagreed. Additionally, 60 teachers (17.9%) reported a neutral stance, neither agreeing nor disagreeing. On the other hand, a significant number of teachers agreed or strongly agreed, with 81 teachers (24.2%) agreeing and 93 teachers (27.8%) strongly agreeing

that they actively look for ways to infuse creativity into their teaching and lessons. A mean score of 3.34 with a standard deviation of 1.42 was of obtained for this item.

From Table 8, it appears that a significant proportion of teachers reported using technology to facilitate student-led and project-based learning. Among the respondents, 61 (18.2%) strongly disagreed with the statement, while 49 (14.6%) disagreed. Additionally, 81 (24.2%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 73 (21.8%) respondents agreed, and 71 (21.2%) strongly agreed. A mean score of 3.13 with a standard deviation of 1.39 was of obtained for this item. These findings suggest that while a considerable number of educators are utilizing technology for student-led and project-based learning, there is also a notable percentage of respondents who express disagreement or are neutral towards this approach.

It can also be observed from Table 8 that a significant proportion of teachers actively seek out and use technology tools that support student creativity and collaboration. Among the respondents, 56 (16.7%) strongly disagreed with the statement, while 54 (16.1%) disagreed. Additionally, 62 (18.5%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 86 (25.7%) respondents agreed, and 77 (23%) strongly agreed. A mean score of 3.22 with a standard deviation of 1.4 was of obtained for this item. These findings suggest that a substantial number of educators are actively incorporating technology tools that foster student creativity and collaboration in their teaching practices. However, there is also a percentage of respondents who express disagreement or are neutral towards this approach.

Table 9: Teachers' digital culture skills

ITEM	SD	D	N	A	SA	Mean	Std. Dev
I am familiar with current digital trends and technologies.	49 (14.6%)	57 (17%)	71 (21.2%)	81 (24.2%)	77 (23%)	3.24	1.37
I can integrate digital tools and technologies into my teaching.	43 (12.8%)	57 (17%)	72 (21.5%)	80 (23.9%)	83 (24.8%)	3.31	1.35
I can use digital resources and technologies to support student learning.	50 (14.9%)	59 (17.6%)	59 (17.6%)	92 (27.5%)	75 (22.4%)	3.25	1.37
I can communicate and collaborate effectively using digital tools and technologies.	55 (16.4%)	64 (19.1%)	64 (19.1%)	79 (23.6%)	73 (21.8%)	3.15	1.39
I can use technology to support student engagement and motivation.	52 (15.5%)	49 (14.6%)	64 (19.1%)	82 (24.5%)	88 (26.3%)	3.31	1.40
I can use technology to support student creativity and innovation.	50 (14.9%)	51 (15.2%)	49 (14.6%)	90 (26.9%)	95 (28.4%)	3.39	1.42
I am able to use technology to support student-centered learning.	51 (15.2%)	52 (15.5%)	65 (19.4%)	75 (22.4%)	92 (27.5%)	3.31	1.41
I can use technology to support student self-direction and autonomy.	62 (18.5%)	55 (16.4%)	69 (20.6%)	75 (22.4%)	74 (22.1%)	3.13	1.41

ITEM	SD	D	N	A	SA	Mean	Std. Dev
I am able to use technology to support student collaboration and teamwork.	46 (13.7%)	62 (18.5%)	71 (21.2%)	74 (22.1%)	82 (24.5%)	3.25	1.37
I can use technology to support student problem-solving and critical thinking.	45 (13.4%)	58 (17.3%)	66 (19.7%)	98 (29.3%)	68 (20.3%)	3.26	1.32
I can use technology to support student communication and digital literacy.	37 (11%)	55 (16.4%)	70 (20.9%)	90 (26.9%)	83 (24.8%)	3.38	1.31
I can use technology to support student online safety and digital citizenship.	55 (16.4%)	52 (15.5%)	75 (22.4%)	79 (23.6%)	74 (22.1%)	3.19	1.38

Source: Field data (2023)

Table 9 presents results gathered from respondents on teachers' preparedness to use digital culture skills in the new curriculum.

The data shown reports a significant proportion of teachers express familiarity with current digital trends and technologies. Among the respondents, 49 (14.6%) strongly disagreed with the statement, while 57 (17%) disagreed. Additionally, 71 (21.2%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 81 (24.2%) respondents agreed, and 77 (23%) strongly agreed. The mean score obtained for this was 3.24 with a standard deviation of 1.37. These findings suggest that a majority of educators are familiar with current digital trends and technologies, which could potentially support their instructional practices. However, there is also a percentage of respondents who express disagreement or are neutral towards their familiarity with digital trends and technologies.

Also, when asked about the integration of digital tools into their teaching, the data shows a considerable proportion of teachers feel confident in their ability to integrate digital tools and technologies into their teaching. Among the respondents, 43 (12.8%) strongly disagreed with the statement, while 57 (17%) disagreed. Additionally, 72 (21.5%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 80 (23.9%) respondents agreed, and 83 (24.8%) strongly agreed. A mean score of 3.31 with a standard deviation of 1.35 was of obtained for this item. These findings suggest that a majority of educators feel capable of integrating digital tools and technologies into their instructional practices. However, there is also a percentage of respondents who express disagreement or are neutral towards their ability to integrate digital tools and technologies.

Among the respondents, 50 (14.9%) strongly disagreed with the statement "I can communicate and collaborate effectively using digital tools and technologies.", while 59 (17.6%) disagreed. Additionally, 59 (17.6%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 92 (27.5%) respondents agreed, and 75 (22.4%) strongly agreed. A mean score of 3.25 with a standard deviation of 1.37 was of obtained for this item. These findings suggest that a majority of educators feel capable of using digital resources and technologies to support student learning. However, there is also a percentage of respondents who express disagreement or are neutral towards their ability to use digital resources and technologies for this purpose.

A significant proportion of respondent teachers reported that feel confident in their ability to use technology to support student engagement and motivation. Among the respondents, 52 (15.5%) strongly disagreed with the statement, while 49 (14.6%) disagreed. Additionally, 64 (19.1%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 82 (24.5%) respondents agreed, and 88 (26.3%) strongly agreed. A mean score of 3.15 with a standard deviation of 1.39 was of obtained for this item. These findings suggest that a majority of educators feel capable of using technology to support student engagement and motivation.

Among the respondents, 50 (14.9%) strongly disagreed with the statement "I can use technology to support student creativity and innovation.", while 51 (15.2%) disagreed. Additionally, 49 (14.6%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 90 (26.9%) respondents agreed, and 95 (28.4%) strongly agreed. A mean score of 3.39

with a standard deviation of 1.42 was of obtained for this item. These findings suggest that a majority of educators feel capable of using technology to support student creativity and innovation.

The data provided in Table 9, shows that a significant proportion of teachers feel confident in their ability to use technology to support student-centered learning. Among the respondents, 51 (15.2%) strongly disagreed with the statement, while 52 (15.5%) disagreed. Additionally, 65 (19.4%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 75 (22.4%) respondents agreed, and 92 (27.5%) strongly agreed. A mean score of 3.31 with a standard deviation of 1.41 was of obtained for this item. These findings suggest that a majority of teachers feel capable of using technology to support student-centered learning.

A significant proportion of educators feel capable of using technology to support student self-direction and autonomy. Among the respondents, 62 (18.5%) strongly disagreed with the statement, while 55 (16.4%) disagreed. Additionally, 69 (20.6%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 75 (22.4%) respondents agreed, and 74 (22.1%) strongly agreed. A mean score of 3.13 with a standard deviation of 1.41 was of obtained for this item. These findings suggest that a majority of teachers feel confident in their ability to use technology to promote student self-direction and autonomy.

A significant proportion of teachers reported feeling capable of using technology to support student problem-solving and critical thinking skills. Among the respondents, 45 (13.4%) strongly disagreed with the statement, while 58 (17.3%) disagreed. Additionally, 66 (19.7%) respondents reported a

neutral stance, neither agreeing nor disagreeing. Furthermore, 98 (29.3%) respondents agreed, and 68 (20.3%) strongly agreed. A mean score of 3.25 with a standard deviation of 1.37 was of obtained for this item. These findings suggest that a majority of educators feel confident in their ability to use technology to promote student problem-solving and critical thinking skills.

The data presented on Table 9 shows that that a significant proportion of teachers feel capable of using technology to support student communication and digital literacy skills. Among the respondents, 37 (11%) strongly disagreed with the statement, while 55 (16.4%) disagreed. Additionally, 70 (20.9%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 90 (26.9%) respondents agreed, and 83 (24.8%) strongly agreed. A mean score of 3.38 with a standard deviation of 1.31 was of obtained for this item. These findings suggest that a majority of teachers feel confident in their ability to use technology to promote student communication and digital literacy skills.

Finally, when asked if teachers feel capable of using technology to support student online safety and digital citizenship, 55 (16.4%) strongly disagreed with the statement, while 52 (15.5%) disagreed. Additionally, 75 (22.4%) respondents reported a neutral stance, neither agreeing nor disagreeing. Furthermore, 79 (23.6%) respondents agreed, and 74 (22.1%) strongly agreed. A mean score of 3.19 with a standard deviation of 1.38 was of obtained for this item. These findings suggest that a majority of teachers feel confident in their ability to use technology to promote student online safety and digital citizenship. However, there is also a percentage of

respondents who express disagreement or are neutral towards their ability to use technology for this purpose.

Hypotheses Testing

The third objective of the study was to assess the extent to which the teacher's digital literacy skills determine their preparedness to use the new standards-based curriculum. This culminated into a hypothesis that there is no significant effect of teachers' digital literacy skills on the preparedness to implement the standard-based curriculum.

To show an overall regression for the relationship between the digital literacy skills and teachers' preparedness in the implementation of the curriculum, a model summary is presented on table 10.

Table 10: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.788[a]	0.621	0.615	0.45010	1.888

a. Predictors (Constant), DC, CTS, FS, OSS, CCS

b. Dependent Variable: TP

Source: Field data (2023)

From Table 10, the R square explains the amount of variation that exist in the dependent variable caused by the independent variables. R square which was 0.621 indicate that there is 62.1% variation in teachers' preparedness as explained by the digital literacy skills. The results from the Durbin-Watson of 1.888 indicate that there is no autocorrelation among the residuals in the regression. This is because DW is greater than 1.5 and less.

Table 11: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig
Regression	15727.967	5	3145.591	107.828	0.000 [b]
Residual	9597.702	329	29.172		
Total	25325.660	334			

a. Dependent Variable: TP

b. Predictors (Constant), DC, CTS, FS, OSS, CCS

From the results presented, it explains whether variation in the dependent variable can be explained by the regression. The significant value of the F-stat of 107.828 is 0.000<0.05. In conclusion, the variation in the dependent variable can be explained by the regression model.

Table 12: Regression results

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig
Constant	-1.584	1.793		-0.883	0.378
Critical Thinking	0.250	0.050	0.230	4.982	0.000
Functional Skills	0.230	0.055	0.203	4.204	0.000
Online Safety Skills	0.139	0.056	0.124	2.492	0.013
Collaboration and Creativity	0.223	0.056	0.212	3.988	0.000
Digital Culture	0.204	0.055	0.187	3.715	0.000

Dependent Variable: TP

Source: Field data (2023)

From the results of the regression, presented on table 12, critical thinking was positive and significant. A unit increase in critical thinking will

lead to 0.250 increase in Teachers' preparedness to implement the curriculum, hence the null is rejected. The result is consistent with the work of Abbas, Hussain and Rasool (2019) Functional skill was also positive and significant. A unit increase in functional skills will lead to 0.30 increase in teachers' preparedness to implement the curriculum, hence the null hypothesis is rejected. The result is also consistent with the findings of Serafín, Depešová and Bánesz (2018).

Online safety skills were also a positive predictor of teachers' preparedness. A unit increase in online safety skills will lead to 0.139 increase in teachers' preparedness. The null hypothesis is therefore rejected. Collaborative and creativity was also predictor of teachers' preparedness. A unit increase in collaborative and creativity will lead to 0.223 increase in teachers' preparedness to implement the curriculum, hence the null is rejected. The result is consistent with the outcome of Al-Awidi and Aldhafeeri (2017). Finally, digital culture was also significant with positive relationship. A unit increase in digital culture will lead to 0.204 increase in teachers' preparedness to implement to implement the curriculum, hence the null is rejected.

The study further explored the among the independent variables. The results are shown in Table 13.

Table 13: Pearson Correlation Results on Study Variables

		CTS	FS	OSS	CCS	DC	TP
CTS	Pearson Correlation	1	.520**	.505**	.645**	.554**	.639**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
FS	Pearson Correlation	.520**	1	.628**	.599**	.617**	.643**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
OSS	Pearson Correlation	.505**	.628**	1	.632**	.631**	.620**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
CCS	Pearson Correlation	.645**	.599**	.632**	1	.644**	.681**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
DC	Pearson Correlation	.554**	.617**	.631**	.644**	1	.655**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
TP	Pearson Correlation	.639**	.643**	.620**	.681**	.655**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

N = 335

A Pearson correlation coefficient analysis was performed on the study variables: Critical Thinking Skills (CTS), Functional Skills (FS), Online Safety Skills (OSS), Collaboration and Creativity Skills (CCS), Digital Culture (DC), and Teacher Preparedness (TP) to evaluate the relationships between them with respect to a significance level of 0.01(2-tailed) to determine whether the correlations were statistically significant. Based on the results presented in Table 13, it can be reported that there are significant correlations between all the six variables measured on the sample of 335 teachers.

The results, as presented in Table 13, shows that there is a moderately strong positive correlation between Functional Skills (FS) and Critical Thinking Skills (CTS) of teachers [$r = 0.520$, n=335, $p < 0.01$], indicating that

teachers who have higher levels of functional skills tend to have higher levels of critical thinking skills as well.

Moreover, the analysis reveals that there is a significantly strong positive correlation between Online Safety Skills (OSS) and Critical Thinking Skills (CTS) of teachers [r = 0.505, n=335, p < 0.01]. This indicates that teachers who have higher levels of online safety skills also tend to have higher levels of critical thinking skills.

Additionally, there are strong positive correlations between Collaboration and Creativity Skills (CCS) and Digital Culture (DC) [r = 0.644, n=335, p < 0.01], between Teacher Preparedness (TP) and Digital Culture (DC) [r = 0.655, n=335, p < 0.01], and between Teacher Preparedness (TP) and Collaboration and Creativity Skills (CCS) [r = 0.681, n=335, p < 0.01].

Finally, there are moderately strong positive correlations between Online Safety Skills (OSS) and Collaboration and Creativity Skills (CCS) [r=0.632, n =335, p < 0.01], between Online Safety Skills (OSS) and Digital Culture (DC) [r = 0.631, n=335, p < 0.01], between Functional Skills (FS) and Online Safety Skills (OSS) [r = 0.628, n=335, p < 0.01], and between Online Safety Skills (OSS) and Teacher Preparedness (TP) [r =0.620, n=335, p < 0.01].

In summary, the results suggest that there are significant positive correlations between the six variables measured, indicating that these variables may be useful in predicting each other.

Chapter summary

This chapter specifically examined the results generated from the analysis of the data of all the research variables. The research hypotheses and the objectives of the study were tested by the various impacts and effects

created by the research variables from the outcome of the results. The next chapter is on the conclusions drawn on the relationship of the variables and some recommendations for policy consideration.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents the summary of findings, conclusions and recommendations based on the results obtained. The study was intended to examine the digital literacy skills of basic school teachers as a determinant of the teachers' preparedness to use the 2019 standard-based curriculum. The overview of the study presents a snapshot of the research, recounting the various highlights of the study. The inference based on the empirical study is captured in the conclusion while the recommendations are proposed based on the conclusions, ensuring to capture all the study's variables under consideration.

Summary of key findings

The purpose of the present study was specifically to examine the digital literacy skills of basic school teachers as a determinant of their preparedness to use the 2019 curriculum at the basic school level within the Cape Coast Metropolis of Ghana.

The first objective sought to assess the level of teacher preparedness to implement the standard based curriculum being introduced in the pre-tertiary level of education in Ghana. it was realized that on average, the teachers in the sample feel moderately well-prepared in terms of digital literacy. However, there is also considerable variability in the data obtained, with some teachers reporting much higher or lower levels of preparedness with respect to digital literacy skills and the implementation of the curriculum.

With regards to the second objective relating to the extent to which teachers possess relevant digital literacy skills implement the standards-based curriculum introduced at the pre-tertiary level of education in Ghana, the data gathered revealed that a significant majority of the sampled respondents possessed significant levels of relevant knowledge and skills that could help them in their implementation of the standards-based curriculum. However, a significant few of the respondents reported inadequately prepared indicating a need for relevant stakeholder effort to address such issue.

The analysis of the multiple regression of this study confirms the hypothesis that digital literacy skills has a significantly positive impact on teachers' preparedness to use the 2019 standards based curriculum.

Conclusion

The findings of this study have relevant implications for stakeholders in education. The positive and significant effect of digital literacy skills on teachers' preparedness to implement the curriculum is very significant for decision making. It would, therefore, be necessary for policy makers to plan and train teachers on areas that would help improve their digital literacy skills which based on the results of this study, would lead to teachers' preparedness in the implementation of the curriculum.

Recommendations

The study proposed the following recommendations. First of all, Internet access point especially wireless should be expanded to all schools in the municipality in order to enhance and promote convenient interaction between teachers and students as well as among students in order to encourage learning beyond the boundaries of the classroom.

Secondly, some of the prominent issue regarding the effect of teachers' perception to the use of ICT is lack ICT pedagogical training. The study recommends that the government, through the ministry of education, should ensure preemptive measures of equipping teachers with skills necessary for the adaption of modern ICT tools in education. Further, intensive teaching and teacher training programmes that cover ICT integration and the use of ICT need to be urgently enforced at all levels of education.

Suggestions for further studies

The study recommends that, future research in this area would consider providing ICT pedagogical treatment to teachers. In this case, these researchers will be able to ascertain the real impact of ICT in teaching and learning through the collection of pre-test and post test data. There is a need to study the effectiveness of teacher education programs in preparing teachers to implement the digital curriculum.

In addition, future research is essential to observe teachers when implementing the digital curriculum to find out how the implementation is being achieved. Furthermore, a new study is needed to investigate the role of education decision makers in the ministry of education and school administrators in facilitating the implementation of the digital curriculum.

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APPENDIX A

UNIVERSITY OF CAPE COAST

COLLEGE OF DISTANCE EDUCATION

RESEARCH QUESTIONNAIRE FOR BASIC SCHOOL TEACHERS

Dear respondent,

My name is Patrick Biney Amissah, and I am offering a Master of Education degree in Information Technology in the University of Cape Coast.

As part of academic requirements, I am conducting research on:

DIGITAL LITERACY SKILLS AS A DETERMINANT OF TEACHER'S PREPAREDNESS TO USE THE 2019 CURRICULUM: A CASE OF BASIC SCHOOL TEACHERS IN CAPE COAST METROPOLIS.

Please, kindly fill out this questionnaire as accurately as possible to help me with this survey procedure.

Please be assured that the feedback you provide will be kept in absolute confidence and used only for academic purpose.

I very much appreciate your help and cooperation on this matter.

Thank you.

Respondent's Consent:

1. Please tick [✓] the "**Yes**" option and proceed to provide appropriate responses to the questions in this questionnaire if you consent to do so, else tick "**No**" to decline.
   Yes [ ]
   No [ ]

Section A: Demographic Profile

This section is intended to get information on the respondent's demographic background.

Please choose and tick [✓] as appropriate the boxes for each of the questions in this section.

2. **Gender**:
   Male [ ]
   Female [ ]

3. **Age**:
   18-25 years [ ]
   26-35 years [ ]
   36-45 years [ ]
   46-55 years [ ]
   Above 55 years [ ]
4. **Highest level of academic education**:
   JHS [ ]
   SHS/SHTS [ ]
   Tertiary [ ]
   Other [ ]
5. **Teaching experience**:
   1-10 years [ ]
   11-20 years [ ]
   21-30 years [ ]
   31-40 years [ ]
   Above 50 years [ ]
6. **Current level taught**:
   KG [ ]
   Primary [ ]
   JHS [ ]
   SHS [ ]

Section B: Critical Thinking Skills

Please select the best response to each of the questions in this section by ticking [✓] in the boxes provided:

Options available: Strongly Disagree (**1**), Disagree (**2**), Neutral (**3**), Agree (**4**), Strongly Agree (**5**)

SN	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
7.	I encourage students to	[ ]	[ ]	[ ]	[ ]	[ ]

SN	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
	ask questions and find solutions to challenges.					
8.	I guide students to give their opinions and comment on the opinion of others responsibly and constructively.	[ ]	[ ]	[ ]	[ ]	[ ]
9.	I plan activities that give students opportunities to generate flexible kind of ideas.	[ ]	[ ]	[ ]	[ ]	[ ]
10.	I plan activities that guide students to provide statements of logical and justifiable solutions.	[ ]	[ ]	[ ]	[ ]	[ ]
11.	I plan activities that give students opportunities to identify problems and new problem-solving ideas	[ ]	[ ]	[ ]	[ ]	[ ]
12.	I plan activities that give students the opportunity	[ ]	[ ]	[ ]	[ ]	[ ]

SN	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
	to develop, add or expound ideas with a logical explanation.					
13.	I help students analyze and evaluate digital media, such as videos, audio, and images.	[ ]	[ ]	[ ]	[ ]	[ ]
14.	I help students distinguish between fact and opinion when evaluating digital information.	[ ]	[ ]	[ ]	[ ]	[ ]
15.	I help students develop the ability to think critically about the ethical and societal implications of technology	[ ]	[ ]	[ ]	[ ]	[ ]
16.	I help students evaluate the potential biases and perspectives in digital information	[ ]	[ ]	[ ]	[ ]	[ ]
17.	I encourage students to	[ ]	[ ]	[ ]	[ ]	[ ]

SN	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
	question and verify the information they find online.					
18.	I help students develop the ability to think critically about the impact of digital technology on their lives and society.	[ ]	[ ]	[ ]	[ ]	[ ]

Section C: Functional Skills

Please select the best response to each of the questions in this section by ticking [✓] in the boxes provided:
Options available: Strongly Disagree (**1**), Disagree (**2**), Neutral (**3**), Agree (**4**), Strongly Agree (**5**)

SN	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
19.	I understand concepts such as licensed software, Pirated software, Open software, Malware, crack etc.	[ ]	[ ]	[ ]	[ ]	[ ]
20.	I am familiar with the concept of hardware and	[ ]	[ ]	[ ]	[ ]	[ ]

SN	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
	software.					
21.	I can install the operating system on my computer.	[ ]	[ ]	[ ]	[ ]	[ ]
22.	I can install software or programs on my computer.	[ ]	[ ]	[ ]	[ ]	[ ]
23.	I know what the internet, World Wide Web (WWW) is and its use.	[ ]	[ ]	[ ]	[ ]	[ ]
24.	I incorporate digital tools such as a computer or smart devices such as a tablet or smartphone in my lesson preparation.	[ ]	[ ]	[ ]	[ ]	[ ]
25.	I can troubleshoot basic technical issues that may arise while using new technologies and digital resources in the classroom.	[ ]	[ ]	[ ]	[ ]	[ ]
26.	I can collaborate with other teachers to integrate new technologies and digital resources into the	[ ]	[ ]	[ ]	[ ]	[ ]

SN	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
	curriculum to facilitate teaching and learning.					
27.	I can use technology and digital resources to enhance student engagement and learning.	[ ]	[ ]	[ ]	[ ]	[ ]
28.	I am very comfortable with using various software and apps for teaching.	[ ]	[ ]	[ ]	[ ]	[ ]
29.	I stay current and informed about new technologies and tools that can be used for teaching and learning.	[ ]	[ ]	[ ]	[ ]	[ ]
30.	I have used online collaboration tools like Google Classroom, Microsoft teams, etc. for teaching and learning before.	[ ]	[ ]	[ ]	[ ]	[ ]

Section D: Online Safety Skills

Please select the best response to each of the questions in this section by ticking [✓] in the boxes provided:
Options available: Strongly Disagree (**1**), Disagree (**2**), Neutral (**3**), Agree (**4**), Strongly Agree (**5**)

SN	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
31.	I know how to restrict apps' access to my personal information (location, contact, camera).	[ ]	[ ]	[ ]	[ ]	[ ]
32.	I can recognize and block unwanted emails and phishing messages.	[ ]	[ ]	[ ]	[ ]	[ ]
33.	I can change the privacy settings on my social media posts and profile.	[ ]	[ ]	[ ]	[ ]	[ ]
34.	I know how to create a strong password.	[ ]	[ ]	[ ]	[ ]	[ ]
35.	I have a good understanding of the policies and procedures for reporting online safety incidents.	[ ]	[ ]	[ ]	[ ]	[ ]
36.	I stay current on online safety issues and best practices.	[ ]	[ ]	[ ]	[ ]	[ ]
37.	I encourage open communication and reporting of online safety concerns among students.	[ ]	[ ]	[ ]	[ ]	[ ]
38.	I help students understand the potential consequences	[ ]	[ ]	[ ]	[ ]	[ ]

SN	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
	of their online actions.					
39.	I help students understand the importance of digital footprint and its impact.	[ ]	[ ]	[ ]	[ ]	[ ]
40.	I teach students about online privacy and how to protect their personal information.	[ ]	[ ]	[ ]	[ ]	[ ]
41.	I educate students about online predators, cyberbullying, and other online dangers	[ ]	[ ]	[ ]	[ ]	[ ]
42	I effectively teach students about online safety and the responsible use of technology.	[ ]	[ ]	[ ]	[ ]	[ ]

Section E: Collaboration and Creativity Skills

Please select the best response to each of the questions in this section by ticking [✓] in the boxes provided:
Options available: Strongly Disagree (**1**), Disagree (**2**), Neutral (**3**), Agree (**4**), Strongly Agree (**5**)

SN	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
43.	I actively seek out and participate in collaborative opportunities with other teachers.	[ ]	[ ]	[ ]	[ ]	[ ]
44.	I use technology to facilitate collaboration and communication with other	[ ]	[ ]	[ ]	[ ]	[ ]

SN	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
	teachers.					
45.	I incorporate teamwork and group activities into my lessons.	[ ]	[ ]	[ ]	[ ]	[ ]
46.	I am open to receiving feedback and suggestions from colleagues.	[ ]	[ ]	[ ]	[ ]	[ ]
47.	I am willing to share my own teaching materials and resources with colleagues.	[ ]	[ ]	[ ]	[ ]	[ ]
48.	I am willing to try new teaching methods and strategies suggested by colleagues.	[ ]	[ ]	[ ]	[ ]	[ ]
49.	I actively seek out and participate in professional development opportunities to improve my collaboration skills.	[ ]	[ ]	[ ]	[ ]	[ ]
50.	I use technology to facilitate student collaboration and teamwork.	[ ]	[ ]	[ ]	[ ]	[ ]
51.	I am willing to experiment and take risks in my teaching.	[ ]	[ ]	[ ]	[ ]	[ ]
52.	I actively look for ways to infuse creativity into my teaching and lessons.	[ ]	[ ]	[ ]	[ ]	[ ]
53.	I use technology to facilitate student-led and project-	[ ]	[ ]	[ ]	[ ]	[ ]

SN	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
	based learning.					
54.	I actively seek out and use technology tools that support student creativity and collaboration.	[ ]	[ ]	[ ]	[ ]	[ ]

Section F: Digital Culture

Please select the best response to each of the questions in this section by ticking [✓] in the boxes provided:
Options available: Strongly Disagree (**1**), Disagree (**2**), Neutral (**3**), Agree (**4**), Strongly Agree (**5**)

SN	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
55.	I am familiar with current digital trends and technologies.	[ ]	[ ]	[ ]	[ ]	[ ]
56.	I can integrate digital tools and technologies into my teaching.	[ ]	[ ]	[ ]	[ ]	[ ]
57.	I can use digital resources and technologies to support student learning.	[ ]	[ ]	[ ]	[ ]	[ ]
58.	I can communicate and collaborate effectively using digital tools and	[ ]	[ ]	[ ]	[ ]	[ ]

SN	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
	technologies.					
59.	I can use technology to support student engagement and motivation.	[ ]	[ ]	[ ]	[ ]	[ ]
60.	I can use technology to support student creativity and innovation.	[ ]	[ ]	[ ]	[ ]	[ ]
61.	I am able to use technology to support student-centered learning.	[ ]	[ ]	[ ]	[ ]	[ ]
62.	I can use technology to support student self-direction and autonomy.	[ ]	[ ]	[ ]	[ ]	[ ]
63.	I am able to use technology to support student collaboration and teamwork.	[ ]	[ ]	[ ]	[ ]	[ ]
64.	I can use technology to support student problem-solving and critical thinking.	[ ]	[ ]	[ ]	[ ]	[ ]
65.	I can use technology to	[ ]	[ ]	[ ]	[ ]	[ ]

SN	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
	support student communication and digital literacy.					
66.	I can use technology to support student online safety and digital citizenship.	[ ]	[ ]	[ ]	[ ]	[ ]

Section G: Teachers' preparedness to use new curriculum.

Please select the best response to each of the questions in this section by ticking [✓] in the boxes provided:
Options available: Strongly Disagree (**1**), Disagree (**2**), Neutral (**3**), Agree (**4**), Strongly Agree (**5**)

SN	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
67.	I have an internet connected smart device such as a smartphone that I take with me everywhere I go	[ ]	[ ]	[ ]	[ ]	[ ]
68.	I am competent in using email.	[ ]	[ ]	[ ]	[ ]	[ ]
69.	I incorporate digital resources and materials, such as online videos and e-books, and the use MS-Office applications into my	[ ]	[ ]	[ ]	[ ]	[ ]

SN	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
	lessons					
70.	I can convert the printed content and activities in the curriculum to the digital form using available digital resources	[ ]	[ ]	[ ]	[ ]	[ ]
71.	I can use social media (Whatsapp, Twitter, Instagram) to communicate with my students, parents, and other teachers.	[ ]	[ ]	[ ]	[ ]	[ ]
72.	I can adapt my teaching methods to incorporate new technology and digital resources.	[ ]	[ ]	[ ]	[ ]	[ ]
73.	I am comfortable with trying new technologies and digital resources in my Classroom.	[ ]	[ ]	[ ]	[ ]	[ ]
74.	I can integrate the new curriculum with technology and digital resources in an effective manner.	[ ]	[ ]	[ ]	[ ]	[ ]
75.	I am willing to take professional development opportunities	[ ]	[ ]	[ ]	[ ]	[ ]

SN	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
	related to using new technologies and digital resources in the classroom					
76.	I can seek out and find new technology and digital resources to use in my classroom.	[ ]	[ ]	[ ]	[ ]	[ ]
77.	I can modify and adapt existing lesson plans to incorporate new technology and digital resources.	[ ]	[ ]	[ ]	[ ]	[ ]
78.	I am open to incorporating new and innovative teaching approaches with technology and digital resources to facilitate teaching and learning.	[ ]	[ ]	[ ]	[ ]	[ ]

Thank you.