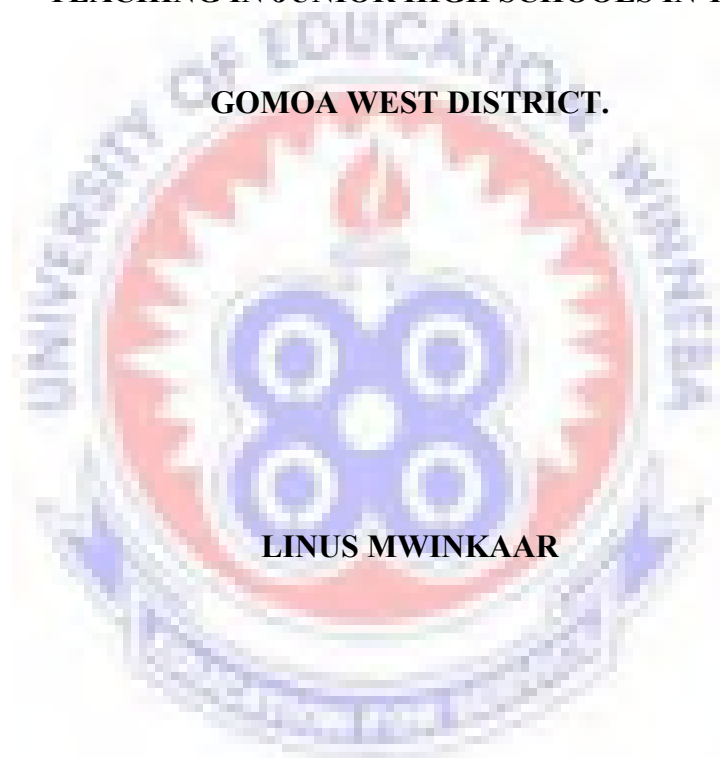


**UNIVERSITY OF EDUCATION, WINNEBA**

**INTEGRATION AND USAGE OF ICT BY SOCIAL STUDIES TEACHERS IN  
TEACHING IN JUNIOR HIGH SCHOOLS IN THE  
GOMOA WEST DISTRICT.**



**LINUS MWINKAAR**

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GOMOA WEST DISTRICT.**

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**LINUS MWINKAAR  
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**A THESIS IN THE DEPARTMENT OF BASIC EDUCATION, FACULTY OF  
EDUCATIONAL STUDIES, SUBMITTED TO THE SCHOOL OF GRADUATE  
STUDIES, UNIVERSITY OF EDUCATION, WINNEBA IN PARTIAL  
FULFULMENT OF THE REQUIREMENT FOR THE AWARD OF MASTER  
OF PHILOSOPHY (BASIC EDUCATION) DEGREE**

**AUGUST, 2018**

## DECLARATION

### STUDENT'S DECLARATION

I, LINUS MWINKAAR declare that this thesis, with the exception of quotations and references contained in published works, which have been identified and acknowledged, is entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

Name of student: LINUS MWINKAAR

Signature: ..... Date: .....

### SUPERVISORS' CERTIFICATION

We hereby certify that the preparation and presentation of the thesis was supervised in accordance with guidelines and supervision of thesis laid down by the University of Education, Winneba.

Principal Supervisor: ROBERT. A. GHANNEY (PhD).

Signature ..... Date: .....

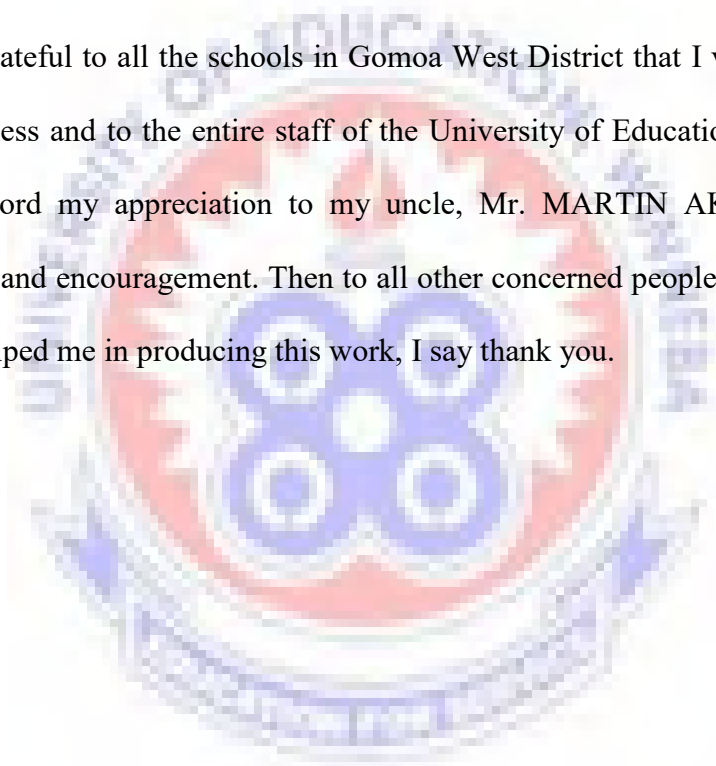
Co- Supervisor: HANS KWEKU ANDERSON (PhD).

Signature ..... Date: .....

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## **DEDICATION**

This work is dedicated to the ALMIGHTY GOD with due reverence to my late father  
MR. ROSARIO AUGUSTINE MWINKAAR, my daughter, ZANETA NUO-ERE  
MWINKAAR and to my entire family.



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## LIST OF ABBREVIATION

<b>CRDD</b>	Curriculum Research and Development Division
<b>GES</b>	Ghana Education Service
<b>ICT</b>	Information and Communication Technology
<b>INSET</b>	In-Service Training
<b>JHS</b>	Junior High School
<b>MEO</b>	Municipal Education Office
<b>MOE</b>	Ministry of Education
<b>NCSS</b>	National Council for Social Studies
<b>P21</b>	Partnership Forum for 21st-Century Skills
<b>PTA</b>	Parent -Teacher Association
<b>TPCK</b>	Technology, Pedagogy, and Content Knowledge
<b>UNESCO</b>	United Nations Education Scientific and Cultural Organization

## ABSTRACT

Research has shown that social studies teachers have been apprehensive about modifying instruction to incorporate technology. The study focused on Social Studies teachers' knowledge and usage of ICT in teaching Social Studies in Junior High Schools in the Gomoa West District of the Central Region of Ghana. The study was hinged on Technology Acceptance Model developed and used concurrent triangulation design within the mixed method approach. Census sampling was used to select all the 77 Social Studies teachers and purposive sampling were used to select 5 out of the 77 for the study. The study used questionnaire, semi-structured interviews and non-participant observations as instruments to collect the data. Descriptive statistics such as frequency and percentages were used to analyze the quantitative data and qualitative data were analyzed thematically. The study's findings showed that greater number of the JHS Social Studies teachers possess knowledge in ICT, have good perception about ICT integration in teaching Social Studies and are willing to use ICT in teaching. However, only few of the teachers integrated ICT in teaching the subject. This was as a result of inadequate computers and other ICT tools, lack of electricity in schools and some of the Social Studies teachers' wrong perception about ICT integration in teaching Social Studies. It is recommended that Social Studies teachers be given regular in-service training; be provided with computers and other ICT tools, by the Gomoa West District Education Office. Head teachers, Circuit Supervisors should encourage, motivate and supervise Social Studies teachers to integrate ICT in teaching Social Studies.



## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.0 Overview**

This chapter discusses the background to the study, statement of the problem, purpose of the study, research objectives, research questions, and significance of the study. The chapter further discusses the delimitation of the study and outline of the study chapters.

#### **1.1 Background to the study**

Traditionally, teaching is simply pouring curricular information to the students. It seems that learning is solely left on the part of the students while neglecting the fact that teaching only matters when learning truly occurs. True learning that is permanent and useful, leads to intelligent action and further learning can arise only out of the experience, interest and concerns of the learner (Shah, 2013). Passive learning, such as lecture, note-taking, busy work, worksheets, and rote memorization is what students dislike about social studies as suggested by Leming, Ellington, & Schug (2006). Children find teaching and learning difficult, it could well be that there is something wrong with the way they are being asked to learn rather than something wrong with their innate capacity for learning. This notion indicates that teaching and learning strategies and methods are major concern of the classroom delivery than the children (Ellington, 2006).

In the pre-technology education context, the teacher is the sender or the source, the educational material is the information or message, and the student is the receiver of the information. In terms of the delivery medium, the educator can deliver the message via the “chalk-and-talk” method and overhead projector (OHP) transparencies. This directed instruction model has its foundations embedded in the behavioral learning

perspective (Skinner, 1938) and it is a popular technique, which has been used for decades as an educational strategy in all institutions of learning. The teacher controls the instructional process; the content is delivered to the entire class and the teacher tends to emphasize factual knowledge. In other words, the teacher delivers the lecture content and the students listen to the lecture. Thus, the learning mode tends to be passive and the learners play little part in their learning process (Orlich, Harder, Callahan, & Gibson, 1998).

Existing teaching learning activities and delivery system are unsatisfactory and are not suitable for the age of 21<sup>st</sup> century (Shah, 2016). The Twenty-first-century students are unique, especially with regard to technology. Most teachers are considered digital immigrants; however, their students' are digital natives. Bennett, Maton, & Kervin (2008) explained that today's students, or the next generation, are immersed in technology; they have technical skills and learning styles that are not often accommodated with current instructional methodologies.

The importance of technology use in education has been widely acknowledged. Many researchers have posited that technology use integrated with relevant teaching methods improves student learning (Hastings & Tracey, 2005; Kozma, 2003). Researchers report that technology cannot only provide authentic, engaging, and collaborative learning environments but also can enable students to learn at any time with peers outside of classrooms (Kozma, 2003). However, to realize fully the benefits of technology in our education system and provide authentic learning experiences, educators need to use technology effectively in their practice. Technology has the potential to move assessment from disjointed separate measures of student progress to an integrated system of assessments and personalized instruction to meet the needs of

the learner (U.S. Department of Education Office, 2010). It can integrate more fully student classroom experiences, homework assignments, and formative and summative assessments, all of which are tied closely to academic standards (U.S. Department of Education, 2010). To maximize the impact of the role of technology in the 21st-century skills development, the Partnership Forum for 21st-Century Skills (P21) confirms, “today no organization can achieve results without incorporating technology into every aspect of its everyday practices. It is time for schools to maximize the impact of technology as well” (P21, 2008c:2). Information and Communication Technology has revolutionized the way people work today and are now transforming education systems. As a result, if schools train children in yesterday’s skills and technologies they may not be effective and fit in tomorrow’s world (Watson, 2001).

Technological advances have affected many areas of our lives: the way we communicate, collaborate, learn, and of course, teach. Thus, it opens up huge opportunities for the individual in teaching, assessment, planning and administration and in engaging parents and the wider community. Research shows that technology can help to: motivate learners and keep them engaged in learning, improve attainment levels and raise standards, personalize learning and give learners a voice, make difficult and abstract concepts easier to explore, save time and be more efficient, open up dialogue with parents and extend learning, make learners partners in their formal learning, and reach the hard-to-reach. Along with that, those advances necessitated an expansion of our vocabulary, producing definitions such as digital natives, digital immigrants, and, the topic of this post “21st-century teacher.” Technology developments, especially information and communication technology (ICT) and openness in its utilization are two important phenomena predicted will be the main characteristics and have implications for changing 21st century learning paradigm. It has also provided a social



and human infrastructure for teachers and students to improve collaboration, interaction, and participation in their learning activities, and support them to create constructive learning environments (Chen, 2011).

Policymakers widely accept that access to information and communication technology (ICT) in education can help individuals to compete in a global economy by creating a skilled work force and facilitating social mobility. They emphasized that ICT in education has a multiplier effect throughout the education system, by enhancing learning and providing students with new sets of skills (UNESCO, 2014). Today, information and communications technologies (ICTs) infiltrate classrooms around the world at an exceedingly rapid pace. In the wake of this influx, educators face growing challenges as they teach a much “wired” and more “wireless” generation of students using technology that is evolving every day (Clark, cited in UNESCO, 2014). It is believed that ICT can help to bring abstract concepts to life using images, sounds, movement, animations and simulations (Clark, cited in UNESCO 2014).

Ghana’s Education Reforms launched in June 2007 introduced Computer literacy not only as a new subject, but also as a tool to enhance teaching and learning (Agyei, 2013). The Ministry of Education, Ghana (2008), believed that the emergence of Information and Communications Technologies (ICTs) revealed it is a potential factor for economic growth and social development. Today, ICT is changing the way people work and transforming education systems. The deployment of ICT into Education will result in the creation of new possibilities for learners and teachers to engage in new ways of information acquisition and analysis. ICT will enhance access to education and improve the quality of education delivery on equitable basis. Further that, it is the government’s desire that through the deployment of ICT in Education, the culture and practice of

traditional memory-based learning will be transformed to education that stimulates thinking and creativity necessary to meet the challenges of the 21st Century. The Ministry of Education, Ghana (2008), therefore, saw ICT as a means. The key role that Information and Communication Technologies (ICTs) can play in widening access to and improving the quality of education in all levels in Ghana, continues to be recognized as a key priority area. Important elements of quality education include literacy education, facilitating education delivery and training at all levels, opening opportunities for content creation and open sharing to expand knowledge resources. The 21st century educator looks forward to the future. They are aware of the ever-changing trends in technology and are in tune with what the future may bring to education (UNESCO, 2014). A good 21st century teacher is aware of the career opportunities that will be in the coming years for his or her students, and is always advocating towards forward thinking and planning to ensure that students will not be left behind. Lastly, the 21st century educator must use teaching strategies to ensure that the focus in education is on preparing today's children for the future of where they will live and where they will work, not for our current world (UNESCO, 2014).

Social studies is regarded by many students as boring and dry (Chiodo & Byford, 2004). The use of only one teaching style, day after day, denies students the opportunity of learning via a variety of teaching techniques (Siler, as cited in Russell & Waters, 2010). According to Pellegrino and Russell (2008), students are aware of the lack of challenging content and mundane methodologies utilized in social studies classes and so desire a more engaging curriculum. Social studies educators must teach with and about the latest technology to give their students the knowledge, skills, and attitudes required to be able to assume 'the office of citizen (NCSS, 2013). For example, with the rising use of the Internet and the explosion in data collection, processing, and

storage capabilities, there is a more pressing need for social studies educators to teach students how to find, sift, process, and analyze data and make meaning of it all.

The NCSS (2013) indicates that the primary purpose of social studies is to help the youth become responsible citizens who are capable of making informed and reasoned decisions for the good of society. For this purpose, students need to understand a vast domain of knowledge and have the skills to think critically, engaged in problem-solving, collaborate, and act conscientiously in addressing complex issues. This means that teachers need to learn how to use innovative approaches to engage students as thinkers and problem solvers so that students may be successful global citizens and leaders of the twenty-first century. Designing an environment where students have the opportunity to learn and practice these skills while exploring social studies content can be challenging, but not impossible. A key component is the essential role educational technology and twenty-first century skills have in facilitating teaching and learning in social studies.

Berson (2000) has argued that, there has been a shaky relationship between social studies and technology. While some educators have been fascinated by the potential of technology to enhance teaching and learning, many schools have lagged behind in assimilating technology into instruction. In a document “A Vision of Powerful Teaching and Learning in the Social Studies: Building Social Understanding and Civic Efficacy,” National Council for the Social Studies, NCSS (2008) reiterated that the Social Studies would be “powerful” if the students can;

(1) acquire “meaningful” skills through the use of the 21<sup>st</sup> century technology wisely, which help them to grow and thrive in the world evolving constantly and changing rapidly; and

(2) gain an “integrative” Social Studies subject matter using technology effectively. Specifically, with respect to Social Studies.

Lee (2008) has provided a set of guidelines for effectively integrating technological pedagogical content knowledge (TPCK) into a social studies context. These guidelines include the following:

- Locating and adapting digital resources for use in the classroom.
- Facilitating students’ work in non-linear environments.
- Working to develop critical media literacy skills among students.
- Providing students with opportunities to utilize the presentational capabilities of the Web to motivate and encourage students.
- Using the Internet to extend collaboration and communication among students.
- Extending and promoting active and authentic forms of human interaction and technology enabled social networks.

To achieve the desired gains with technology, social studies methods courses must not focus only on making teachers proficient at using technology, but must promote strategies to integrate technology to enhance teaching and learning (Cantu, 2000). Technology rich instruction models and effective use, explores the barriers and benefits of technology integration (Keiper, Harwood, & Larson, 2000), and thereby surmounts the traditional absence of technology in methods courses (Rose & Winterfeldt, 1998). Research showed that computer and the Internet supported teaching strategies have crucial roles facilitating development of students’ critical thinking, problem solving and decision making skills (Adiguzel & Akpınar, 2001, Berson, 1996; Rice & Wilson, 1999;). Thus, the purpose of this research is to explore Social Studies teachers’

integration and usage of ICT in teaching social studies in the Gomoa West District of the Central region of Ghana.

## **1.2 Statement of the problem**

Social Studies' integrative nature, its exploration of the human experience across time and place, and its commitment to readying youth for life in a democratic society within a global context means the field is well suited to enable youth learn with and about technology (National Council for the Social Studies, 2013).

Technological change has proven one of the few constants of the early 21st century, providing social studies educators with the challenge and opportunity of preparing digital citizens in a global setting. This requires rethinking the type of social studies learning necessary in the 21st century (Pellegrino & Hilton, 2012).

One of the major purposes of social studies is to promote effective citizens who possess the critical thinking and decision making skills to function in a democratic society. Thus, reflective inquiry, problem solving and decision making skills are considered essential for the contemporary social studies education (Berson, 1996).

Research shows that computer and Internet supported teaching strategies have crucial roles in facilitating the development of students' critical thinking, problem solving and decision making skills (Berson, 1996; Rice & Wilson, 1999). In this sense, social studies teachers should be more aware of the changes technology has brought to modern society and try to reflect this change in their own classrooms (Berson, 1996). There is the potential for technology to be fostered as a tool that overcomes the traditional isolation of the classroom setting (Braun, 1997), provides access to expansive resources and improves overall productivity (Becker, Ravitz, & Wong, 1999).

Unfortunately, social studies curricula have not been largely affected by this technology change and technology's unique role in the enhancement of social studies education is not widely recognized (Martorella, 1997; White, 1997; Whitworth & Berson, 2003). Technology has typically been assimilated into existing roles and functions of social studies instruction, and little in the way of transformations of teaching and learning occurred during the formative period of its use (Cuban, Kirkpatrick, & Peck, 2001).

Similar to Becker's finding, other research has shown that social studies teachers lag behind other subjects' teachers in the adoption of innovative teaching methods provided by technology and approaches related with technology (Anderson & Becker, 2001; Atkins & Vasu, 2000; Dawson, Bull, & Swain, 2000; Education Testing Service, 1997; Office of Technology Assessment, 1995). Thus, social studies educators confront a digital divide between the realities of their classrooms and their students' world.

Shaver (1999) expressed doubt that technology will ever incite instructional reform in the social studies, and Pahl (1996) noted that social studies educators have been apprehensive about modifying instruction to incorporate technology. This lingering apprehension has led some researchers to conclude that social studies have not appreciably changed as a result of technology despite anecdotal assurances of substantial progress over time (Diem, 2002; Glenn, 2002; Martorella, 1997; White, 1997).

Studies on Social Studies teachers' knowledge, perception and use of ICT in teaching Social Studies in Senior High Schools, Colleges of Education and Universities have been conducted in other places in Ghana but there appeared to be no study conducted on Social Studies teachers' integration and usage of ICT in teaching in Junior High

Schools in the Gomoa West District, hence the study in the Gomoa West District of the Central Region of Ghana.

### **1.3 Purpose of the study**

The study sought to explore Social Studies teachers' integration and usage of ICT in teaching in Junior High Schools in the Gomoa West district of the Central region of Ghana.

### **1.4 Research objectives**

The study objectives were to:

1. Examine Social Studies teachers' knowledge of ICT in teaching Social Studies in JHS
2. Explore the perception of social studies teachers regarding the use of ICT in teaching Social Studies in JHS of Gomoa West district.
3. Find how Social Studies teachers' use of ICT in Social Studies lessons in JHS of Gomoa West district.
4. Identify the challenges of ICT integration in teaching Social Studies in JHS in Gomoa West district.

### **1.5 Research questions**

1. What is the knowledge of JHS Social Studies teachers in ICT in the Gomoa West district?
2. How do JHS Social Studies teachers in Gomoa West district perceive the use of ICT in teaching Social Studies?
3. How do JHS Social Studies teachers use ICT in teaching of Social Studies in Gomoa West District?

4. What challenges are associated with the use of ICT in teaching Social Studies in JHS of Gomoa West district?

### **1.6 Significance of the study**

The results of this study will to inform the Gomoa West District Education Directorate and other stakeholders in the District on the ICT knowledge of Social Studies teachers and their use of ICT in teaching Social Studies. This is likely to trigger intensive organization of In-service Education and Training (INSET) programs for Social Studies teachers in the district.

The findings of the study will assist the Curriculum Research and Development Division of the Ghana Education Service (CRDD) and serve as a springboard to conduct holistic evaluation of and how they implement the innovations in the classroom. It would add to the body of literature of Social Studies teachers' knowledge and use of ICT in teaching Social Studies in Ghana.

The findings would also be of significance to Social Studies teachers and other teachers within the district, as this would rekindle the interest, development and use the 21<sup>st</sup> century skill method of teaching in order to meet the needs of the 21<sup>st</sup> century learner.

### **1.7 Delimitations of the Study**

The study was confined to Junior High School Social Studies teachers in Gomoa West of the Central Region of Ghana. Also, the study was delimited to Social Studies teachers' integration and usage of ICT in teaching in Junior High Schools in the Gomoa West district of the Central Region of Ghana. The research was done on all the junior high schools Social Studies in the district.



## **1.8 Limitations of the Study**

Although this research was carefully prepared, there were some limitations. The population of the study is small, only seventy-seven JHS Social Studies teachers were used.

## **1.9 Outline of the Study chapters**

This study was divided into five major chapters. Chapter one (1) discussed the introduction, the background to the study, statement of the problem, purpose of the study, research objectives, research questions, significance of the study, and delimitation of the study.

Chapter Two dealt with literature review. It reviewed literature from books, journals, published theses, newsletters, reports and websites on theoretical framework, 21<sup>st</sup> Century teaching and learning, Technology Integration, Educational Technology, benefits of ICT use in education, limitations of ICT use in education, the Technology, Pedagogical and Content Knowledge (TPACK) framework, Social Studies and ICT and lastly, resources for Social Studies lessons.

Chapter Three was on methodology. It explained the research design used in the study. The chapter further explained the study area in terms of the district. It also spelt out the population, sample size, sampling methods, instruments for data collection and how the data was analyzed, ethical considerations and limitation of the study.

Chapter Four dealt with presentation, analysis and interpretation of findings. The findings were presented, analyzed, interpreted and discussed in descriptive statistics to include; frequencies, percentages, mean and standard deviation. This was done in relation to the research objectives and questions. These findings were on Social Studies

teachers' knowledge of ICT in teaching Social Studies in JHS, the perception of social studies teachers regarding the use of ICT in teaching Social Studies in JHS of Gomoa West district, Social Studies teachers' use of ICT in Social Studies lessons in JHS of Gomoa West district and the challenges of ICT integration in teaching Social Studies in JHS in Gomoa West district.

Chapter Five focused on summary, conclusion and recommendations. The summary of the main findings dwelt on Social Studies teachers' knowledge of ICT in teaching Social Studies in JHS, the perception of social studies teachers regarding the use of ICT in teaching Social Studies in JHS of Gomoa West district, Social Studies teachers' use of ICT in Social Studies lessons in JHS of Gomoa West district and the challenges of ICT integration in teaching Social Studies in JHS in Gomoa West district.

Conclusions were drawn in accordance with the findings of the study. Based on the findings and conclusions drawn, the chapter made recommendations to the various stakeholders in the Gomoa West district and Ghana as a whole.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Overview**

This chapter provides a comprehensive literature review on the following sub-heading: theoretical framework, 21<sup>st</sup> Century teaching and learning, Technology Integration, Educational Technology, benefits of ICT use in education, limitations of ICT use in education, the Technology, Pedagogical and Content Knowledge (TPACK) framework, Social Studies and ICT and lastly, resources for Social Studies lessons.

#### **2.1 Theoretical Framework.**

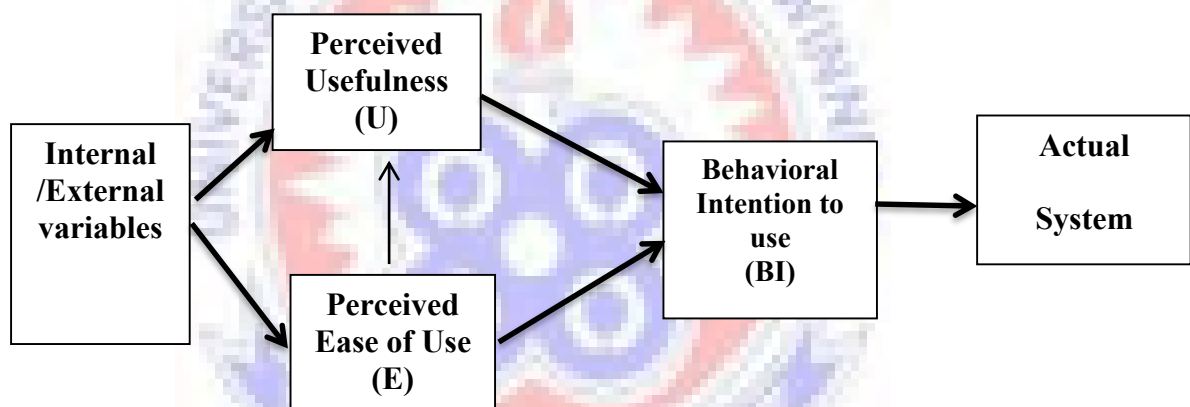
##### **2.1.1 Technology Acceptance Model (TAM)**

Technology Acceptance Model as developed by Davis (1989) is one of the most popular research models to predict use and acceptance of information systems and technology by individual users. TAM has been widely studied and verified by different studies that examine the individual technology acceptance behavior in different information systems constructs. In TAM model, there are two factors that influence the use of technology, thus, perceived usefulness and perceived ease of use of the technology. Davis defined perceived usefulness as the prospective user's subjective probability that using a specific application system will enhance his or her job or life performance.

Perceived ease of use (EOU) can be defined as the degree to which the prospective user expects the target system to be effort free. According to TAM, ease of use and perceived usefulness are the most important determinants of actual system use. These two factors are influenced by External and Internal variables. Internal variables consist of factors such as the attitude of the user, their pedagogical beliefs towards, and level of competency. The authors confirmed that a positive attitude towards technology will

likely motivate a user to utilize the technology. The study noted that the use of technology could be predicted by competency level, meaning that having the skills and knowledge to use a system will affect its utilization. On the other hand, external variables include those external barriers faced by users during utilization. Such factors include organizational barriers, technological barriers, and social barriers. Similarly, demographical factors such as gender, computer self-efficacy, and levels of training (competency) are also used to predict technological usage. Behavioral intention is the measure of the likelihood of a person employing the application.

**Figure 2.1. Technological Acceptance Model (TAM).**



Source: Davis (1989)

According to TAM, behavioral intention (BI) defines the actual use of a given IS system and therefore determines technology acceptance. Attitude towards use (A) and perceived usefulness (U) jointly influence BI (A). BI is also indirectly affected by perceived ease of use (E). A is directly affected by both U and E, while U is directly influenced by E. Furthermore, TAM theorizes that perceived usefulness and perceived ease of use are affected by external variables. Thus, U and E mediate the effect of external variables on user's attitude and behavioral intention, and, therefore, the actual system use.

Technology Acceptance Model is one of the most popular theories that is used widely to explain Information System usage. So many studies have been conducted which had led to the changes in the originally proposed model. A new model called combined TAM-TPB model which integrated the Technology acceptance model and theory of planned behavior was proposed by Taylor and Todd (1995). Venkatesh, Viswanath, Davis & Fred (2000) proposed a new version of TAM called TAM 2 which added new variables to the existing model. Venkatesh, Viswanath, Morris, Michael, Davis, Gordon, Davis, Fred (2003) in a study published in MIS quarterly proposed the Unified Theory of Acceptance and Use of Technology (UTAUT) Model.

The various studies conducted by researchers have tried to modify the TAM by adding new variables to it. Agarwal and Prasad (1998) modified TAM by adding the construct of compatibility in the Technology Acceptance Model. Moon and Kim (2001) had added a new variable playfulness factors to study acceptance of the World Wide Web. Lim & Chai (2004) proposed to modify TAM by adding variables like experience, self-efficacy, perceived risk and social influence. Another study done by Agarwal and Karahanna added cognitive absorption, playfulness and self-efficacy to the TAM model. Chau (1996) in a study reviewed TAM by including two types of perceived usefulness: near-term and long-term. Van der Heijden (2000) after analyzing the individual acceptance and usage of the website added two new constructs to TAM: perceived entertainment value and perceived presentation attractiveness. Chau & Hu (2001) combined the factor of peer Influence with Technology Acceptance Model.

TAM has been used by researchers worldwide to understand the acceptance of different types of information systems. Shafeek (2011) in a study tried to evaluate the acceptance of eLearning systems by teachers by using TAM. Zhou et al. had developed a new

model based on TAM called online shopping acceptance model (OSAM) to study online shopping behavior. Pavlou (2003) developed a model to predict the acceptance of e-commerce by adding new variables trust and perceived risk.

The focus of this study is on Social Studies teachers' knowledge and usage of ICT in teaching Social Studies. For Social Studies teachers to use ICT in teaching Social Studies, they would be influenced by their perceived usefulness of ICT and their perceived easy use of ICT. Thus, do they see the need and importance of using ICT to teach Social Studies? And do they find it easy to use ICT to teach Social Studies? The ease of use of ICT in teaching Social Studies could be influenced by their level of knowledge in ICT.

## **2.2 The 21<sup>st</sup> Century Teaching and Learning**

Over the last decade, a growing number of experts, not only from field of education but also from economics, politics, international relations and so forth, around the world has reached a consensus on a new set of skills that are needed to be able to survive in the 21st century and on providing learners alternative learning opportunities to learn more than just reading, writing, and arithmetic. The World Bank Group (2003) as well as Partnership for 21st Century Skills (2009) suggested that learners need to acquire critical thinking, effective communication, team work, continuous learning, and use of technology skills in order to help the global knowledge economy and be productive world citizens.

Additionally, experts, such as Kozma (2005), expressed importance of a deeper understanding of core school subject including especially science, mathematics, and technology and innovativeness in every aspect of life. On the other hand, helping learners acquire these skills requires a different instructional strategy than the

traditional school approach that reflects not present day conditions but the past. Problem-based, technology-enhanced, authentic learning opportunities are considered as today's instructional strategies (Jonassen, Cernusca, Ionas, 2007).

Kozma (2005) provided a list of significant outcomes of use of ICT in education, including improving school attendance, deepening conceptual understanding in core school subjects, promoting wider involvement in community developments. Similarly, SRI International (2006) noted that enabling children to learn to use ICTs and create optimal opportunities for children to develop a fuller set of 21st-century skills are the two main ways that promote 21st-century learning.

In the 21<sup>st</sup> century classroom, teachers are partaking in the traditional role of knowledge transmitters less frequently. Instead, teachers around the world are taking a skills-based approach to education to prepare students to build careers and be active citizens after completing school (Sahlberg, 2010). Thus, it is important to minimize any gap between knowledge and skills learned in school and knowledge and skills required by careers in the future. In undertaking this process, all students are unique, requiring a differentiated learning approach for their progress in relation to the curriculum, as well as their knowledge and skills relevant to the 21<sup>st</sup> century. To effectively engage and teach generation Z students, teachers will help the educational system meet this requirement. The school systems must be outfitted with a prerequisite of ICT resources, and curricula must be designed to promote a collaborative learner-centered environment to which students will relate and respond.

Developing 21<sup>st</sup> century skills and competencies in schools demands pedagogical shifts away from didactic approaches together with the embedding of ICT. The twenty first century skills, sometimes referred to as 21<sup>st</sup> century competencies, is a complex term

which encompasses skills that may be required to be successful in learning, in the workplace and to live effectively in the 21<sup>st</sup> century (P21, 2009; Binkley, Erstad, Herman, Raizen, Ripley, Miller-Ricci et al., 2012). Although frameworks and definitions of 21st century skills exist (P21 & Binkley et al), most refer to the same list of competences which includes collaboration, communication, ICT, creativity, critical thinking and problem solving (Voogt, Pareja & Roblin, 2012). Voogt & Roblin (2012) suggested that as well as supporting teachers to change their pedagogy they also need to understand better how ICT can facilitate 21<sup>st</sup> century learning. As the development of 21st century skills can be enhanced through the use of ICT (Ananiadou & Claro, 2009), it is argued that their development should be cross-curricular, demanding changes in pedagogical practices (Voogt & Roblin, 2012).

The role of Information-Communication Technologies in the 21<sup>st</sup> century classroom is increasing in prevalence and importance as educators understand its value and adjust to its influence. Technology is advancing at an exponential rate, and as I previously stated, people with ICT skills will continue to be in high demand (Mayer-Schönberger & Cukier, 2013). Research published by Fullan & Langworthy (2014) highlights the strong connection between technology and educational reform. From their perspective, technology is the tool that will help teachers and students create new partnerships and unleash deeper learning, in which authentic learning tasks allow students to develop competencies, master content knowledge, and apply learning outcomes to contexts beyond the classroom. National Research Council (2012) also agrees that ICT has become an important tool for supporting communication both in education and also in a wide range of social practices making it easier to reach a wide audience and communicate at a distance, faster and more ubiquitously. Thus, in this sense, teachers are not implementing technology in their classrooms distinctly from pedagogy or



curriculum. The technology is a tool and resource working ubiquitously with the construction of knowledge and development of 21<sup>st</sup> century competencies.

The students in the 21<sup>st</sup> century have grown up in a fast-paced digital world, and easily tune out of the traditional lecture based classroom. Researching, communicating and even online job application across the world via computer or cell phone is a snap for them. Social networking sites (SNS) are only as good as the content their users share (Burke, Marlow & Lento, 2009).

Twenty first century learners must possess self-direction and an ability to collaborate with individuals, groups, and machines (McCoog, 2008). Students need to have well-developed communication skills in order to collaborate and work in teams. Collaboration is one of the skills clearly demanded by the twenty-first century workplace, particularly with the shift away from manual work (Dede, 2010). Team working is increasingly being facilitated by digital tools, which allow geographically dispersed team members to collaborate.

Education in the 21<sup>st</sup> century highlights globalization and internationalization. Any advancement of technology presents theoretical constructs and realistic insights in the development and enhancement of knowledge, skills, and attitudes among students and teachers (Abao, Dayagbil, & Boholano, 2015). Eijkman as cited in Abao et al (2015) posited that with social media, educators can now much more readily connect their students not just in their own localities, their places of learning, and to each other, but also to a huge and ever expanding diversity of social, cultural, political networks and therefore to multiple ways of being knowing and communicating. As revealed by Boholano (2013), ICT does not automatically improve teaching and learning, teachers have to do something in order to motivate learners. The improvement of the teaching

learning process depends on the strategies used by the teacher. Technology will help teachers facilitate effective teaching.

In summary, research has shown that, in this 21<sup>st</sup> century we live now, technology permeates every aspect of our lives, and one cannot simply avoid technology in whatever we do. This includes the educational sector of every country. Our 21<sup>st</sup> century students are born into technology and are technological natives. In order to help students, develop the right skills and attitudes for the 21<sup>st</sup> century world, teachers need to integrate ICT in teaching the various subjects to improve teaching and learning in the classroom.

### **2.3 Technology Integration in education**

Technology integration serves as the effective implementation of educational technology to accomplish intended learning outcomes. We consider educational technology to be any tool, piece of equipment, or device electronic or mechanical that can be used to help students accomplish specified learning goals (Davies, Sprague, & New, 2008). Educational technology includes both instructional technologies, which focus on technologies teachers employ to provide instruction, and learning technologies, which focus on technologies learners use to accomplish specific learning objectives.

Technology integration is the use of technology tools in general content areas in education in order to allow students to apply computer and technology skills to learning and problem-solving. Generally speaking, the curriculum drives the use of technology and not vice versa (Dockstader, 2008). Technology integration is defined as the use of technology to enhance and support the educational environment. Technology integration in the classroom can also support classroom instruction by creating

opportunities for students to complete assignments on the computer rather than with normal pencil and paper.

National Center for Education Statistics (2003) sees Technology integration as the incorporation of technology resources and technology-based practices into the daily routines, work, and management of schools. Technology resources are computers and specialized software, network-based communication systems, and other equipment and infrastructure. Practices include collaborative work and communication, Internet-based research, remote access to instrumentation, network-based transmission and retrieval of data, and other methods. This definition is not in itself sufficient to describe successful integration: it is important that integration be routine, seamless, and both efficient and effective in supporting school goals and purposes.

The adoption and integration of technologies are a challenging and complex process for schools, particularly where there is limited previous experience in the use of ICTs to support teaching and learning. They further maintained that at many schools that have access to ICTs, the focus has tended to be on learning about ICTs rather than learning with or through the use of ICTs (Wilson-Strydom, Thomson & Hodgkinson-Williams, 2005).

International Society for Technology in Education (2014) argued that Technology integration is the use of technology resources like computers, mobile devices like smartphones and tablets, digital cameras, social media platforms and networks, software applications, the Internet, in daily classroom practices, and in the management of a school. Successful technology integration is achieved when the use of technology is:

- Routine and transparent
- Accessible and readily available for the task at hand
- Supporting the curricular goals, and helping the students to effectively reach their goals

Effective integration of technology is achieved when students are able to select technology tools to help them obtain information in a timely manner, analyze and synthesize the information, and present it professionally. The technology should become an integral part of how the classroom functions as accessible as all other classroom tools (International Society for Technology in Education, 2014).

International Society for Technology in Education (2014) further argued that when effectively integrated into the curriculum, technology tools can extend learning in powerful ways. These tools can provide students and teachers with:

- Access to up-to-date, primary source material
- Methods of collecting/recording data
- Ways to collaborate with students, teachers, and experts around the world
- Opportunities for expressing understanding via multimedia
- Learning that is relevant and assessment that is authentic
- Training for publishing and presenting their new knowledge

Curriculum integration with the use of technology involves the infusion of technology as a tool to enhance the learning in a content area or multidisciplinary setting. Effective integration of technology is achieved when students are able to select technology tools to help them obtain information in a timely manner, analyze and synthesize the information, and present it professionally to an authentic audience. The technology should become an integral part of how the classroom functions as accessible as all other

classroom tools. The focus in each lesson or unit is the curriculum outcome, not the technology (National Center for Education Statistics, 2003).

Integrating technology with standard curriculum can not only give students a sense of power, but also allows for more advanced learning among broad topics. However, these technologies require infrastructure, continual maintenance and repair one determining element, among many, in how these technologies can be used for curricula purposes and whether or not they will be successful (Jackson; Pompe & Krieschok, 2011). Examples of the infrastructure required to operate and support technology integration in schools include at the basic level electricity, Internet service providers, routers, modems, and personnel to maintain the network, beyond the initial cost of the hardware and software (Grinter & Edwards, 2005).

Hertz (2013) shared four levels of classroom technology integration she has observed in schools, namely:

1. Sparse: Technology is rarely used or available. Students rarely use technology to complete assignments or projects.
2. Basic: Technology is used or available occasionally/often in a lab rather than the classroom. Students are comfortable with one or two tools and sometimes use these tools to create projects that show understanding of content.
3. Comfortable: Technology is used in the classroom on a fairly regular basis. Students are comfortable with a variety of tools and often use these tools to create projects that show understanding of content.
4. Seamless: Students employ technology daily in the classroom using a variety of tools to complete assignments and create projects that show a deep understanding of content.

Despite the dramatic differences in resources and abilities from classroom to classroom, school to school, and district to district, it is possible to integrate technology tools in ways that can impact engagement and learning for all students.

Technology integration can in some instances be problematic. A high ratio of students to technological device has been shown to impede or slow learning and task completion (Yu, 2013). In some, instances dyadic peer interaction centered on integrated technology has proven to develop a more cooperative sense of social relations (Mehan, 1989). Success or failure of technology integration is largely dependent on factors beyond the technology. The availability of appropriate software for the technology being integrated is also problematic in terms of software accessibility to students and educators (Yu, 2013). Another issue identified with technology integration is the lack of long-range planning for these tools within the educative districts they are being used (Anderson, 1996).

According to findings from four Meta analyses, blending technology with face-to-face teacher time generally produces better outcomes than face-to-face or online learning alone. Research is currently limited on the specific features of technology integration that improve learning. Meanwhile, the marketplace of learning technologies continues to grow and vary widely in content, quality, implementation, and context of use (Vega, 2013).

From the discussion above, it is observed that Technology integration involves the use of ICT tools and other forms of technology in the classroom to facilitate and improve teaching and learning. Technology can be integrated in different forms and at different level of education. It is observed that technology integration brings a lot of advantages to teaching and learning, however, it could also be limited by the inadequacy or absence

of technological equipment, absence of electricity in schools and inadequate technological knowledge on the part of teachers.

## **2.4 Educational Technology**

There is no single term for educational technology. Different countries use different terms and synonyms as educational technology, educational equipment, AV resources, and the technology of teaching and so on (Stošić, 2015).

Terminological differences mostly occur on the grounds of the approach to the technical characteristics and the use of modern appliances, and not their actual application in teaching i.e. their actual pedagogical application. For this reason, there are different opinions among teachers in the field of social and technical sciences. Therefore, the application of educational technology requires knowledge from several areas: pedagogy, psychology, didactics, computer sciences, informatics and so on (Stošić, 2015). Because of this diversity, there are also different perceptions of educational technology, where every author defines the concept of educational technology, according to their needs. Educational technology is still not being applied sufficiently, mostly for reasons of lack of school equipment necessary resources and insufficient qualification of teachers for the implementation of these funds.

Stošić (2015) argued that, Educational technology has three domains of use:

- Technology as a tutor (computer gives instructions and guides the user),
- Technology as a teaching tool and
- Technology as a learning tool.

Depending on the use and benefits, the research by Lowther, Inan, Ross & Strahl (2012) suggested that education technology has not yet taken its place, in spite of their recommendations.

Pedagoški (1996) opined that, Educational technology is a systematic and organized process of applying modern technology to improve the quality of education (efficiency, optimal, true, and so on). It is a systematic way of conceptualizing the execution and evaluation of the educational process, that is, learning and teaching and help with the application of modern educational teaching techniques. It includes instructional materials, methods and organization of work and relationships, i.e. the behavior of all participants in the educational process. The term “teaching resources” is commonly used, although they are not synonymous.

The Association for Educational Communications and Technology (1977), the professional society for ET, defined educational technology as the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources. As a field, educational technology emphasizes communication skills and approaches to teaching and learning through the judicious use and integration of diverse media. Scholars in the field examine the uses of innovative media and technologies for education, examining all aspects from direct student learning to management and impacts on institutions. As in all forms of applied technology, the field studies how theoretical knowledge and scientific principles can be applied to problems that arise in a social context. Practitioners in educational technology seek new and effective ways of organizing the teaching and learning process through the best possible application of technological



developments. These activities rely upon a body of knowledge for successful and ethical implementation, rather than routine tasks or isolated technical skills.

Robinson; Molendal & Rezabek (2008) argued that, Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources. Educational technology is the use of both physical hardware and educational theoretic. It encompasses several domains including learning theory, computer-based training, online learning, and where mobile technologies are used, m-learning.

As such, educational technology refers to all valid and reliable applied education sciences, such as equipment, as well as processes and procedures that are derived from scientific research, and in a given context may refer to theoretical, algorithmic or heuristic processes: it does not necessarily imply physical technology (Robinson; Molendal & Rezabek, 2008). They further expressed that Educational technology is the process of integrating technology into education in a positive manner that promotes a more diverse learning environment and a way for students to learn how to use technology as well as their common assignments. Given this definition, educational technology is an inclusive term for both the material tools and the theoretical foundations for supporting learning and teaching. Educational technology is not restricted to high technology. Education technology is anything that enhances classroom learning in the utilization of blended, face to face, or online learning.

Allyn & Bacon (2010) argued that if educational technology is viewed as both processes and tools, it is important to begin by examining four historical perspectives on these processes and tools, all of which have helped shape current practices in the field.

**Perspective 1: Educational technology as media and audiovisual communications.**

This perspective grew out of the audiovisual (AV) movement in the 1930s, when higher education instructors proposed that media such as slides and films delivered information in more concrete, and therefore more effective, ways than lectures and books did. This movement produced audiovisual communications or the "branch of educational theory and practice concerned primarily with the design and use of messages that control the learning process" (Saettler, 1990, p. 9). The view of educational technology as media to deliver information continues to dominate areas of education and the communications industry. As late as 1986, the National Task Force on Educational Technology equated educational technology with media, treating computers simply as another medium (Saettler, 1990).

**Perspective 2: Educational technology as instructional systems and instructional design.**

This view originated with post-World War II military and industrial trainers who were faced with the problem of preparing large numbers of personnel quickly. Based on efficiency studies and learning theories from educational psychology, they advocated using more planned systematic approaches to developing uniform, effective materials and training procedures. Their view was based on the belief that both human (teachers) and nonhuman (media) resources could be part of an efficient system for addressing any instructional need. Therefore, they equated "educational technology" with "educational problem solutions." As these training personnel began to work with both university research and development projects and K-12 schools, they also influenced practices in both of these areas. Behaviorist theories initially dominated and cognitive theories later gained precedence. In the 1990s, popular learning theories criticized systems approaches as being too rigid to foster some kinds of learning

particularly higher order ones. Thus, the current view of educational technology as instructional systems is continually evolving.

**Perspective 3: Educational technology as vocational training.** Also known as technology education, this perspective originated with industry trainers and vocational educators in the 1980s. They believed (1) that an important function of school learning is to prepare students for the world of work in which they will use technology and (2) that vocational training can be a practical means of teaching all content areas such as mathematics, science, and language. This view brought about a major paradigm shift in vocational training in K-12 schools away from industrial arts curricula centered in woodworking/metals and graphics/printing shops toward technology education courses taught in labs equipped with high-technology stations such as desktop publishing, computer-assisted design (CAD), and robotics systems.

**Perspective 4: Educational technology as computer systems (a.k.a. educational computing and instructional computing).** This view began in the 1950s with the advent of computers and gained momentum when they began to be used instructionally in the 1960s. As computers began to transform business and industry practices, both trainers and teachers began to see that computers also had the potential to aid instruction. From the time computers came into classrooms in the 1960s until about 1990, this perspective was known as *educational computing* and encompassed both instructional and administrative support applications. At first, programmers and systems analysts created all applications. But by the 1970s, many of the same educators involved with media, AV communications, and instructional systems also were researching and developing computer applications. By the 1990s, educators began to see computers as part of a combination of technology resources, including media,

instructional systems, and computer-based support systems. At that point, educational computing became known as educational technology.

Research has indicated that, educational technology involves the systematic and organized means of using 21<sup>st</sup> century technology to harness and improve teaching and learning process in the classroom. Educational technology comes in different forms and at different levels of education. Thus, educational technology can be used as a tool in teaching and learning or and as a means of instruction in the classroom, and educational technology as a vocation. A lot of factors come into play when it comes to educational technology, factors that will promote effective existence and progress of educational technology and factors that hinder the progress of it.

### **2.5 Benefits of ICT use in education**

ICTs are making dynamic changes in society. They are influencing all aspects of life. The influences are felt more and more at schools. Because ICTs provide both students and teachers with more opportunities in adapting learning and teaching to individual needs, society is, forcing schools aptly respond to this technical innovation. Tinio (2002), states the potentials of ICTs in increasing access and improving relevance and quality of education in developing countries.

According to Cabero (2001), "the flexibilization time-space accounted for by the integration of ICT into teaching and learning processes contributes to increase the interaction and reception of information. Such possibilities suggest changes in the communication models and the teaching and learning methods used by teachers, giving way to new scenarios which favour both individual and collaborative learning". ICT increases the flexibility of delivery of education so that learners can access knowledge anytime and from anywhere. It can influence the way students are taught and how they

learn as now the processes are learner driven and not by teachers. This in turn would better prepare the learners for lifelong learning as well as to improve the quality of learning. In concert with geographical flexibility, technology-facilitated educational programs also remove many of the temporal constraints that face learners with special needs (Moore & Kearsley, 1996).

Students are starting to appreciate the capability to undertake education anywhere, anytime and anyplace. With the help of ICT, students can now browse through e-books, sample examination papers, previous year papers, etc; and can also have an easy access to resource persons, mentors, experts, researchers, professionals, and peers-all over the world. This flexibility has heightened the availability of just-in-time learning and provided learning opportunities for many more learners who previously were constrained by other commitments (Young, 2002). ICT can be used to remove communication barriers such as that of space and time (Lim & Chai, 2004). ICT also allow for the creation of digital resources like digital libraries where the students, teachers and professionals can access research material and course material from any place at any time (Bhattacharya & Sharma, 2007; Cholin, 2005).

Bottino (2003) and Sharma (2003) mentioned that the use of ICT can improve performance, teaching, administration, and develop relevant skills in the disadvantaged communities. It also improves the quality of education by facilitating learning by doing, real time conversation, delayed time conversation, directed instruction, self-learning, problem solving, information seeking and analysis, and critical thinking, as well as the ability to communicate, collaborate and learn (Yuen, Law & Wong, 2003). The use of ICT in educational settings, by itself acts as a catalyst for change in this domain. ICTs by their very nature are tools that encourage and support independent learning. Students

using ICTs for learning purposes become immersed in the process of learning and as more and more students use computers as information sources and cognitive tools (Jonassen & Reeves, 1996), the influence of the technology on supporting how students learn will continue to increase.

ICT presents an entirely new learning environment for students, thus requiring a different skill set to be successful. Critical thinking, research, and evaluation skills are growing in importance as students have increasing volumes of information from a variety of sources to sort through (New Media Consortium, 2007). ICT is changing processes of teaching and learning by adding elements of vitality to learning environments including virtual environments for the purpose. ICT is a potentially powerful tool for offering educational opportunities. It is difficult and maybe even impossible to imagine future learning environments that are not supported, in one way or another, by Information and Communication Technologies (ICT).

Furthermore, ICT may serve as a tool to curriculum differentiation, providing opportunities for adapting the learning content and tasks to the needs and capabilities of each individual pupil and by providing tailored feedback (Mooij, 1999; Smeets & Mooij, 2001).

ICTs can enhance the quality of education in several ways, by increasing learner motivation and engagement, by facilitating the acquisition of basic skills, and by enhancing teacher training. ICTs are also transformational tools which, when used appropriately, can promote the shift to a learner centered environment. ICTs, especially computers and Internet technologies, enable new ways of teaching and learning rather than simply allow teachers and students to do what they have done before in a better way. ICT has an impact not only on what students should learn, but it also plays a major

role on how the students should learn. Along with a shift of curricula from “content-centered” to “competence-based”, the mode of curricula delivery has now shifted from “teacher centered” forms of delivery to “student-centered” forms of delivery. (Mooij, 1999; Smeets & Mooij, 2001).

ICT provides motivation to Learn. ICT such as videos, television and multimedia computer software that combine text, sound, and colorful moving images can be used to provide challenging and authentic content that will engage the student in the learning process. Interactive radio likewise makes use of sound effects, songs, dramatizations, comic skits, and other performance conventions to compel students to listen and become more involved in the lessons being delivered. Students feel more motivated in such type of teaching in the classroom rather than the stereotype 45 minutes’ lecture. This type of learning process is much more effective than the monotonous monologue classroom situation where the teacher just lectures from a raised platform and the students just listen to the teacher (Jonassen & Reeves, 1996).

ICT changes the characteristics of problems and learning tasks, and hence play an important task as mediator of cognitive development, enhancing the acquisition of generic cognitive competencies as essential for life in our knowledge society. Students using ICTs for learning purposes become immersed in the process of learning and as more and more students use computers as information sources and cognitive tools (Jonassen & Reeves, 1996), the influence of the technology on supporting how students learn will continue to increase.

Learning approaches using contemporary ICTs provide many opportunities for constructivist learning through their provision and support for resource-based, student centered settings and by enabling learning to be related to context and to practice



(Berge, 1998; Barron, 1998). Becker (2000) found that ICT increases student engagement, which leads to an increased amount of time students spend working outside class.

ICT helps in providing a catalyst for rethinking teaching practice (McCormick & Scrimshaw, 2001) developing the kind of graduates and citizens required in an information society (Department of Education, 2001); improving educational outcomes (especially pass rates) and enhancing and improving the quality of teaching and learning (Wagner, 2001; Garrison & Anderson, 2003).

ICT can help deepen students' content knowledge, engage them in constructing their own knowledge, and support the development of complex thinking skills (Kozma, 2005; Kulik, 2003; Webb & Cox, 2004). Studies have identified a variety of constructivist learning strategies (e.g., students work in collaborative groups or students create products that represent what they are learning) that can change the way students interact with the content (Windschitl, 2002). Bandura, Girasoli & Hannafin (2008) urge the use of asynchronous CMC tools to promote student self-efficacy and hence academic performance. ICTs have the potential for increasing access to and improving the relevance and quality of education.

It is generally believed that ICTs can empower teachers and learners, making significant contributions to learning and achievement. ICT has the potential to remove the barriers that are causing the problems of low rate of education in any country. It can be used as a tool to overcome the issues of cost, less number of teachers, and poor quality of education as well as to overcome time and distance barriers (McGorry, 2002). People have to access knowledge via ICT to keep pace with the latest developments (Plomp, Pelgrum & Law, 2007).



## **2.6 Limitations of ICT use in Education**

ICT as a modern technology that simplifies and facilitates human activities is not only advantageous in many respects, but also has many limitations. Many people from inside and outside the education system, think of ICT as “Panacea” or the most important solution to school problems and improvements. However, many conditions can be considered as limitations of ICT use in education. The limitations can be categorized as teacher related, student related, and technology related. All of them potentially limit the benefits of ICT to education (Mikre, 2011).

Teachers’ attitude plays an important role in the teaching-learning process that utilizes computers and internet connections. Although teachers’ attitude towards use of these technologies is vital, many observations reveal that teachers do not have clarity about how far technology can be beneficial for the facilitation and enhancement of learning. Of course, some teachers may have positive attitudes to the technology, but refrain from using it in teaching due to low self-efficacy, tendency to consider themselves not qualified to teach with technology. In this respect, Bandura (1986) described self-efficacy as individual’s opinion of capabilities to organize and perform courses of actions to achieve particular types of performances. Moreover, as identified by Brosnan (2001), attitude, motivation, computer anxiety, and computer self-efficacy are factors affecting teachers’ use of computers in their lessons.

Teacher resistance and lack of enthusiasm to use ICT in education may also be another limitation. Furthermore, many teachers may not have the required IT skills and feel uncomfortable, nor do they have trainings needed to use the technology in their teaching. Unless teachers develop some basic skills and willingness to experiment with students, ICT use in education is in a disadvantage (Brosnan, 2001).

On the other hand, the limitation of ICT use in education is related to student behaviour. Appropriate use of computer and the internet by students have significant positive effects on students' attitude and their achievement. Nonetheless, it is very common to observe limitations related to student behaviour. Students tend to misuse the technology for leisure time activities and have less time to learn and study. Yousef & Dahmani (2008) described online gaming, use of face book, chat rooms, and other communication channels as perceived drawbacks of ICT use in education, because, students easily switch to these sites at the expense of their study. Internet access at home, for instance, may be a distraction because of chat rooms and online games, reducing the time spent in doing assignments and learning (Kulik, 1994). Therefore, the impact of availability of ICT on student learning strongly depends on its specific uses.

If ICT is not properly used, the disadvantage will outweigh the advantages. For example, while students use the internet, it may confuse them by the multiplicity of information to choose from.

As a result, the teacher spends much time to control students from websites unrelated to the learning content. Then, for caution, it is important to identify the major limitations of ICT use in education as related to student behaviour. The various literature in the area, identify the following

- Computers limit students' imaginations,
- Over-reliance on ICT limits students critical thinking and analytical skills,
- Students often have only a superficial understanding of the information they download,
- Computer-based learning has negative physical side-effects such as vision problem,

- Students may be easily distracted from their learning and may visit unwanted sites,
- Students tend to neglect learning resources other than the computer and internet,
- Students tend to focus on superficial presentations and copying from the internet,
- Students may have less opportunity to use oral skills and hand writing,
- Use of ICT may be difficult for weaker students, because they may have problems with working independently and may need more support from the teacher. (Kulik, 1994).

The other limitation of ICT use in education is technology related. The high cost of the technology and maintenance of the facilities, high cost of spare parts, virus attack of software and the computer, interruptions of internet connections, and poor supply of electric power are among the technology related limitations of ICT use in education. The infrastructure challenges that may exist are absence of appropriate buildings and rooms to house the technology, shortage of electric supply and telephone lines, and lack of the different types of ICTs. Because of this, one need to deal with infrastructure related challenges before the planning of ICTs integration to education systems (Kulik, 1994).

With respect to challenges of capacity building, we have to develop competencies of teachers and school administrators for the successful integration of ICT in the education system. In fact, one impeding factor of ICTs integration in education systems is the skill gap of people implementing it (Tinio, 2002). For instance, teachers need professional development to gain skills with particular applications of ICT, integration into existing curricula, curricular changes related to its use, changes in teacher role, and on

underpinning educational theories such as constructivism/or student-centered learning. Because of this, any attempt of ICT integration in education should parallel with teachers' professional development. The school leadership also plays a key role in the integration of ICT in education. Lack of support from the school administration is also a big challenge. Thus, for the effectiveness of ICT integration, administrators must be competent and have a broad understanding of the technical, curricular, administrative, financial, and social dimensions of ICT use in education.

Faced with these challenges, how can teachers integrate technology into their teaching? An approach is needed that treats teaching as an interaction between what teachers know and how they apply what they know in the unique circumstances or contexts within their classrooms (Koehler & Mishra, 2009). There is no “one best way” to integrate technology into curriculum. Rather, integration efforts should be creatively designed or structured for particular subject matter ideas in specific classroom contexts (Koehler & Mishra, 2009). Honoring the idea that teaching with technology is a complex, ill-structured task; we propose that understanding approaches to successful technology integration requires educators to develop new ways of comprehending and accommodating this complexity.

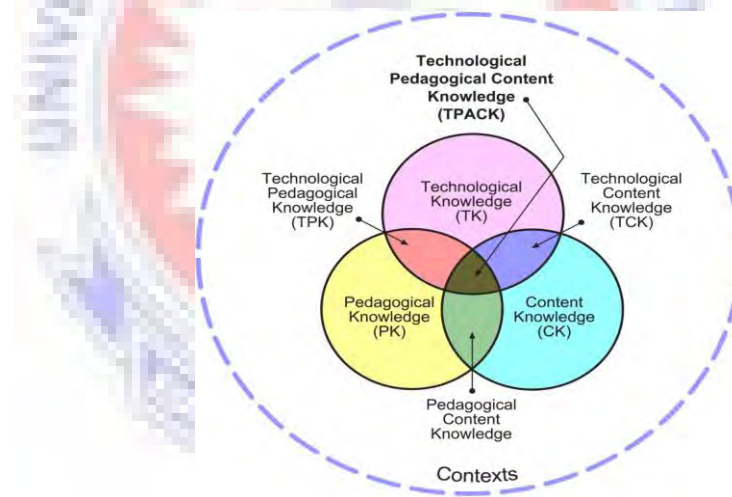
## **2.7 Technology, Pedagogy, and Content Knowledge (TPACK) Framework**

Koehler & Mishra (2009) argued that, at the heart of good teaching with technology are three core components: content, pedagogy, and technology, plus the relationships among and between them. The interactions between and among the three components, play out differently across diverse contexts, account for the wide variations seen in the extent and quality of educational technology integration. These three knowledge bases

(content, pedagogy, and technology) form the core of the technology, pedagogy, and content knowledge (TPACK) framework.

The TPACK framework builds on Shulman's (1986) descriptions of PCK to describe how teachers' understanding of educational technologies and PCK interact with one another to produce effective teaching with technology. In this model, there are three main components of teachers' knowledge: content, pedagogy, and technology. Equally important to the model are the interactions between and among these bodies of knowledge, represented as PCK, TCK (technological content knowledge), TPK (technological pedagogical knowledge), and TPACK.

**Figure 2.2. The TPACK framework and its knowledge components**



Source: (Koehler & Mishra, 2009)

### **Content Knowledge**

Content knowledge (CK) is teachers' knowledge about the subject matter to be learned or taught. The content to be covered in middle school science or history is different from the content to be covered in an undergraduate course on art appreciation or a graduate seminar on astrophysics. Knowledge of content is of critical importance for

teachers. As Shulman (1986) noted, this knowledge would include knowledge of concepts, theories, ideas, organizational frameworks, knowledge of evidence and proof, as well as established practices and approaches toward developing such knowledge. Knowledge and the nature of inquiry differ greatly between fields, and teachers should understand the deeper knowledge fundamentals of the disciplines in which they teach.

In the case of science, for example, this would include knowledge of scientific facts and theories, the scientific method, and evidence-based reasoning. In the case of art appreciation, such knowledge would include knowledge of art history, famous paintings, sculptures, artists and their historical contexts, as well as knowledge of aesthetic and psychological theories for evaluating art (Koehler & Mishra, 2009).

### **Pedagogical Knowledge**

Koehler & Mishra (2009) argues that, Pedagogical knowledge (PK) is teachers' deep knowledge about the processes and practices or methods of teaching and learning. They encompass, among other things, overall educational purposes, values, and aims. This generic form of knowledge applies to understanding how students learn, general classroom management skills, lesson planning, and student assessment. It includes knowledge about techniques or methods used in the classroom; the nature of the target audience; and strategies for evaluating student understanding. A teacher with deep pedagogical knowledge understands how students construct knowledge and acquire skills and how they develop habits of mind and positive dispositions toward learning. As such, pedagogical knowledge requires an understanding of cognitive, social, and developmental theories of learning and how they apply to students in the classroom (Koehler & Mishra, 2009).

### **Pedagogical Content Knowledge (PCK)**

Koehler & Mishra (2009) opined that, PCK includes knowing what teaching approaches fit the content, and likewise, knowing how elements of the content can be arranged for better teaching. PCK is concerned with the representation and formulation of concepts, pedagogical techniques, and knowledge of what makes concepts difficult or easy to learn, knowledge of students' prior knowledge, and theories of epistemology. It also involves knowledge of teaching strategies that incorporate appropriate conceptual representations in order to address learner difficulties and misconceptions and foster meaningful understanding. It also includes knowledge of what the students bring to the learning situation, knowledge that might be either facilitative or dysfunctional for the particular learning task at hand. This knowledge of students includes their strategies, prior conceptions (both "naive" and instructionally produced), misconceptions that they are likely to have about a particular domain, and potential misapplications of prior knowledge.

PCK is consistent with and similar to Shulman (1986) idea of knowledge of pedagogy that is applicable to the teaching of specific content. Central to Shulman's conceptualization of PCK is the notion of the transformation of the subject matter for teaching. Specifically, according to Shulman, this transformation occurs as the teacher interprets the subject matter, finds multiple ways to represent it, and adapts and tailors the instructional materials to alternative conceptions and students' prior knowledge.

### **Technology Knowledge (TK)**

According to Koehler & Mishra (2009), Technology knowledge (TK) is knowledge about standard technologies, such as books, chalk and blackboard, and more advanced technologies, such as the Internet and digital video. This involves the skills required to



operate particular technologies. In the case of digital technologies, this includes knowledge of operating systems and computer hardware, and the ability to use standard sets of software tools such as word processors, spreadsheets, browsers, and e-mail. Technology knowledge (TK) includes knowledge of how to install and remove peripheral devices, install and remove software programs, and create and archive documents. Most standard technology workshops and tutorials tend to focus on the acquisition of such skills.

Technology knowledge (TK) is always in a state of flux more so than the other two core knowledge domains in the TPACK framework (pedagogy and content). Thus, defining it is notoriously difficult. Any definition of technology knowledge is in danger of becoming outdated by time (Koehler & Mishra, 2009).

The definition of TK used in the TPACK framework is close to that of Fluency of Information Technology (FITness), as proposed by the Committee of Information Technology Literacy of the National Research Council (NRC, 1999). They argue that Fluency of Information Technology (FITness) goes beyond traditional notions of computer literacy to require that persons understand information technology broadly enough to apply it productively at work and in their everyday lives, to recognize when information technology can assist or impede the achievement of a goal, and to continually adapt to changes in information technology. FITness, therefore, requires a deeper, more essential understanding and mastery of information technology for information processing, communication, and problem solving than does the traditional definition of computer literacy. Acquiring TK in this manner enables a person to accomplish a variety of different tasks using information technology and to develop different ways of accomplishing a given task. This conceptualization of TK does not



posit an “end state,” but rather sees it developmentally, as evolving over a lifetime of generative, open-ended interaction with technology.

### **Technological Content Knowledge (TCK)**

TCK is an understanding of the manner in which technology and content influence and constrain one another. Teachers need to master more than the subject matter they teach; they must also have a deep understanding of the manner in which the subject matter (or the kinds of representations that can be constructed) can be changed by the application of particular technologies. Teachers need to understand which specific technologies are best suited for addressing subject-matter learning in their domains and how the content dictates or perhaps even changes the technology or vice versa (Koehler & Mishra, 2009).

Koehler & Mishra (2009) further opined that, understanding the impact of technology on the practices and knowledge of a given discipline is critical to developing appropriate technological tools for educational purposes. The choice of technologies affords and constrains the types of content ideas that can be taught. Likewise, certain content decisions can limit the types of technologies that can be used. Technology can constrain the types of possible representations, but also can afford the construction of newer and more varied representations. Furthermore, technological tools can provide a greater degree of flexibility in navigating across these representations.

### **Technological Pedagogical Knowledge (TPK)**

Technological pedagogical knowledge (TPK) is knowledge of the existence, components, and capabilities of various technologies as they are used in teaching and learning settings, and conversely, knowing how teaching might change as the result of using particular technologies. This might include an understanding that a range of tools

exists for a particular task, the ability to choose a tool based on its fitness, strategies for using the tool's affordances, and knowledge of pedagogical strategies and the ability to apply those strategies for use of technologies. This includes knowledge of tools for maintaining class records, attendance, and grading, and knowledge of generic technology-based ideas such as Web Quests, discussion boards, and chat rooms.

TPK requires a forward-looking, creative, and open-minded seeking of technology use, not for its own sake but for the sake of advancing student learning and understanding. Teachers need to reject functional fixedness (Duncker, 1945) and develop skills to look beyond most common uses for technologies, reconfiguring them for customized pedagogical purposes.

### **Technology, Pedagogy, and Content Knowledge (TPACK)**

TPACK is an emergent form of knowledge that goes beyond all three "core" components (content, pedagogy, and technology). Technological pedagogical content knowledge is an understanding that emerges from interactions among content, pedagogy, and technology knowledge (Koehler & Mishra, 2009). TPACK is the basis of effective teaching with technology, requiring an understanding of the representation of concepts using technologies; pedagogical techniques that use technologies in constructive ways to teach content; knowledge of what makes concepts difficult or easy to learn and how technology can help redress some of the problems that students face; knowledge of students' prior knowledge and theories of epistemology; and knowledge of how technologies can be used to build on existing knowledge to develop new epistemologies or strengthen old ones.

By simultaneously integrating knowledge of technology, pedagogy and content, expert teachers bring TPACK into play any time they teach. Each situation presented to teachers is a unique combination of these three factors, and accordingly, there is no single technological solution that applies for every teacher, every course, or every view of teaching. Rather, solutions lie in the ability of a teacher to flexibly navigate the spaces defined by the three elements of content, pedagogy, and technology and the complex interactions among these elements in specific contexts. Ignoring the complexity inherent in each knowledge component or the complexities of the relationships among the components can lead to oversimplified solutions or failure. Thus, teachers need to develop fluency and cognitive flexibility not just in each of the key domains (T, P, and C), but also in the manner in which these domains and contextual parameters interrelate, so that they can construct effective solutions. This is the kind of deep, flexible, pragmatic, and nuanced understanding of teaching with technology we involved in considering TPACK as a professional knowledge construct.

Teaching with technology is a difficult thing to do well. The TPACK framework suggests that content, pedagogy, technology, and teaching/learning contexts have roles to play individually and together. Teaching successfully with technology requires continually creating, maintaining, and re-establishing a dynamic equilibrium among all components. It is worth noting that a range of factors influences how this equilibrium is reached (Koehler & Mishra, 2009).

When choosing to use technology as part of their instructional repertoire, teachers must understand elements and implications of technology use related to instruction, management, content, pedagogy, and technology itself (Guerrero, 2010).

Guerrero (2010) further posited that, development and understanding of TPACK, especially as it relates to specific content areas, is imperative because of the importance of technology's appropriate use in educational settings. If technology is to influence teachers' practices in reform-oriented ways and improve students' learning by having a positive impact on engagement, achievement, and confidence, it must be successfully integrated into instruction in effective, authentic, and non-routine ways (Guerrero, 2010). Based on the discussion above, to ensure technology's proper use in educational settings, it requires the development and understanding of the characteristics of teachers' technological pedagogical content knowledge base.

### **2.8 Social Studies and the need of ICT integration**

Technological change has proven one of the few elements of the early 21st century, providing social studies educators with the challenge and opportunity of preparing digital citizens in a global setting. This requires rethinking the type of social studies learning necessary in the 21st century. As the National Academies concluded in the Education for Life and Work report, the process of deeper learning is essential for the development of transferable 21st century competencies and the application of 21st century competencies in turn supports the process of deeper learning, in a recursive, mutually reinforcing cycle (Pellegrino & Hilton, 2012).

Given the breadth, depth and rapidity of technological change, educators often have focused on a facet of technology such as how technology can support student learning at the expense, however, of fully appreciating and realizing the scope of technology's impact. While emerging technologies offer PreK-16 students and teachers new learning tools, the implications for how and what social studies students learn is much richer and deeper than learning the nuances of a new mobile device, in several ways. The

proliferation of online data raises questions about critical media literacy and an understanding of how such data is used to make economic and political decisions (National Council for the Social Studies, 2013).

Offering students an opportunity to learn formally through the technologies that they are increasingly likely to be learning with on their own may, therefore, increase student engagement (Fredricks, Blumenfeld & Paris, 2004). Second, digital technologies have the potential to support situated learning (Brown, Collins & Duguid, 1989) that immerses students in social studies classroom practices that readily translate to contexts beyond the classroom where they will use their knowledge and skills.

In addition to the potential benefits of providing students relevant and transferrable curriculum and instruction, the examples of digital technology referred to here can provide students efficient access to multimedia content such as hyperlinked text and embedded audio and video that support both appropriately differentiated learning and multiple learning styles in the social studies and across content areas (Rose and Meyer, 2002). Social studies' integrative nature, its exploration of the human experience across time and place, and its commitment to readying youth for life in a democratic society within a global context means the field is well suited to enabling youth to learn with and about technology for several reasons.

The impact of technology in all aspects of life is a focal point of social studies. The burgeoning role of social media in politics and civil society worldwide and in the lives of children and youth, for example, presents fascinating opportunities to explore the importance of free speech, decision making, and global civic action in a democratic society. Becoming an informed decision maker takes on new meaning when one stops to consider how many digital contracts a student has entered by the time he or she begins

high school. Now, more than ever, students need the knowledge base that social studies provide (Rose and Meyer, 2002).

Berson (1996) maintained that, there is a rich tradition of innovative technology use in the teaching and learning of social studies. Social studies educators are able not only to use technologies, such as GIS with U.S. census data or video editing of political speeches for powerful learning experiences, but also are able to draw upon corporate and government use of such technologies, such as the use of social media by businesses for cause marketing or by politicians during campaigns. Social studies educators are able to model and build upon cutting edge uses of emerging technologies by the private and public sector during their teaching (Berson, 1996).

Within social studies, technology has served dual roles, as both important instructional tools and as objects that have had significant effect on the political, social, economic functioning of American society (Berson, 1996). In this sense, social studies teachers should be more aware of the changes technology has brought to modern society and try to reflect this change in their own classrooms.

In recent years, there has been a slight emergence of new and innovative uses of technology in the social studies and more social studies teachers have started to use technology, especially the Internet; however, one literature review of computer technology in the social studies indicates that computer continues to serve the primary function of facilitating students' access to content and remain somewhat relegated to being an appendage to traditional classroom materials (Whitworth & Berson, 2003).

The integration of multimedia technologies in the social studies has made it possible for students to become more involved in their studies and create multimedia applications as part of their project requirements. Kocoglu & Koymen (2003) pointed out those students who use the multimedia technology as designers have higher creative thinking skills than those who do not. In other words, it seems that using multimedia in learning process has a positive effect on students' creative thinking skills. Multimedia technologies significantly influence on students' learning by broadening their scope of learning and knowledge. Thus, multimedia technology can provide an alternative to the traditional teacher-centered learning and it enables students to enjoy a richer constructivist learning environment. It can support students to become active learners rather than memorizing knowledge and display their ideas and information in terms of the multimedia format and use their higher order thinking skills like analysis, synthesis, and evaluation (Neo, Mai & Neo, 2002).

The National Council for the Social Studies (2009) position paper on media literacy articulates the growing importance of developing digital literacy. It argued that, the multimedia age requires new skills for accessing, analyzing, evaluating, creating, and distributing messages within a digital, global, and democratic society. It further posited that, whether we like it or not, this media culture is our students' culture. It is therefore the job of everyone to prepare them to be able to critically participate as active citizens with the abilities to intelligently and compassionately shape democracy in this new millennium.

Given the need for social studies educators to increase students' technological fluency and digital literacy, the thoughtful integration of digital devices that offer software, data storage and Internet access such as a laptop, iPad, iPod or smartphone may offer



students significant advantages over printed instructional materials (Bers, 2008; Berson & Berson, 2003; Bonk, 2009; Lee, 2002; Prensky, 2010). Traditionally, social studies curriculum resources have relied heavily on print text alone or print text with integrated photographs to deliver content (Rose & Meyer, 2002). In so doing, printed texts have often privileged a single learning style or failed to support students with diverse reading or comprehension needs (Rose & Meyer, 2002). In contrast, a digital text's comparative multimodal flexibility allows different learning styles and learner needs to be accommodated simultaneously with a single text (Rose & Meyer, 2002; Prensky, 2010).

Unfortunately, social studies curricula have not been largely affected by this technology change and technology's unique role in the enhancement of social studies education is not widely recognized (Martorella, 1997; White, 1997; Whitworth & Berson, 2003). Similar to Becker's finding, other research has shown that social studies teachers lag behind other content area teachers in the adoption of innovative teaching methods provided by technology (Anderson & Becker, 2001; Atkins & Vasu, 2000; Dawson, Bull, & Swain, 2000; Education Testing Service, 1997; Office of Technology Assessment, 1995).

While children and youth are immersed in technology related social studies, teachers find themselves hard pressed to incorporate learning about and with technology into their classrooms (Berson & Berson, 2003). Elementary teachers are able to devote less and less time to social studies and secondary teachers confront high stakes testing and new demands as literacy teachers. Social studies educators confront a digital divide between the realities of their classrooms and their students' world.



It is observed that, because young people have access to social networking sites, location services, and online games that have wider and even a global audience, from which they make innumerable choices, and act in multiple social settings at the same time. This creates both an opportunity and a dilemma for social studies educators, to help these young people translate these experiences in a social setting into civic and political knowledge and skills within the context of contemporary classrooms.

## **2.9 Resources for Social Studies lessons**

Social studies class can be boring when it only consists of reading a textbook. It can also be boring and long when students are required to search for information. For these reasons, many students claim that they don't enjoy learning social studies. But, geography, history, civics, sociology, and political science which are imbedded in social studies can be very enjoyable when made interactive.

Many teachers should take advantage of the interactive assignments, activities, and documentaries in the classroom by making use of all of the teaching and learning resources that are available on the internet. Teaching resources cover a wide variety of social studies topics including geography, history, economics, and politics.

### **Museum Box**

Museum Box is a great tool for creating virtual displays of artifacts that is found online. By using Museum Box students can organize images, text, videos, links, and audio clips about any topic that they're researching. When completed, students' "boxes" become digital dioramas (Oates & McEwen, 2015).

### **Hip Hughes History**

Hip Hughes History is a fantastic YouTube channel that was promoted a few times in 2012. Hip Hughes History is a series of short, upbeat lectures on topics in US History and World History (Hughes, 2008).

### **Meograph**

Meograph provides tools for creating map-based and timeline-based narrated stories. When you watch a Meograph story, you will notice that it is very similar to watching a narrated Google Earth tour. That is because it is based on the Google Maps and the Google Earth browser plug-in. As the story plays, you can stop it to explore additional content in the forms of videos, texts, and images. Meograph has an education page on which they are featuring examples of using the service in education (Leybovich, 2012).

### **The Google Cultural Institute**

The Google Cultural Institute offers 42 new online historical exhibitions. The exhibitions feature images, documents, and artifacts from some of the most significant cultural events of the last one hundred years. The exhibitions are built as interactive slideshows that you can scroll and click through to discover the artifacts and stories (Google Cultural Institute, 2011)

### **European Exploration: The Age of Discovery**

European Exploration: The Age of Discovery is a free iPad app that puts students in charge of exploring the "New World." In the game students are in charge of selecting explorers and ships to send out to the New World. Students have to manage the finances of their expeditions so that they don't run out of money before they can return home safely. European Exploration: The Age of Discovery provides students with historical information about the explorers that are available to lead expeditions. Some of the

explorers available include Giovanni da Verrazano, Christopher Columbus, and Juan Ponce de Leon. The explorers are graded based on their navigation, cartography, and ship keeping skills. Each explorer has a different salary which students must account for when managing the budgets of their expeditions. The object of the game is to unveil the entire New World. To do these students draw expedition maps and send out their explorers. If the expedition is successful it will earn money that students can then parlay into financing another expedition. Successful managers of European Exploration: The Age of Discovery will be able to manage multiple expeditions simultaneously (Levine, 2012).

### **Earth GE Teach**

GE Teach is built around the Google Earth browser plug-in. The purpose of the site is to help teachers develop lessons in which students explore spatial distributions. Visitors to GE Teach can select from a variety of physical geography and human geography layers to display and explore. A fantastic feature of GE Teach is the option use the "two Earths" mode to show two maps side-by-side (Byrne, 2012).

### **Go Social Studies Go**

Go Social Studies Go is a nice site developed by Kenneth Udhe, a social studies teacher in Michigan, for his students and the world. Go Social Studies Go is essentially a series of multimedia books about common social studies topics. The site is divided into four main sections; World Geography, World Religions, Ancient History, and Colonial America. Within each section is a series of booklets containing text, pictures, videos, and links to additional resources (Udhe, 2011).

### **Gooru**

Gooru is a service that aims to provide teachers and students with an extensive collection of videos, interactive displays, documents, diagrams, and quizzes for learning about topics in mathematics, social studies, and science. As a Gooru member you have access to hundreds of resources according to subject areas such as social studies, chemistry, biology, ecology, algebra, calculus, and more. Within each subject area you can look for resources according to media type such as video, interactive display, slides, text, and lesson plans. When you find resources that you want to use, drag them to the resources folder within your account. Gooru also offers you the option to add resources to your folders even if you did not find them within Gooru (Ram, 2011).

### **iCivics**

iCivics is a free web-based resource that brings interactive and engaging Civics content to classrooms in the form of games, lesson plans and other digital content. Founded by Sandra Day O'Connor, iCivics puts students in civic roles and asks them to solve real-world issues (O'Connor, 2009).

### **Flipped classroom**

This is an instructional strategy in which computer-assisted teaching is integrated with classroom instruction. Students are given basic essential instruction, such as lectures, before class instead of during class. Instructional content is delivered outside of the classroom, often online. This frees up classroom time for teachers to more actively engage with learners (Levine, 2012).

## **Media**

Educational media and tools can be used for:

- task structuring support: help with how to do a task (procedures and processes),
- access to knowledge bases (help user find information needed)
- alternate forms of knowledge representation (multiple representations of knowledge, e.g. video, audio, text, image, data).

Forehand (2010). Numerous types of physical technology are currently used: digital cameras, video cameras, interactive whiteboard tools, document cameras, electronic media, and LCD projectors. Combinations of these techniques include blogs, collaborative software, ePortfolios, and virtual classrooms.

### **Audio and video**

Radio offers a synchronous educational vehicle, while streaming audio over the internet with webcasts and podcasts can be asynchronous. Classroom microphones often wireless can enable learners and educators to interact more clearly.

Diecker, Lane, O'Brien & Kyger (2009) expressed that, Video technology has included VHS tapes and DVDs, as well as on-demand and synchronous methods with digital video via server or web-based options such as streamed video from YouTube, Teacher Tube, Skype, Adobe Connect, and webcams. Telecommuting can connect with speakers and other experts. Interactive digital video games are being used at K-12 and higher education institutions.

### **Computers, tablets and mobile devices**

Collaborative learning is a group-based learning approach in which learners are mutually engaged in a coordinated fashion to achieve a learning goal or complete a learning task. With recent developments in smartphone technology, the processing powers and storage capabilities of modern mobiles allow for advanced development and use of apps. Many app developers and education experts have been exploring smartphone and tablet apps as a medium for collaborative learning (Terras & Ramsay, 2012).

Computers and tablets enable learners and educators to access websites as well as programs such as Microsoft Word, PowerPoint, PDF files, and images. Many mobile devices support m learning. Mobile devices such as clickers and smartphones can be used for interactive audience response feedback (Tremblay 2010). Mobile learning can provide performance support for checking the time, setting reminders, retrieving worksheets, and instruction manuals (Terras & Ramsay, 2012).

### **Social networks**

Courts & Tucker, (2012) opined that, Group webpages, blogs, wikis, and Twitter allow learners and educators to post thoughts, ideas, and comments on a website in an interactive learning environment. Social networking sites are virtual communities for people interested in a particular subject to communicate by voice, chat, instant message, video conference, or blogs (Murray & Waller, 2007). The National School Boards Association found that 96% of students with online access have used social networking technologies, and more than 50% talk online about schoolwork. Social networking encourages collaboration and engagement and can be a motivational tool for self-efficacy amongst students.

## **Whiteboards**

There are three types of whiteboards. The initial whiteboards, analogous to blackboards, date from the late 1950s. The term whiteboard is also used metaphorically to refer to virtual whiteboards in which computer software applications simulate whiteboards by allowing writing or drawing. This is a common feature of groupware for virtual meeting, collaboration, and instant messaging. Interactive whiteboards allow learners and instructors to write on the touch screen. The screen markup can be on either a blank whiteboard or any computer screen content. Depending on permission settings, this visual learning can be interactive and participatory, including writing and manipulating images on the interactive whiteboard (Levine, 2012).

All of the above and many others can help in teaching the topics and areas in Social Studies lessons. They help in bringing abstract ideas and facts to life or reality for students to comprehend easily. These resources also make the Social Studies classroom very interactive and child-centered which promotes better understanding of concepts by the students. This in turn improves the quality of teaching and learning in the Social Studies classroom.

### **2.10 Summary**

The study on Social Studies teachers' knowledge and usage of ICT in teaching Social Studies is founded on the Technology Acceptance Model developed by Davis (1989) which postulates that, there are two factors: namely perceived usefulness and perceived ease of use which are relevant in computer use behaviors. This model over the years has seen a number of modifications by other authors through which new variables have been added to it.

The 21<sup>st</sup> century has been engulfed with technology and hence technology permeates every aspect of human life in which the educational sector is not left out. The role of Information-Communication Technologies in the 21<sup>st</sup> century classroom is increasing in prevalence and importance as educators understand its value and adjust to its influence.

Teachers therefore need to integrate technology in the classroom. Thus, using of technology resources computers, mobile devices like smartphones and tablets, digital cameras, social media platforms and networks, software applications, the Internet, in daily classroom practices, and in the management of a school.

It is evident that there are a lot of benefits in using ICT in the classroom. ICTs are making dynamic changes in society. They are influencing all aspects of life. The influences are felt more and more at schools. Because ICTs provide both students and teachers with more opportunities in adapting learning and teaching to individual needs, society is, forcing schools aptly respond to this technical innovation. Tinio (2002), stated the potentials of ICTs in increasing access and improving relevance and quality of education in developing countries.

ICT as a modern technology that simplifies and facilitates human activities is not only advantageous in many respects, but also has many limitations. Faced with challenges of ICT integration in education, an approach is needed that treats teaching as an interaction between what teachers know and how they apply what they know in the unique circumstances or contexts within their classrooms (Koehler & Mishra, 2009).



Koehler & Mishra (2009) argued that, at the heart of good teaching with technology are three core components: content, pedagogy, and technology, plus the relationships among and between them. The interactions between and among the three components, play out differently across diverse contexts, account for the wide variations seen in the extent and quality of educational technology integration. These three knowledge bases (content, pedagogy, and technology) form the core of the technology, pedagogy, and content knowledge (TPACK) framework.

Technological change has proven one of the few constants of the early 21st century, providing social studies educators with the challenge and opportunity of preparing digital citizens in a global setting. This requires rethinking the type of social studies learning necessary in the 21st century. Digital technologies have the potential to support situated learning (Brown, Collins & Duguid, 1989) that immerses students in social studies classroom practices that readily translate to contexts beyond the classroom where they will use their knowledge and skills.

In addition to the potential benefits of providing students with relevant and transferrable curriculum and instruction, the examples of digital technology referred to here can provide students efficient access to multimedia content such as hyperlinked text and embedded audio and video that support both appropriately differentiated learning and multiple learning styles in the social studies and across content areas (Rose and Meyer, 2002).

From the literature review, literature abounds Social Studies teachers' knowledge of ICT, Social Studies teachers' use of ICT and Social Studies teachers' perception about the use of ICT in teaching in the Senior High schools, Colleges of Education and Universities in parts of Ghana and globally. However, there is a gap in literature on

Social Studies teachers' integration and usage of ICT in teaching in Junior High Schools in the Gomoa West District of Ghana. Little literature is found on Social Studies teachers' integration and usage of ICT in teaching in Junior High Schools in the Gomoa West District. The study therefore sought to fill this gap. Thus, added more information to literature on Social Studies teachers' integration and usage of ICT in teaching in Junior High Schools in the Gomoa West District.



## CHAPTER THREE

### METHODOLOGY

#### 3.0 Overview

This chapter discusses the general approach and specific techniques that were adapted for the research. Specifically, the chapter entails the research design, research area, and population for the study, the sample and sampling techniques. The instruments used for the data collection are also discussed. The procedure for the analysis of data is also explored in the chapter. The chapter ends with details on the limitations of the methodology employed in conducting the study.

#### 3.1 Research Design

Amin (2005) expressed that research design is a master plan specifying the research methods and procedures. It is a detailed plan, which researchers use to guide and focus the research. Creswell (2014) also referred to research design as a detailed plan on how a research study is to be conducted, operationalizing variables so that they can be measured, selecting a sample of interest to study, collecting data to be used as a basis for testing hypothesis, and analyzing results.

The study adopted the concurrent triangulation design within the mixed method approach. Creswell (2014) argues that, in this design, a researcher collects both quantitative and qualitative data, analyzes them separately, and then compares the result to see if the findings confirm or disconfirm each other. In this case, the quantitative data collection and qualitative data collection are concurrent, happening during one phase of the research study.

The researcher uses two different methods in an attempt to confirm, cross-validate, or corroborate findings within a single study (Greene, Caracelli, & Graham, 1989; Morgan, 1998; Steckler, McLeroy, Goodman, Bird & McCormick, 1992). This design generally uses separate quantitative and qualitative methods as a means to offset the weakness inherent within one method with the strengths of the other method. Ideally, the priority would be equal between the two methods, but in practical application, the priority would be given to either the quantitative or the qualitative approach.

Creswell (2014) further argues that, concurrent triangulation design usually integrates the results of the two methods during the interpretation phase. This interpretation either may note the convergence of the findings as a way to strengthen the knowledge claims of the study or must explain any lack of convergence that may result. The first approach is called a side-by-side comparison. Researchers can also merge the two databases by changing qualitative codes or themes into quantitative variables and then combining the two quantitative databases, a procedure called data transformation.

In this design, the investigator collected both form of data at the same time and then integrated the information in the interpretation of the overall results. In this research, data were collected on the ICT knowledge of Social Studies teachers as a unit and on the use of ICT in teaching Social Studies as another entity (at the same time).

The concurrent triangulation design within the mixed methods approach is chosen because it, allows triangulation of both qualitative and quantitative methods. It is familiar to most researchers and can result in well-validated and substantiated findings (Creswell, 2014). In addition, the concurrent data collection results are in a shorter data collection period as compared with that of the sequential designs (Creswell, 2014). Thus, the cost of repeated data collection and tracking of respondents is absent.

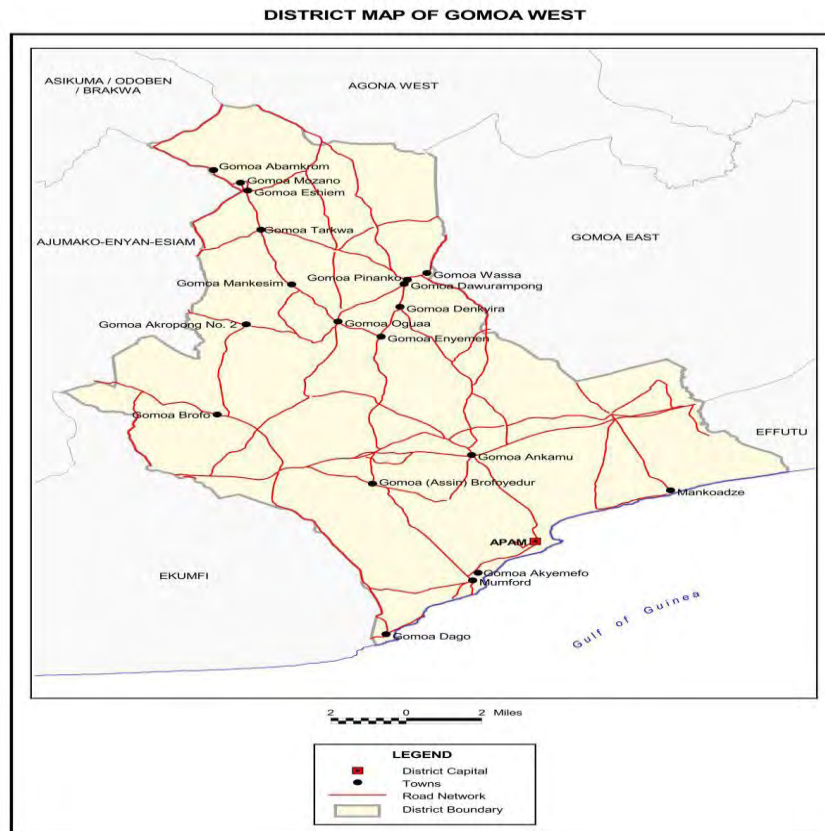
### 3.2 Research Area

The research site was Gomoa West District. According to Ghana Statistical Service (2014), legislative Instrument (L1) 1896 following the division of the former Gomoa District into two, Gomoa West and Gomoa East Districts established Gomoa West District in July 2008. Apam is its District Capital.

The 2010 Population and Housing Census recorded 135,189 as the population of the district, which is about 6.1% of the regional population. There are 60,417 males, which constitute 44.7 percent of the total population, and 74,772 females, which also constitute (55.3%). The population in the urban areas is 57,568 (42.6%) and in the rural areas we have 77, 621 (57.4%).

The main economic activities of the people are farming, that is crops and livestock, fishing, mining and quarrying, tourism, commerce and services, manufacturing and agro-processing. The main occupations of the people are farming and fishing since the area lies in a forest and coastal belt respectively, where the land is fertile for the cultivation of food crops such as cocoyam, plantain, yam, banana and vegetables. The people are mainly fishermen, artisans, auto and radio mechanics, sewing, and masonry, woodcarving, Beads- making, black smiting, sign writing and painting.

The technological and socio-economic development of the District depends largely on access to quality education of its people. The district has 343 educational institutions, comprising 126 Nurseries/Kindergarten, 132 Primary, 77 Junior High Schools and 8 Senior High Schools Ghana (Statistical Service, 2014).

**Figure 3.1 Map showing the geographical location of the study area.**

Source: Ghana Statistical Service, GIS (2014)

### 3.3 Population

The population comprised all the seventy-seven, (77) Junior High School Social Studies teachers in the district.

### 3.4 Sampling

Seidu (2012) defines sampling as using some elements of a population for a study with the aim of fairly generalizing conclusions relevant to the entire population. However, Creswell (2014) asserted that, generalization "is used in a limited way in qualitative research" since the inquiry is not to generalize findings to individuals and sites under study. The focus is to develop and describe findings in specific context and sites. "Particularity rather than Generality is the hallmark of qualitative research" (Greene &

Caracelli, cited in Creswell, 2014). This study used both qualitative and quantitative approaches in the research, which addressed the generalization limitations in the qualitative studies. The sample size was all the 77 Junior High School Social Studies teachers in the district.

**Table 3.1 Sample Size Breakdown**

<b>CATEGORY OF RESPONDENT</b>	<b>TOTAL POPULATION</b>	<b>SAMPLE SIZE</b>	<b>SAMPLING TECHNIQUE</b>
JHS Social Studies Teachers	77	77	Census
JHS Social Studies Teachers	77	5	Purposive

### **3.5 Sampling Strategies**

#### **3.5.1 Census sampling**

The researcher used census sampling to select all the 77 Social Studies teachers in the district. A census study occurs if the entire population is very small or it is reasonable to include the entire population.

#### **3.5.2 Purposive sampling**

The researcher then used purposive sampling to select five (5) out of the 77 Social Studies teachers to observe their lessons and then interview them. Creswell, cited in Kusi (2012) has argued that in purposive sampling, researchers intentionally select individuals and sites to learn or understand the central phenomenon. The standard used in choosing participants and sites is whether they are information rich. The purposive sampling strategy was used because the respondents met a certain criterion, which was

that, these Junior High Schools had access to computers and technological tools in their schools.

### **3.6 Data Collection**

The reliability of every research lies in the exactitude and accuracy of the methods for gathering data. These methods herein are in line with the theoretical framework as suggested by Creswell (2014) and Sikes (2004). The selection of data collection methods also took into consideration the personal and contextual conditions on the field during the research as suggested by Kusi (2012). These methods are also directly related to the research questions since the data collected is what is analyzed and used in answering the research questions.

#### **3.6.1 Questionnaire**

The researcher developed an ICT integration questionnaire to explore Social Studies teachers' knowledge and usage of ICT in teaching Social Studies in the Gomoa West district of the Central region. The questionnaire was structured but the last part, thus part "D" of the questionnaire had semi-structured items. The questionnaire was divided into four parts, the first part "A" explored the bio data of the respondents, the second part "B" of the questionnaire consisted of a four point Likert scale which involved "4 = Strongly Agree, 3 = Agree, 2 = Disagree and 1 = Strongly Disagree", which looked at Social Studies teacher's content and practical knowledge of ICT, the third part "C" looked at their usage of ICT in teaching Social Studies and the fourth part "D" consisted of open ended questions which explored the challenges associated with using ICT to teach Social Studies.



The questionnaires were delivered to the seventy-seven respondents by the researcher in all the seventy-seven Junior High Schools in the district to solicit data from social studies teachers. Responding to the questionnaires was optional. Respondents were given three weeks and others even used a month, which the researcher permitted, to respond to the questionnaires at their own convenient time. The researcher established contact numbers with all respondents and those who were not willing to volunteer the contact numbers were allowed to decline. Through the contacts, the researcher called respondents through phones to remind them weekly and clarified questions that respondents found not to be clear.

Questionnaire allowed for wider coverage and comparison of responses, and anonymity and confidentiality of responses can easily be observed as the hallmark of the research (Kusi, 2012). Questionnaires ensure the confidentiality of responses and saves time. In addition, they are widely used in social science research and education.

### **3.6.2 Interviews**

The researcher conducted a semi-structured interview with 5 Social Studies teachers of the Gomoa West district. This interview guide which contained 7 items was designed by the researcher to explore their perception about the use of ICT in teaching Social Studies. The interviewees were pre notified a week on a plan to administer the interviews on them.

Semi-structured interview allows flexibility in the interview process. Kusi (2012:45-46) said that semi-structured interview offers “interviewees the opportunity to express their views, feelings and experiences freely and the interviewers the freedom to divert from the items or questions in schedule to seek clarification...”. However, it is time

consuming and inconvenience respondents compared to questionnaires that respondents can answer on a later date convenient to them.

### **3.6.3 Observation**

A non-participant observation schedule was carried among the five Social Studies teachers interviewed. Mitchell and Jolley (2012) argued that observation is the process of watching behaviour. Observation can be used to collect exploratory data on what is happening on a situation or to put into the data obtained by questionnaires or interviews in perspective (Robson, 1995). Creswell (2009) recommended the use of observational protocol as a method for recording notes. This is to enable the researcher to know exactly what goes on in the classrooms. A maximum of seventy (70) minutes duration was used for each of the observation carried out. The observation was done on Social Studies teachers to ascertain the teachers' use of ICT in teaching Social Studies. Teachers were pre -informed as to the researcher's intention to carry out observation in their various classes, but the date of observation was not communicated to teachers because researcher wanted the observation not to influence the teachers' normal way of delivering lessons. One week of classroom teaching was intended to be used for the observation. However, two weeks were spent due to cancellation of scheduled lessons on holidays that fell on working days and rescheduling of lessons because teachers were absent from school.

During the observation, an observation check list was used to capture and record important occurrences since permission was not granted for video and audio recordings. The observation allowed the researcher to ascertain Social Studies teachers' use of ICT in teaching Social Studies. Bell (2008) believed that observation is useful in determining what people actually do or how they actually behave in their context. The

researcher used the data from the observation to validate the teacher's responses from the questionnaire about how they use ICT in teaching Social Studies.

### **3.7 Validity**

Validity of a research instrument is determined by how well it measures the concept(s) it is intended to measure (Awanta & Asiedu-Addo, 2008; Ruland, Bakken & Roislien, 2007). It indicates the degree to which an instrument measures the construct under investigation. In order to establish the validity of the research instruments, the face and content validity were done.

#### **3.7.1 Face Validity**

The researcher gave the instrument to colleagues and other graduate students of the University of Education, Winneba and the supervisor to establish the face validity of the instruments. They were requested to carefully and systematically scrutinize and assess the instrument for its relevance and face validity. Issues such as length of questions, framing of questions, and ambiguity were considered. The feedback from colleagues and the supervisor were factored into the final preparation of the instrument.

#### **3.7.2 Content Validity**

Cooper and Schindler (2008) suggested that, content validity is a measure that gauges whether there is adequate coverage of all the research questions. It indicates whether the techniques assess or measures what it is supposed to measure. (Ruland, Bakken & Roislien, 2007).

According to Cooper and Schindler (2008), there are two ways of determining content validity. Firstly, the designer may determine it through a careful definition of the topic of concern, the items to be scaled, and the scale to be used. Secondly, the researcher's

supervisor who is an expert may judge how well the instrument meets the standard. Based on this knowledge, suggestions of my supervisor who is an expert was sought to content validate the instruments.

### **3.8 Reliability**

Reliability refers to the consistency of a measure. (Cooper & Shchindler, 2008). A test is reliable if we get the similar result repeatedly, that is, the extent to which results are consistent over time and if the results of a study can be reproduced under a similar methodology. (Joppe, 2000). The data from the pilot test was used to determine the Cronbach alpha reliability coefficient of the ICT Integration questionnaire.

The Cronbach alpha value was 0.75. Experts argued that Cronbach alpha coefficient should be at least 0.70 to be indicative of high reliability (McMillan & Schumacher, 2010). Similarly, Patton (2002) argued that an item with reliability coefficient of between 0.70 and 0.90 has excellent internal consistency and measures what it purports to measure. Based on these assertions, the instrument was judged to be of high reliability, and, therefore, suitable for data collection for the study.

The researcher sought expert's advice to determine the reliability of the observational guide and the semi-structured interview guide. The criteria used were; credibility, transferability, thus, it should be usable in other places, dependability, thus their consistency over time and conformability, thus, how well suited they are with the objectives of the study. To achieve credibility, the researcher used observational guide and semi-structured interview guide to collect qualitative data for the study.

### **3.9 Credibility**

Anney (2014) opined that, credibility is the confidence that can be placed on the truth of a research finding. Credibility of a qualitative study can be ensured through triangulation. This involves the use of two or more methods of data collection in a study of some aspects of human behaviour (Cohen et al, cited in Kusi, 2012). The researcher used two different method of data collection thus, non-participant observation and interview to collect qualitative data to ensure credibility of the study, and also presented collected data to participants to verify.

### **3.10 Dependability**

Bitsch (2005) argued that, dependability is the stability of findings over time. One can ensure the dependability of the conclusions of a study by asking clear questions, reducing bias and subjectivity during data collection; and triangulating the data. Also peer examination; explanation of your positionality and audit trail (Merriam & Associates, 2002; Schwandt & Halpin, 1988). To ensure the dependability of the study, the researcher submitted data for external audit by a lecturer in the department of Basic Education who was not involved in the research process to examine the process and product of the study.

### **3.11 Confirmability**

Anney (2014) argued that, confirmability is a prove that data and interpretation of findings are not fabrications from the researcher's imaginations, but are truly derived from participants. To establish the confirmability of the qualitative findings, the researcher highlighted every step of data analysis that was made and research findings grounded in the evidence of the raw data. This was presented to the researcher's supervisor for verification.

### **3.12 Pilot Testing of Instruments**

A pilot test was carried out on the instruments to further analyze the content validity and determine the construct validity as well as the reliability where applicable. To determine the strength and weaknesses of the ICT integration questionnaire, was pilot tested in the Effutu Municipality of the Central Region. A total sample of twenty-five (n= 25) Social Studies teachers were conveniently sampled for the pilot-test. The researcher used this sampling technique after taking into consideration time and other resources at his disposal. The researcher chose the municipality because it was deemed to have exhibited similar characteristics such as economic activities, social life, climate and others as that of Gomoa West district where the study was conducted. The observational guide was also pilot-tested. Pilot-testing the instruments enabled the researcher to modify items that were difficult to understand, reduce ambiguities and incorporate new categories of responses that were identified as relevant to the study (Awanta & Asiedu-Addo, 2008).

### **3.13 Data Collection Procedure**

The researcher personally administered the questionnaire, and also conducted the observation and interview. The researcher obtained letter of introduction from the Department of Basic Education of the University of Education, Winneba, which was used to obtain permission from the District and Heads of Junior High Schools to carry out the study. The Educational Director subsequently granted permission to the researcher in order to have access to the participants.

The researcher personally met with the teachers of the various schools to familiarize with them and also gave them two weeks' notification about the study. The researcher informed the teachers about the purpose of the study and they were assured of the

confidentiality and the fact that their anonymity will be protected. Data were collected in three phases. The first phase involved the distribution of letters and getting acquainted with teachers, the second phase involved administration of the questionnaires. The third phase involved observations and interviews. The arrangement in Table 3.2 guided the data collection phase of the study.

**Table 3.2 Schedule of data collection**

<b>Visit</b>	<b>Purpose</b>
First visit	Distribution of letters and getting acquainted with teachers
Second visit	Administration of questionnaires
Third visit	Classroom observation and interview of selected teachers

The researcher undertook a familiarization visit to schools in the District to distribute letters and also explain the purpose and benefit of the study to the teachers. Two weeks later, the researcher met with the teachers and gave them the questionnaires to answer.

Two weeks after the collection of the questionnaire, the researcher visited the selected schools to observe the lesson of the 5 teachers sampled for the qualitative phase of the study. One teacher was observed and interviewed each day. The observation lasted for five days. The researcher observed and ticked the use and integration of ICT tools by the teacher in the process of lesson delivery. The following keys were used to score participant's performance on the observation schedule: 1= means Presence and 0= means No presence. In order to maintain confidentiality in this study, the researcher used symbols, T1, T2, T3, T4 and T5 to represent each of the participants. The participants were allowed to select a topic and design their own lesson. Each

participant's lesson was observed once and each observation lasted for about 70 minutes. Notes were taken on other issues such as the topic for the lesson, teaching and physical arrangement of the classroom. Each participant was interviewed immediately after the observation. The researcher further probed the participants for more information. Each interview lasted for about thirty-five minutes. The interviews, with the permission of the interviewees were tape recorded and later transcribed by the researcher. The whole data collection process was undertaken in the second term of 2017/2018 academic year, specifically, February to April, 2018.

### **3.14 Data Analysis**

According to Berg (2001), data analysis involves the breaking up of data into manageable themes, patterns, trends and relationships. The data collected for the study were analysed separately as quantitative and qualitative data.

#### **3.14.1 Quantitative data**

The quantitative data were collected through the ICT integrated questionnaire. Descriptive statistics in the form of frequency counts and percentages were used to analyze the quantitative data with the help of Statistical Product for Service Solution (SPSS) software version 20. Data obtained from part I of the ICT integration instrument were used to understand the background information of the participants.

That of part II was also organized into frequencies and percentages and used to describe teachers' content and pedagogical knowledge of ICT. This was used to answer research question one. Also, frequency counts and percentages were used to organize data from the third part of the ICT integration questionnaire which described the use of ICT in teaching Social Studies. This was used to answer research question three.



### 3.14.2 Qualitative data

The qualitative data were obtained from the open-ended items on the fourth part of the ICT integration questionnaire. Interviews and lessons observed were analyzed thematically in order to answer the research questions. Based on the responses to the questionnaire items, codes were assigned to each item, and themes were identified in the process. The responses were then organized into the themes and analyzed. The data collected through the observational schedule were used to validate the teachers' responses on the questionnaire.

Interview data collected from teachers were used to explore the Social Studies teachers' perception about the use of ICT in teaching Social Studies. All interviews were audio-taped after the researcher sought permission from the participants and later transcribed by listening to the tapes severally, the researcher transcribed the recording word-for-word. The researcher later read through the texts to identify emerging themes. The themes results were then analyzed using emerging themes to support the finding from the questionnaires. Verbatim quotations were used to support the discussions. This was used to answer research question two.

The data collected through the observational schedule and interview were used to validate the teachers' responses on the questionnaire which described the use of ICT in teaching Social Studies into mean scores and standard deviations. This was used to answer research question three. Data from part "D" from the questionnaire and the interview were analyzed and used to answer research question four.

### **3.15 Ethical Consideration**

Ethical issues that were considered in this study were the permission to collect data, confidentiality, anonymity and the protection of participants (Berg, 2001; Patton, 2002).

### **3.16 Confidentiality**

The participants were assured that all the information obtained would be treated as confidential. That is, data were only used for stated purposes and no other person had access to them. The names of teachers and schools were coded and not released in the research. Also, the names of teachers were not needed on the questionnaire and respondents were informed before they filled the questionnaire (Berg, 2001; Cooper & Schindler, 2008; Patton, 2002). The learning atmosphere in the schools were not disturbed during the data collection process and the data collected through questionnaires, interviews and observations were kept confidential and made available only to persons who had direct interest in this study. Computer data were protected by a password. At the end of the process, all documents were shredded and tapes were deleted.

### **3.17 Anonymity**

The researcher ensured that no one could identify the participants from the information provided. This was done by not indicating names, addresses and particular names of individual schools of participants. All these were not indicated on the formal report presented.

## CHAPTER FOUR

### RESULTS AND DISCUSSION

#### 4.0 Overview

This chapter presents the results of the data analysis and discusses each of the four research questions. Quantitative data were used to answer research question 1, both quantitative and qualitative data were used to answer research questions 2, 3. and 4. The study explored Social Studies teachers' knowledge and use of ICT in teaching Social Studies.

The questionnaire was administered to 77 Social Studies teachers in the Gomoa West district in the Central Region of Ghana. All the 77 participants completed their questionnaire and returned them. This therefore recorded a return rate of 100%.

The following questions were examined:

1. What is the knowledge of JHS Social Studies teachers in ICT in the Gomoa West District?
2. How do JHS Social Studies teachers in of Gomoa West district perceive the use of ICT in teaching Social Studies?
3. How do JHS Social Studies teachers use ICT in teaching of Social Studies in Gomoa West District?
4. What challenges are associated with the use of ICT in teaching Social Studies in JHS of Gomoa West district?

The results of the data using three instruments: questionnaire, semi-structured interview and an observation guide are presented in five sections. The first section provides the demographic characteristics of the participants. The other four sections provided

answers to research question one, two, three and four respectively, this is followed by discussion of each question.

#### 4.1 Demographic Information of Participants

The demographic information of participants was collected. The results of the analysis of item 1 to 4 under part “A” of the questionnaire are shown in Table 4.1

**Table 4.1: Summary of Demographic characteristics of Social Studies teachers in Gomoa West district (n = 77)**

Demographic factors	Category	Frequency	Percentage (%)
Sex	Male	53	68.8
	Female	24	31.2
<b>Total</b>		<b>77</b>	<b>100</b>
Age	20 – 25	9	11.6
	26 – 30	25	32.5
	31 – 35	32	41.6
	36 – 40	5	6.5
	Above 40	6	7.8
<b>Total</b>		<b>77</b>	<b>100</b>
No. years in teaching Social Studies	Less than 3 years	25	32.5
	3 – 5 years	22	28.5
	6 – 8 years	13	16.9
	Above 9 years	17	22.1
<b>Total</b>		<b>77</b>	<b>100</b>
Highest professional qualification	Cert. A	1	1.2
	Diploma	37	48.1
	Degree	34	44.2
	Post Graduate	5	6.5
<b>Total</b>		<b>77</b>	<b>100</b>

From Table 4.1 the data show, 53 (68.8%) of the participants are males, 24 (31.2%) of the participants are females. This indicates that the district has more male Social Studies teachers than female Social Studies teachers.

Also, it is indicated from Table 4.1 that, nine (11.7%) of the participants were between the ages of 20 – 25 years, 25 (32.5%) were between the ages of 26 – 30 years, five (6.5%) of the participants had their ages between 36 – 40 years, a number of six (7.8%) were above age 40 years. It is observed that most Social Studies teachers in the Gomoa West district are between the ages of 31 -35 years.

Furthermore, it was deduced from Table 4.1 that, majority of Social Studies teachers, 25(32.5%) had less than 3 years of teaching experience of the subject Social Studies. This was followed by a number of 22 (28.6%) participants who had 3 – 5 years of teaching experience in Social Studies, 13(16.9%) of participants had teaching experience of 6 – 8 years, with participants who had above 9 years of teaching experience of the subject, Table 4.1 recorded 17(22.1%).

In addition, the highest number of Social Studies teachers were those with Diploma in Basic Education as their highest professional qualification, that is 37(48.1%). This was followed by a number of 34(44.2%) teachers with Degree as their highest professional qualification, five (6.5%) teachers had post graduate degree as their highest professional qualification, one (1.3%) participant had Cert A as the highest professional qualification.

#### **4.2 Research question 1: *What is the knowledge of JHS Social Studies teachers in ICT?***

This research question sought to find out the content and practical knowledge of JHS Social Studies teachers in ICT. Part “B” of the ICT Integration Questionnaire which consisted of four points Likert scale, sought to find out the content and practical knowledge of Social Studies teachers. Data collected in answer to research question 1 are presented in Tables 4.2 and 4.3.

Table 4.2 explores Social Studies teachers' content knowledge in ICT. In the Table, F = Frequency, SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree, T = Total.

**Table 4.2: Social Studies teachers' content knowledge in ICT.**

Items	SA		A		D		SD		T	
	F	(%)	F	(%)	F	(%)	F	(%)	F	(%)
Technology literacy is the ability to effectively, use technology to access, evaluate, integrate, create and communicate information to enhance the learning process .	45	(58.4)	28	(36.4)	3	(3.9)	1	(1.3)	77	100
Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources	35	(45.5)	38	(49.4)	3	(3.9)	1	(1.3)	77	100
Technology integration is the use of technology tools in general content areas in education.	31	(40.3)	43	(55.3)	1	(1.3)	2	(2.6)	77	100
The six main parts of a computer are Monitor, Keyboard, CPU, Main Memory, Internal Storage, and Power Supply.	28	(36.4)	41	(53.2)	4	(5.2)	4	(5.2)	77	100
ICT tools such as smart phones, computers, Tablets, smart TVs, projector, radio, modem, smart board, scanner, digital camera can be used to teach Social Studies.	44	(57.1)	28	(36.4)	3	(3.9)	2	(2.6)	77	100
Multimedia refers to the marriage of video, sound, graphics, text and images within a single information delivery system	27	(35.1)	40	(51.9)	4	(5.2)	6	(7.8)	77	100
Map Maker Tool Kit, National Geography 3-D Earth, Google Earth, Encarta encyclopedia are some of the software used in teaching Social Studies.	23	(29.9)	51	(66.2)	1	(1.3)	2	(2.6)	77	100
Technology offer multiple options for lesson delivery	46	(59.7)	24	(31.2)	0		7	(9.1)	77	100

The data in Table 4.2 indicate that, 45 (58.4%) respondents strongly agreed to the fact that Technology literacy is the ability to effectively, use technology to access, evaluate, integrate, create and communicate information to enhance the learning process through problem-solving and critical thinking, 28 (36.4%) agreed to the statement. However, 3 (3.9%) disagreed, and 1 (1.3%) strongly disagreed to the statement. In all, 73 (94.8%) of respondents agreed and strongly agreed to the statement while 4 (5.2%) of respondents disagreed and strongly disagreed to the statement.

In respect of the statement that, Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources. 35 (45.5%) of the respondents strongly agreed to it and 38 (49.4%) agreed to the statement. However, 3 (3.9%) of the respondents disagreed and 1 (1.3%) respondent strongly disagreed to the statement. In all, 73 (94.8%) of the respondents agreed and strongly agreed while 4 (5.2%) disagreed and strongly disagreed to the statement.

Also, the results had 31 (40.3%) respondent strongly agreeing and 43 (55.3%) agreeing to the statement that Technology integration is the use of technology tools in general content areas in education in order to allow students to apply computer and technology skills to learning and problem solving. But, 1(1.3%) respondent disagreed and 2 (2.6%) respondents strongly disagreed with the statement.

Table 4.2 further show that, 28 (36.4%) of the respondents strongly agreed and 41 (53.2%) of the respondents agreed that, the six main parts of a computer are Monitor, Keyboard, CPU, Main Memory, Internal Storage, and Power Supply. However, 4 (5.2%) of the respondents disagreed and 4 (5.2%) strongly disagreed to this statement.

In totality, 69 (89.6%) of the respondents agreed and strongly agreed while 8 (10.4%) of the respondents disagreed and strongly disagreed to the statement.

Also, 44 (57.1%) of the respondents strongly agreed and 28 (36.4%) of the respondents agreed that, ICT tools such as smart phones, computers, ipad, Tablets, smart TVs, projector, radio, modem, smart board, scanner, digital camera can be used to teach Social Studies. Meanwhile, 3 (3.9%) disagree and 2 (2.6%) strongly disagree. So there were 72 (93.5%) of the respondents agreed and strongly agreed while 5 (6.5%) of the respondents disagreed and strongly disagreed to the statement.

Furthermore, 27 (35.1%) of the respondents strongly agreed and 40 (51.9%) of the respondents agreed that, multimedia refers to the marriage of video, sound, graphics, text and images within a single information delivery system, while 4 (5.2%) of the respondents disagreed and 6 (7.8%) of the respondents strongly disagreed to this statement. Thus, 67 (87%) of the respondents agreed and strongly agreed while 10 (13%) of the respondents disagreed and strongly disagreed to this statement.

Also from Table 4.2, it indicates that 28 (36.4%) of the respondents strongly agreed, 41 (53.2%) of the respondents agreed, 6 (7.8%) of the respondents disagreed and 2 (2.6%) strongly disagreed that, multimedia help teachers and students assemble multiple types of information about topics in the form of photographs, video and animation sequences, charts and graphs, text, sound, and graphics. In all, 69 (89.6%) agreed and strongly agreed and 8 (10.4%) disagreed and strongly disagreed.

It is also noted from the Table that, 23 (29.9%) of the respondents strongly agreed, 51 (66.2%) agreed, 1 (1.3%) disagreed and 2 (2.6%) strongly disagreed with the statement that Map Maker Tool Kit, National Geography 3-D Earth, Decisions, Decisions 5.0,



Time liner 5.0, Google Earth, Encarta encyclopedia are some of the software used in teaching Social Studies. Thus, 74 (96.1%) agreed and strongly agreed while 3 (3.9%) disagreed and strongly disagreed to the statement.

With the statement “Technology offer multiple options for lesson delivery”, 46 (59.7%) of the respondents strongly agreed and 24 (31.2%) agreed. However, 7 (9.1%) strongly disagreed to the statement. In all, 70 (90.9%) of the respondents agreed and strongly agreed while 7 (9.1%) disagreed to it.

The statements in Table 4.2, were in the affirmative or true. So agreeing to the statement indicated that one has knowledge in the area. It is observed that, most Social Studies teachers agreed and strongly agreed with the statements, hence, could be concluded that the teachers agreed to have possessed content knowledge in ICT.

Table 4.3 looks at the Social Studies teachers’ practical knowledge in ICT. In the Table 4.3, F = Frequency, SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree, T = Total.

Table 4.3 looks at the Social Studies teachers’ practical knowledge in ICT. In the Table 4.3, F = Frequency, SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree, T = Total.

**Table 4.3: Social Studies teachers' practical knowledge in ICT.**

Items	SA		A		D		SD		T	
	F	(%)	F	(%)	F	(%)	F	(%)	F	(%)
I can use word processor to teach Social Studies comfortably and effectively.	12	(15.6)	34	(44.2)	17	(22.4)	14	(18.2)	77	100
I can use spreadsheet to input and analyze learners' results and performance effectively	41	(53.2)	23	(29.9)	4	(5.2)	9	(11.7)	77	100
I can use power point or any other presentation software to teach in my Social Studies lesson effectively.	22	(28.6)	40	(51.9)	5	(6.5)	10	(13.0)	77	100
I can use most of the Social Studies subject software in teaching Social Studies.	22	(28.5)	35	(45.5)	7	(9.1)	13	(16.9)	77	100
I can use memory stick to transfer data	22	(28.5)	31	(40.3)	10	(13.0)	14	(18.2)	77	100
I can install new software on a computer	37	(48.1)	17	(22.1)	12	(15.5)	11	(14.3)	77	100
I can install a printer	20	(26.0)	25	(32.5)	13	(16.8)	19	(24.7)	77	100
I can solve technical problem(e.g. a computer that does not start properly)	8	(10.4)	33	(42.8)	19	(24.7)	17	(22.1)	77	100
I can log in to an educational website and access information.	40	(51.9)	26	(33.8)	2	(2.6)	9	(11.7)	77	100
I can transfer information from a website to a word processing document or power point	38	(49.4)	23	(29.8)	7	(9.1)	9	(11.7)	77	100
I can create and manage my email.	42	(54.5)	26	(33.8)	1	(1.3)	8	(10.4)	77	100

The data in Table 4.3 reveal that, 12 (15.6%) of the strongly agreed and 34 (44.2%) agreed that they can use word processor to teach Social Studies comfortably and effectively whiles 17 (22.4%) disagreed and 14 (18.2%) strongly disagreed that they can use word processor to teach Social Studies comfortably and effectively. Thus, 46 (59.8%)

agreed and strongly agreed while 31 (40.6%) disagreed and strongly disagreed to the statement.

Also, 41 (53.2%) of the respondents strongly agreed and 23 (29.9%) agreed that they can use spreadsheet to input and analyze learners' results and performance effectively while 4 (5.2%) disagreed and 9 (11.7%) strongly disagreed that they can use spreadsheet to input and analyze learners' results and performance effectively. Therefore, in total, 64 (83.1%) agreed and strongly agreed while 13 (16.9%) disagreed and strongly disagreed.

With the statement, "I can use power point or any other presentation software to teach in my Social Studies lesson effectively", 22 (28.6%) of the respondents strongly agreed and 40 (51.9%) agreed to it while 5 (6.5%) disagreed and 10 (13.0%) strongly disagreed to the statement. So in all, 62 (80.5%) agreed and strongly agreed while 15 (19.5%) disagreed and strongly disagreed.

Also from Table 4.3, the data reveal that, 22 (28.5%) of the respondents strongly agreed and 35 (45.5%) agreed that they can use most of the Social Studies subject software in teaching Social Studies. However, 7 (9.1%) disagreed and 13 (16.9%) strongly disagreed that they can use most of the Social Studies subject software in teaching Social Studies. Thus, 57 (74%) agreed and strongly agreed, however, 20 (26%) disagreed and strongly disagreed.

Data in Table 4.3 further reveal that, 22 (28.5%) of the respondents strongly agreed and 31 (40.3%) agreed to the statement that they can use memory stick to transfer data while 10 (13.0%) disagreed and 14 (18.2%) strongly disagreed to the statement. Thus, 53 (68.8%) agreed and strongly agreed while 24 (31.2%)

It is also noted from the Table that, 37 (48.1%) of the strongly agreed and 17 (22.1%) agreed to the statement “I can install new software on a computer” while 12 (15.5%) disagreed and 11 (14.3%) strongly disagreed to this statement. Thus, 54 (70.1%) agreed and strongly agreed while 23 (29.9%) disagreed and strongly disagreed to the statement.

Again, 20 (26.0%) of the strongly agreed and 25 (32.5%) agreed that they can install a printer while 13 (16.8%) disagreed and 19 (24.7%) strongly disagreed that they can install a printer. Thus, 45 (58.5%) agreed and strongly agreed to this statement while 32 (41.5%) disagreed and strongly disagreed.

Furthermore, the data also show that 8 (10.4%) of the respondents strongly agreed and 33 (42.8%) agreed that they can solve technical problem (e.g. a computer that does not start properly) but 19 (24.7%) of the respondents disagreed and 17 (22.1%) strongly disagreed that they can solve technical problem (e.g. a computer that does not start properly). In totality, 41 (53.2%) agreed and strongly agreed while 36 (46.8%) disagreed and strongly disagreed.

The statement “I can log in to an educational website and access information” had 40 (51.9%) respondents strongly agreed and 26 (33.8%) agreed to it while 2 (2.6%) disagreed and 9 (11.7%) strongly disagreed to the statement. Thus, 66 (85.7%) of the respondents agreed and strongly agreed while 11 (14.3%) disagreed and strongly disagreed to the statement.

The data in Table 4.3 also show that, 38 (49.4%) of the respondents strongly agreed and 23 (29.8%) agreed to the statement “I can transfer information from a website to a word processing document or power point”, but 7 (9.1%) respondents disagreed and 9

(11.7%) strongly disagreed to it. That is, 61 (79.2%) agreed and strongly agreed but 16 (20.8%) disagreed and strongly disagreed.

Data from Table 4.3 also show that 42 (54.5%) of the respondents strongly agreed and 26 (33.8%) agreed that they can create and manage their email. However, 1 (1.3%) disagreed and 8 (10.4%) strongly disagreed that they can create and manage their email. Thus, 68 (88.3%) agreed and strongly agreed while 9 (11.7%) disagreed and strongly disagreed to the statement.

In summary, the statements in Table 4.2 and Table 4.3, were in the affirmative or true. So agreeing to the statement indicated that one has knowledge in the area. It is observed that, greater number and percentage of the Social Studies teachers agreed and strongly agreed with the statements, hence, suggested that the teachers agreed to have possessed content and practical knowledge in ICT.

This is in consonance with Mishra and Koehler's (2006) assertion who argued that, technological content knowledge is the basis of good teaching with technology and requires that educators understand the representation of concepts using technologies and the knowledge of what makes concepts difficult or easy to learn and how technology can help redress some of the problems that student's face. They further posited that, a Social Studies teacher needs to be social scientist (problem-solving approach), a knowledge transmitter and a social inquirer to fully navigate his/her technological and content knowledge during teaching and learning process. With regard to the teaching of contemporary issues in the Social Studies, the social inquirer and the social scientist will be more appropriate so that learners will be put at the center of learning to discover solutions to problems themselves.

**Research question 2: *How do JHS Social Studies teachers in Gomoa West district perceive the use of ICT in teaching Social Studies?***

This research question sought to find out the opinions or viewpoints of Social Studies teachers about the use of ICT in teaching Social Studies. Some items in part “B” and “D” of the questionnaire sought to look at Social Studies teachers’ perception about their knowledge in ICT. Interview was also used to explore their perception about ICT integration in teaching Social Studies.

Data gathered in answer to this research question have been presented in Table 4.4. In the Table, F = Frequency, SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree, T = Total.

**Table 4.4: Social Studies teachers’ perception about their knowledge in ICT.**

Item	SA	A	D	SD	T
I see myself literate in the context of technology	28 (36.4)	37 (48.1)	5 (6.5)	7 (9.1)	77 (100)

The data from Table 4.4 indicate that 28 (36.4%) of the respondents strongly agreed and 37 (48.1%) agreed with the statement “I see myself literate in the context of technology” whiles 5 (6.5%) disagreed and 7 (9.1%) strongly disagreed to the statement.

An interview with some Social Studies teachers also revealed that Social Studies teachers see themselves as technology literates. Some Social Studies teachers had this to say,

T1: *“I believe I have knowledge in ICT, I even help other teachers when they have problems with their computers and mobile phones. And I believe I can integrate ICT in teaching Social Studies.*

It is observed that most Social Studies teachers agreed that they see themselves as literates in the context of technology and can use ICT to teach. However, some of the teachers do not see themselves literates in the context of technology and can use it to teach. Park (2009) observed that achieving success in programs that propose to include technologies in education is often quite challenging. Consequently, innovators and designers of electronic products (such as IBM and Xerox) have often preferred to measure user perceptions before introducing any technology anywhere, including the school place.

Table 4.5 looks at how the use of ICT influence the teaching of Social Studies. In the table, F = Frequency, % = Percentage, T = Total.

**Table 4.5: Will the use of ICT influence the teaching of Social Studies?**

<b>Response</b>	<b>F</b>	<b>(%)</b>
Yes	43	55.8
No	34	44.2
<b>Total</b>	<b>77</b>	<b>100.0</b>

Results from Table 4.5 show that, 44 (55.8%) of the respondents indicated that the use of ICT will influence the teaching of Social Studies whiles 34 (44.2%) indicated that the use of ICT will not influence the teaching of Social Studies.

Table 4.6 looks at how the use of ICT will influence the teaching of Social Studies. In the Table, F = Frequently, % = Percentage, T = Total.

**Table 4.6: Use of ICT and its influence on Social Studies lesson.**

<b>How will the use of ICT influence the teaching of Social Studies?</b>	<b>F</b>	<b>(%)</b>
It will bring about effective and better lesson delivery	10	23.3
Learners will understand lesson better	2	4.7
Lesson will become more interactive	9	20.9
lesson will be easy to teach and learners will understand easily	21	48.8
Teacher will feel confident in teaching	1	2.3
<b>Total</b>	<b>43</b>	<b>100.0</b>

Data from Table 4.6 reveal that in answering the question about how the use of ICT will influence the teaching of Social Studies, 10 (23.3%) of the respondents stated that the use of ICT will aid effective and better lesson delivery, 2 (4.7%) stated that the use of ICT will help learners understand lesson better, 9 (20.9%) stated that it will help make lessons become more interactive, 21 (48.8%) stated that the use of ICT will make it easy to teach lessons and learners will understand lessons easily and 1 (2.3%) respondent stated that it will make the teacher feel confident in teaching.

A respondent who was interviewed had this to say; *“it is a good idea to integrate ICT in teaching Social Studies, today’s pupils like computer and mobile phones, so if you use them to teach them, they will have the interest to learn the subject”*.

Most of the Social Studies teachers believed ICT integration in teaching of Social Studies is a good idea which will bring many advantages to the Social Studies lesson. Smeets & Mooij (2001) asserted that, ICT can enhance the quality of education in several ways, by increasing learner motivation and engagement, by facilitating the



acquisition of basic skills, and by enhancing teacher training. ICT is also transformational tools which, when used appropriately, can promote the shift to a learner centered environment. ICT, especially computers and Internet technologies, enable new ways of teaching and learning rather than simply allow teachers and students to do what they have done before in a better way.

Table 4.7 looks at the Social Studies teachers' interest in integrating ICT in teaching Social Studies. In the table, F = Frequency, % = Percentage, T = Total.

**Table 4.7: Do you have the interest to integrate ICT in teaching Social Studies?**

<b>Response</b>	<b>F</b>	<b>(%)</b>
Yes	59	76.6
No	18	23.4
<b>Total</b>	<b>77</b>	<b>100.0</b>

Results from Table 4.7 show that, 59 (76.6%) of the respondents indicated that they have interest to integrate ICT in teaching Social Studies, however, 18 (23.4%) respondents responded they had no interest to integrate ICT in teaching Social Studies. The implication is that the Social Studies teachers have mixed interest in relation to integration of ICT in teaching Social Studies, but a greater number of Social Studies teachers agreed to have interest to integrate ICT in teaching Social Studies.

An interview with some of the Social Studies teachers also revealed their mixed interest to integrate ICT in teaching Social Studies.

T3 stated, *“Oh yes, I have the interest to use ICT to teach Social Studies, most of the issues in Social Studies are abstract and the pupils find it difficult in understanding*

*them, but if you use the computer and other tools to teach, the pupils will see and feel the issues. They will understand the issues more.”*

T1 stated that, *“ICT is interesting and most people are interested in it, yes I will like to use it to teach Social Studies because I know my pupils are interested in ICT too.”*

T5 stated that, *“even though I can use ICT tools to teach Social Studies, I find it time wasting and I don’t have the interest to integrate ICT in teaching Social Studies. After all, the pupils learn ICT as a subject.”*

In exploring the perception of Social Studies teachers about the use of ICT in teaching Social Studies, most of the respondents saw themselves as technology literates who could integrate ICT in teaching of Social Studies. They also believed that ICT integration will help in teaching and learning of Social Studies and expressed interest to integrate ICT in teaching Social Studies. However, few of them had opposing views and perceptions.

Zhao (2007) argued that, the powerful state of a particular technology and the extent to which it is used in the teaching and learning process is greatly determined by the attitudes teachers or users have towards it. This implies that the integration of technology into the curriculum is not likely to succeed without teachers’ acceptance and commitment to technology use.

Mikre (2011) also opined that, teachers’ attitude plays an important role in the teaching-learning process that utilizes computers and internet connections.

**Research question 3: *In what ways do JHS Social Studies teachers use ICT in teaching Social Studies in Gomoa West District?***

The research question sought to explore the various ways Social Studies teachers integrate ICT in teaching Social Studies and if they actually use ICT to teach Social Studies. Items in part “C” of the questionnaire and an observation schedule were designed to achieve this. The data gathered in response to this research question have been presented in Tables 4.8 and 4.9. In the Tables F = Frequency, % = Percentage, T = Total.



**Table 4.8: Social Studies teachers' use of ICT in teaching Social Studies**

Questions	Items	F	(%)
How often do you use computers at school?	On most days	12	15.6
	At least once a week	26	33.8
	At least once a month	39	50.6
	<b>Total</b>	<b>77</b>	<b>100.0</b>
For which of the following purposes do you use ICT at school?	personal, non-professional use	19	24.7
	school administration	9	11.7
	recording marks using spreadsheet	20	26.0
	typing exam papers	7	9.1
	finding information and resources on the internet	16	20.8
	None of the above	6	7.8
<b>Total</b>	<b>77</b>	<b>100.0</b>	
In which of the following ways do your learners use ICT in your Social Studies' lesson.	Using Social Studies subject's specific software	7	9.1
	Using the internet to research information	41	53.2
	Working on projects	3	3.9
	Solving problem, making decision or forming opinions	5	6.5
	My learners do not use ICT in class	21	27.3
	<b>Total</b>	<b>77</b>	<b>100</b>
In which of the following ways do you use ICT with learners whilst teaching Social Studies?	Using the word processor	5	6.5
	Using the spreadsheet	5	6.5
	Using presentation software	13	16.9
	Using subject specific software, eg. Encarta	10	13.0
	Using the internet	24	31.2
	Using other application not listed above	3	3.9
	I do not use ICT with my learners	17	22.1
	<b>Total</b>	<b>77</b>	<b>100.0</b>
Do you use any of the following technologies for teaching and learning of Social Studies?	Television	13	16.9
	Radio	4	5.2
	Digital camera	5	6.5
	Data projectors	9	11.7
	None of the above	46	59.7
	<b>Total</b>	<b>77</b>	<b>100.0</b>

Data from Table 4.8 reveal that, in respect to the question, how often do you use computers at school? 12 (15.6%) of the respondents indicated that they use computers on most days, 26 (33.8%) indicated that they use computers at least once a week, 39 (50.6%) indicated using computers at least once a month. It is noticed that most Social

Studies teachers do not use computers so often as most of them indicated that they use computers at least once a month.

With the purposes in which Social Studies teachers use ICT at school, it is revealed from the data that 19 (24.7%) of the respondents use computers for personal and non-personal purposes, 9 (11.7%) indicated they used computers for school administration purposes, 20 (26. %) use computers for recording marks using spreadsheet, 7 (9.1%) use computers in typing exam questions, 16 (20.8%) use computers in finding information and resources on the internet and 6 (7.8%) use computer for none of the purposes mentioned. It could be concluded that most of the Social Studies teachers only use spreadsheet in computers to record marks also use the computers to find information and resources on the internet.

The data also reveal that, in answering the question, “In which of the following ways do your learners use ICT in your Social Studies’ lesson”, 5 (6.5%) of the respondents indicated that learners use specific software for Social Studies, 41 (53.2%) indicated that learners use the internet to research information, 3 (3.9%) indicated that learners use ICT in working on projects, 5 (6.5%) indicated using ICT in solving problem, making decision or forming opinions. However, 21 (27.3%) of the respondents indicated that their learners do not use ICT in class. It is shown from the data that greater number of learners only use ICT to research information and also a considerable number of them do not use ICT in Social Studies classes.

With the ways in which teachers use ICT with learners whilst teaching Social Studies, it can be from the data noticed that, 5 (6.5%) of the respondents indicated that they use the word processor, 5 (6.5%) indicated they use the spreadsheet, 13 (16.9%) use presentation software, 10 (13.0%) respondents indicated that they use subject specific

software such as Encarta, 24 (31.2%) respondents stated that they use the internet, 3 (3.9%) respondents stated that they use other application not listed, and 17 (22.1%) indicated that they do not use ICT with their learners. One can deduce from the data that greater number of the Social Studies teachers use the internet with their students in the Social Studies classroom, while a significant number of them do not use ICT with their learners in the Social Studies classroom.

Data in Table 4.8 also show that, in answering the question “Do you use any of the following technologies for teaching and learning of Social Studies”, 13 (16.9%) of the respondents stated that they use television, 4 (5.2%) stated they use radio, 5 (6.5%) use digital camera, 9 (11.7%) use digital projectors. However, 46 (59.7%) of the respondents indicated they do not use any of the ICT tools mentioned in teaching Social Studies.

It is observed from the data that a greater number of the Social Studies teachers use computers once a month, which is not a good sign of ICT integration in teaching, for effective integration of ICT in teaching, then teachers ought to use computers and other ICT tools on daily bases. With teachers who use computers, they only use the computers in recording and analyzing of pupils’ marks and typing of examination questions, and not in teaching their lessons. Most Social Studies teachers do not use some of the common ICT tools in the Social Studies classroom.

Table 4.9 shows data gathered from lesson observation with regards to the use of ICT in teaching Social Studies by the respondents. In the Table, 1 = means presence, 0 = means no presence. T1 = 1<sup>st</sup> teacher observed, T2 = 2<sup>nd</sup> teacher observed, T3 = 3<sup>rd</sup> teacher observed, T4 = 4<sup>th</sup> Teacher observed, T5 = 5<sup>th</sup> Teacher observed.

**Table 4.9 Matrix of use of ICT tools in Social Studies lessons by Social Studies teachers.**

S/N	Activity	T1	T2	T3	T4	T5
1	Presence of ICT tool in classroom	1	0	0	1	0
2	Use of ICT tool in teaching the lesson	0	0	0	1	0
	<b>Type of ICT tools used in teaching</b>	<b>T1</b>	<b>T2</b>	<b>T3</b>	<b>T4</b>	<b>T5</b>
3	Computer or Laptop	1	0	0	1	0
4	Projectors	0	0	0	1	0
5	Smartboards	0	0	0	0	0
6	Smartphones	0	0	0	1	0
7	Internet	0	0	0	0	0
	<b>Teacher's knowledge about the use of ICT tool</b>	<b>T1</b>	<b>T2</b>	<b>T3</b>	<b>T4</b>	<b>T5</b>
8	Right tool being used for the right activity	0	0	0	1	0
9	Presence of needed skills to use ICT tool to teach	0	0	0	1	0
	<b>Challenges faced with use of ICT tool in the lesson</b>	<b>T1</b>	<b>T2</b>	<b>T3</b>	<b>T4</b>	<b>T5</b>
10	ability to operate ICT tool effectivity	0	0	0	1	0
11	ICT tool functioned properly	0	0	0	1	0

Results from Table 4.9 show that, out of the five Social Studies teachers' lessons observed, presence of ICT tool in the classrooms was only noticed in T1 and T4 lessons, T2, T3 and T5 had no ICT tool in their classrooms. However, the Use of ICT tool in teaching a lesson was only noticed in T4's lesson, even though T1 had a laptop in the classroom, he did not use it in teaching the lesson. The type of ICT tools used in teaching were laptop, projector, smartphone for T4's lesson. The right tool being used

for the right activity and presence of needed skills to use ICT tool to teach were present in T4' lesson. Also, T4 demonstrated ability to operate ICT tool effectivity and the ICT tools functioned properly throughout the lesson. Furthermore, T2, T3 and T5 do not have any ICT tool present in the classroom and so cannot possibly use it or demonstrate any of the attributes that the researcher set to observe.

In summary, data in Table 4.8 and Table 4.9 reveal a poor use of ICT tools or ICT integration by Social Studies teachers in teaching Social Studies. It was interesting to note that, though the Social Studies teachers agreed to have possessed both content and practical knowledge of ICT, they do not use ICT in teaching Social Studies. Wilson-Strydom, Thomson & Hodgkinson-Williams (2005) posited that, the adoption and integration of technologies is a challenging and complex process for schools, particularly where there is limited previous experience in the use of ICTs to support teaching and learning. They further maintain that in many schools that have access to ICTs, the focus has tended to be on learning about ICTs rather than learning with or through the use of ICTs.

Success or failure of technology integration is largely dependent on factors beyond the technology. The availability of appropriate software for the technology being integrated is also problematic in terms of software accessibility to students and educators (Yu, 2013). Another issue identified with technology integration is the lack of long-range planning for these tools within the educative districts they are being used (Anderson, 1996).



**Research question 4: *What challenges are associated with the use of ICT in teaching Social Studies in JHS of Gomoa West district?***

This research question sought to explore the various challenges Social Studies teachers face and challenges that hinder the use of ICT in teaching Social Studies. Items in part “D” of the questionnaire and interview schedule were designed to achieve this. Table 4.10 seeks to find out whether the respondents have difficulties in using ICT tools in teaching. In the Table, F = Frequency, % = Percentage, T = Total.

**Table 4.10: Difficulty in using the ICT tools in teaching Social Studies**

<b>Response</b>	<b>F</b>	<b>(%)</b>
Yes	40	51.9
No	37	48.1
<b>Total</b>	<b>77</b>	<b>100.0</b>

From Table 4.10 it is observed that 40 (51.9%) of the respondents stated that they find it difficult using ICT tools in teaching Social Studies while 37 (48.1%) stated that they do not find it difficult in using ICT tools in teaching Social Studies.

One can conclude that; a greater number of the Social Studies teachers find it difficult in using ICT tools in teaching Social Studies. Mikre (2011) argued that, some teachers may have positive attitudes to the technology, but refrain from using it in teaching due to low self-efficacy, and tendency to consider themselves not qualified to teach with technology.

Data from Table 4.11 reveal the reasons why teachers find it difficult to use ICT tools in teaching Social Studies. In the Table, F = Frequency, % = Percentage, T = Total.

**Table 4.11: why?**

<b>Reasons why teachers find it difficult to use ICT tools in teaching Social Studies</b>	<b>F</b>	<b>(%)</b>
Lack of or inadequate knowledge and skills to use ICT tools	12	30.0
Inadequate training to use ICT tools	2	5.0
Unavailability of ICT tools in schools	25	62.5
Time wasting	1	2.5
<b>Total</b>	<b>40</b>	<b>100.0</b>

From Table 4.11, the data show that 12 (30.0%) of the respondents indicated that lack or inadequate knowledge and skills to use ICT tools make it difficult for them to use ICT tools in teaching Social Studies, 2 (5.0%) stated that they are untrained to use the ICT tools, 25 (62.5%) stated unavailable of ICT tools in schools as a reason that makes it difficult for them to use ICT tools in teaching Social Studies. However, 1 (2.5%) of the respondent indicated it is time wasting in using ICT tools in teaching Social Studies.

It can be observed from the data that there are a variety of factors such as lack of or inadequate knowledge and skills to use ICT tools, inadequate training of Social Studies teachers to use ICT tools, unavailability of ICT tools in schools and teachers' perceptions make it difficult for most of the Social Studies teachers to use ICT tools in teaching Social Studies.

Table 4.12 explore the presence of computers in schools. In the Table, F = Frequency, % = Percentage, T = Total.

**Table 4.12: Presence of computers in schools.**

<b>The presence of computers in schools</b>	<b>F</b>	<b>(%)</b>
Yes	35	45.5
No	42	54.5
<b>Total</b>	<b>77</b>	<b>100.0</b>

With the presence of computers in schools, results from Table 4.12 showed that 35 (45.5%) of the respondents said they had computers in their schools while 42 (54.5%) said they had no computers in their schools. The implication is that most schools had no computers.

Table 4.13 explore the number of computers in schools as against the number of pupils in JHS 3 in these schools. In the Table, F = Frequency, % = Percentage, T = Total.

**Table 4.13: Number of computers in schools as against number of JHS 3 pupils in these schools.**

<b>Number of computers in schools</b>	<b>Number on roll (JHS 3)</b>	<b>F</b>	<b>(%)</b>
1 - 4 computers	35 - 40	13	37.1
5 – 10 computers	30 - 35	9	25.7
11 – 15 computers	25 - 30	6	17.1
16 – 20 computers	20 -25	3	8.6
More than 20 computers	More than 40	4	11.4
<b>Total</b>		<b>35</b>	<b>100.0</b>

Results from Table 4.13 reveal that 13 (37.1) of the respondents stated that their schools had about 1 to 4 computers in the school as compared to a population of 35 - 40 JHS 3 pupils, 9 (25.7%) stated that their schools had about 5 to 10 computers as compared to a population of 30 - 35 JHS 3 pupils, 6 (17.1%) stated that their schools had about 11 to 15 computers as compared to a population of 25 - 30 JHS 3 pupils, 3 (8.6%) respondents stated that their schools had 16 to 20 computers as compared to a population of 20 - 25 JHS 3 pupils and 4 (11.4%) of the respondents stated their schools had more than 20 computers as compared to a population of more than 40 JHS 3 pupils. The JHS 3 classes were used because these classes had the least number on roll than JHS 1 and 2. The implication is that more of the schools had less computers than pupil population in their schools. With such a situation, it would be very difficult for ICT integration in teaching to be practiced effectively.

Table 4.14 reveal the presence of other ICT tools in schools. In the Table, F = Frequency, % = Percentage, T = Total.

**Table 4.14: Other ICT tools in schools**

<b>Presence of other ICT tools that help to integrate technology in teaching Social Studies</b>	<b>F</b>	<b>(%)</b>
Yes	16	20.8
No	61	79.2
<b>Total</b>	<b>77</b>	<b>100.0</b>

Data gathered from Table 4.14 show that 16 (20.8%) of the respondents stated that there were other ICT tools in their schools while 61 (79.2%) stated they had no other ICT tools in their schools.

Table 4.15 showed the type of other ICT tools in these schools, which are projectors, television, modem smartphones. In the Table, F = Frequency, % = Percentage, T = Total.

**Table 4.15: Names of other ICT tools in schools**

Type of ICT tools	Number in school	Population of pupils (JSH 3)	F	%
Projectors	1	20 – 25	2	12.5
Television	1	25 – 30	4	25
Modem	1	30 – 35	8	50
Smartphones	1	More than 35	2	12.5
<b>Total</b>			16	100

Data from Table 4.15 reveal that, 2 (12.5%) of the respondents stated that they have 1 projector in their respective schools with JHS 3 pupil population of 20 -25 pupils, 4 (25%) have one television in their schools with a population of 25 – 30 pupils, 8 (50%) have one modem in their schools with a population of 30 – 35 pupils, and 2 (12.5%) have one smartphone in their schools with more than 35 JHS 3 pupils. The implication is that these ICT tools in the schools are inadequate as compared to pupils' population in the school. Using these ICT tools to teach effectively will be problematic.

Table 4.16 explores the status of schools in relation to connectivity to the national grid. In the Table, F = Frequently, % = Percentage, T = Total.

**Table 4.16: Connection of school to the national grid.**

<b>Response</b>	<b>F</b>	<b>P</b>
Yes	38	49.4
No	39	50.6
<b>Total</b>	<b>77</b>	<b>100.0</b>

Results from Table 4.16 indicate that 38 (49.4%) of the respondents stated that their schools were connected to the national grid, while 39 (50.6%) stated that their schools had not been connected to the national grid. It is revealing that about half of the schools had no access to electricity, which is vital, when it comes to integration of ICT in teaching Social Studies.

Tinio (2002) argued that, the high cost of the technology and maintenance of the facilities, high cost of spare parts, virus attack of software and the computer, interruptions of internet connections, and poor supply of electric power are among the technology related limitations of ICT use in education. The infrastructure challenges that may exist are absence of appropriate buildings and rooms to house the technology, shortage of electric supply and telephone lines, and lack of the different types of ICTs.

Table 4.17 seek to find out whether in-service programs have been organized by GES or any NGO for teachers in the district. In the Table, F = Frequently, % = Percentage, T = Total.

**Table 4.17: Organization of in-service training on ICT by GES or any NGO.**

<b>Response</b>	<b>F</b>	<b>(%)</b>
Yes	40	51.9
No	37	48.1
<b>Total</b>	<b>77</b>	<b>100.0</b>

Data in Table 4.17 show that 40 (51.9%) of the respondents indicated that they have had in-service training on ICT while 37 (48.1%) indicated that they have had no in-service training. It is observed that a significant number of teachers have not had in-service training on ICT which will sharpen their skills and knowledge in ICT. Brosnan (2001) opined that, many teachers may not have the required IT skills and feel uncomfortable, nor do they have trainings needed to use the technology in their teaching. Unless teachers develop some basic skills and willingness to experiment with students, ICT use in education is in a disadvantage

Table 4.18 explore the number of times in-service programs organized by GES or any NGO in the district. In the Table, F = Frequently, % = Percentage, T = Total.

**Table 4.18: Number of times in-service training has been organized.**

<b>Number of times Ghana Education Service (GES) or any NGO organized in-service training on ICT for the past 2 years</b>	<b>F</b>	<b>(%)</b>
Once	27	67.5
Twice	11	14.3
Thrice	2	2.6
<b>Total</b>	<b>40</b>	<b>100.0</b>

Results from Table 4.18 show that 27 (67.5%) of the respondents have had in-service training on ICT only once for the past 2 years, 11 (14.3%) have had in-service training on ICT twice for the past 2 years and 2 (2.6%) respondents stated that they had in-service

training thrice for the past 2 years. One can conclude that the number of in-service training given to the Social Studies teachers on ICT is inadequate and this may affect their content and practical knowledge base of ICT and the possible integration of ICT in teaching Social Studies.

Tinio (2002) argued that, one impeding factor of ICTs integration in education systems is the skill gap of people implementing it. For instance, teachers need professional development to gain skills with particular applications of ICT, integration into existing curricula, curricular changes related to its use, changes in teacher role, and on underpinning educational theories such as constructivism/or student-centered learning. Because of this, any attempt of ICT integration in education should parallel with teachers' professional development.

Interview with some of the teachers revealed that, though teachers agreed to possess the content and pedagogical knowledge of ICT to integrate ICT in teaching Social Studies, they have difficulties in integrating ICT in Social Studies lesson. For example,

T2 stated that, *"I have the knowledge in ICT, but I cannot use it to teach because there are not enough computers to use, there are only 6 computers in the school including mine, but the class size is more than 30 students. So how can I use these 6 computers to teach such a large class?"*

T1 stated that, *"Yes I have a computer and there are computers in the school but no internet. If I am to use the computers and other devices to teach in a Social Studies lesson, I need internet connection but the school does not provide that. I cannot also personally provide internet for the school. When I get all the ICT tools to integrate ICT in teaching Social Studies, then I will do it."*



T3 stated, *“as I said earlier, I have the interest to use ICT to teach Social Studies but here is the case the school does not have electricity, and it has been a long time since I went for any in-service training on ICT so how can I use ICT to teach Social Studies?”*

In conclusion, the Social Studies teachers agreed to have possessed content and practical knowledge in ICT which could be integrated in teaching Social Studies lessons but are hesitant or unable to do that due to some challenges they face in their various schools such as inadequate or lack of ICT infrastructure, electricity, computers and other ICT tools. Some teachers are also faced with lack of interest to integrate ICT in teaching Social Studies. Tinio (2002) posited that, the infrastructure challenges that may exist in schools are absence of appropriate buildings and rooms to house the technology, shortage of electric supply and telephone lines, and lack of the different types of ICTs. Because of this, one need to deal with infrastructure related challenges before the planning of ICTs integration to education systems.

Brosnan (2001) also identified attitude, motivation, computer anxiety, and computer self-efficacy as factors affecting teachers' use of computers in their lessons. Many teachers may not have the required IT skills and feel uncomfortable, nor do they have trainings needed to use the technology in their teaching. Unless teachers develop some basic skills and willingness to experiment with students, ICT use in education is at a disadvantage.

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS**

#### **5.0 Overview**

This chapter presents the summary of the study and report on major findings. It highlights the conclusion of the study and its implications for practice. The implications were based on the major findings in the study. It further outlines some recommendations and suggestions for further research.

#### **5.1 Summary of the study**

The study explored Social Studies teachers' knowledge and usage of ICT in teaching Social Studies at the Junior High Schools in the Gomoa West District of the Central Region of Ghana. The study also solicited the background information of Social Studies teachers, their perception about the use of ICT in teaching Social Studies and the challenges involved in integrating ICT in teaching of Social Studies lessons. Martorella (1997) emphasized that within the Social Studies curriculum, technology had been likened to a "sleeping giant". A giant, because many Social Studies educators contend that interactive technologies hold a great deal of potential in the teaching and learning of Social Studies, yet sleeping because little technology research (Friedman & Heafner, 2006), development and implementation has taken place among Social Studies educators to effectively integrate technology into the teaching and learning of the subject. Mereku, Yidana, Hodzi, Tete-Mensah and Williams (2009) recommended that for Ghana and Africa as a whole to be able to fully integrate technology into teaching and learning, requires frequent collection and analysis of data on technology (ICT) usage within the educational cycle of Ghana.

Social Studies teachers need to be the prime movers of change for social transformation through the use of technology in their teaching and learning process. They need to feel there is always room for improvement in choosing pedagogical approaches and appropriate technology for content to be discussed in a multi-dimensional approach (Kereluik, Mishra & Koehler, 2010).

Advanced technologies like computers, internet and interactive whiteboards require specialized advanced-level skills that are not always intuitive to the teacher without training. Before teachers can use computers, they must understand how to interact with them (Koehler & Mishra, 2005; Mishra & Koehler, 2006). In order to understand the Social Studies teachers' knowledge and usage of ICT in teaching Social Studies, the following research questions were considered:

1. What is the knowledge of JHS Social Studies teachers in ICT in the Gomoa West district?
2. How do JHS Social Studies teachers in Gomoa West district perceive the use of ICT in teaching Social Studies?
3. How do JHS Social Studies teachers use ICT in teaching Social Studies in Gomoa West District?
4. What challenges are associated with the use of ICT in teaching Social Studies in JHS of Gomoa West district?

Seventy-seven JHS Social Studies teachers were involved in the study. With the use of questionnaire, interview and observation, data were collected on Social Studies teachers' knowledge and usage of ICT in teaching Social Studies.

## 5.2 Key Findings

### 5.2.1 *Research Question 1:* What is the knowledge of JHS Social Studies teachers in ICT in the Gomoa West district?

Results from the questionnaire in the study showed that a greater number and percentage of the JHS Social Studies teachers possessed both content and practical knowledge of ICT which can enable them integrate ICT in the teaching of Social Studies lessons. However, few of them did not possess both content and practical knowledge of ICT.

### 5.2.2 *Research Question 2:* How do JHS Social Studies teachers in Gomoa West district perceive the use of ICT in teaching Social Studies?

It was revealed in the study through the questionnaire and interview that greater number of the JHS Social Studies teachers see themselves as technology literates, thus, as teachers who possess ICT knowledge and skills which can help them integrate ICT in the teaching of Social Studies. Most of the teachers also believe that ICT integration in the teaching of Social Studies is relevant since it would aid better teaching and learning of Social Studies. They also expressed interest and willingness to integrate ICT in teaching Social Studies.

It is also important to note that, few of the teachers however, do not see themselves as ICT literates as well as ICT integrators in teaching Social Studies to be important. They believe ICT is taught as a subject and so integrating ICT in the teaching of Social Studies is a waste of time. They therefore, do not have the interest and are not willing to integrate ICT in teaching Social Studies.

**5.2.3 Research Question 3:** How do JHS Social Studies teachers use ICT in teaching Social Studies in Gomoa West District?

Results from the questionnaire and observation schedule revealed that even though JHS Social Studies teachers agreed to have possessed content and practical knowledge in ICT, greater number of them do not use ICT or integrate ICT in teaching Social Studies. From the questionnaire, it showed that most of the teachers mostly use computers and other ICT tools in typing examination questions and recording of pupils' examination scores and not in teaching Social Studies. In observing five Social Studies teachers' lessons, it was revealed that only one of them actually integrated ICT in teaching Social Studies. The other four did not integrate ICT in teaching Social Studies.

**5.2.4 Research Question 4:** What challenges are associated with the use of ICT in teaching Social Studies in JHS of Gomoa West district?

The study also revealed that, Social Studies teachers were faced with some challenges in the bid of integrating ICT in the teaching of Social Studies. Social Studies teachers are faced with inadequate and lack of computers and other ICT tools as against large number of pupils in class. This affects the successful integration of ICT in teaching Social Studies. Some schools are not connected to the national grid, thus, the use of ICT in teaching is thwarted.

Also, there is inadequate in-service training for the Social Studies teachers to sharpen and update their knowledge and skills in ICT in order to effectively integrate ICT in teaching Social Studies. In- service training has not been regular and some teachers have not even been given in-service training at all.

Furthermore, some of the Social Studies teachers were faced with some reservations about the integration of ICT in teaching Social Studies. They see it not to be necessary and a waste of time since ICT is a subject. They, therefore, have no interest in integrating ICT in teaching Social Studies.

### **5.3 Conclusion and Implication for Practice.**

Existing teaching learning activities and delivery system is unsatisfactory and is not suitable for the age of 21<sup>st</sup> century (Shah, 2016). The Twenty-first-century students are unique, especially with regard to technology. Most teachers are considered digital immigrants; however, their students' are digital natives. Bennett, Maton, & Kervin (2008) explained that today's students, or the next generation, are immersed in technology; they have technical skills and learning styles that are not often accommodated with current instructional methodologies.

The study, therefore, explored JHS Social Studies teachers' knowledge and usage of ICT in teaching Social Studies. The study used both quantitative and qualitative data to explore their knowledge in ICT, their perception about the use of ICT in teaching Social Studies as well as providing understanding of how they integrate ICT in teaching Social Studies and the challenges associated with it.

Though the study revealed that most the JHS Social Studies teachers possessed content and practical knowledge in ICT, they still need in-service training and other refresher courses to sensitize them, increase and update their knowledge in ICT integration.

Most of the Social Studies teachers have good perception and interest in using ICT in teaching Social Studies but this does not reflect in their actual use of ICT in teaching Social Studies. The question then is, why do Social Studies teachers not use ICT to

teach when they agreed to have possessed content and practical knowledge in ICT and are interested in ICT integration in teaching Social Studies?

The study showed that JHS Social Studies teachers are faced with inadequate and lack of computers and other ICT tools, and lack of electricity to schools in the bid to integrate ICT in teaching Social Studies hence the reason for their inability to integrate ICT in teaching of Social Studies.

The implication is that, this will distort the intention of Government and educators' intention to promote the integration of ICT in teaching not only Social Studies but the other subjects as well. This is likely to have adverse effect on teaching and learning in the 21<sup>st</sup> century where learners are technologically inclined.

#### **5.4 Recommendations**

1. Based on the findings of the study, the following recommendations are made:

The Government of Ghana, Ministry of Education, Ghana Education Service, the Gomaa West District Education Office, Non-Governmental Organizations and other stakeholders in the Gomaa West District should organize regular in-service training and other refresher courses on ICT for teachers especially Social Studies teachers to increase and update their knowledge and skills in ICT and ICT integration in teaching, especially, Social Studies.

2. In addition, the same in-service training should be used by the Government of Ghana, Ministry of Education, Ghana Education Service, the Gomaa West District Education Office, Non-Governmental Organizations and other stakeholders in the Gomaa West District to sensitize, orient and reorient Social Studies teachers about the need and benefits of integrating ICT in the teaching of Social Studies. This could be used to

change the wrong perception of some Social Studies teachers about the integration of ICT in teaching Social Studies.

3. Furthermore, the Gomoa District Education Office, Circuit Supervisors and Head teachers of Junior High Schools should encourage, motivate and supervise Social Studies teachers to integrate ICT in teaching Social Studies.

4. It is further recommended that, the Government of Ghana, Ministry of Education, Ghana Education Service, the Gomoa West District Education Office, Non-Governmental Organizations and other stakeholders in the Gomoa West District should provide electricity, internet connectivity, computers and other ICT tools to schools to enable Social Studies teachers integrate ICT in teaching the subject.

#### **5.5 Suggestions for further research**

The researcher suggests that future research should be conducted in other districts and regions of Ghana with a large sample size. This will give a clear picture of JHS Social Studies teachers' knowledge and usage of ICT in teaching Social Studies.

Also, similar research on the knowledge and usage of ICT of other subject teachers should be conducted.



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## APPENDICES

### **Appendix A: Information and Communication Technology (ICT) Integration Questionnaire for Social Studies Teachers.**

#### **Introduction**

My name is Mwinkaar Linus, a student of University of Education, Winneba, pursuing a Masters (M.Phil.) Degree in Basic Education. I am undertaking an academic research on: “Social Studies Teachers’ knowledge and usage of Information and Communication Technology (ICT) in teaching Social Studies in Junior High Schools. The case of Gomoa West District”.

I would be very grateful if you could respond to these questionnaires. Accuracy of your response and co-operation is very important to collect relevant data. The responses provided will be strictly confidential, anonymous, and purely for this academic purposes but nothing else. Thanks for your kind cooperation.

**A: SOCIO-DEMOGRAPHIC CHARACTERISTICS.** *(Tick the right option or fill the right answer in the spaces provided)*

1. Sex: Male [1] Female [2]

2. Age: 20-25yrs [1] 26-30 [2] 31-35 [3] 36-40yrs [4] Above 40yrs [5]

3. Number of years in teaching the subject:

Less than 3years [1] 3-5years [2] 6-8 years [3] Above 9 years [4]

4. Your highest qualification: Cert. ‘A’ [1] Diploma [2] Degree [3] Postgraduate [4]



**B: SOCIAL STUDIES TEACHERS' KNOWLEDGE OF ICT IN TEACHING SOCIAL STUDIES.**

Each of the statements below has four (4) options: strongly Agree, Agree, Disagree and Strongly Disagree. Tick ONLY ONE that best completes each statement based on your own judgement.

<b>Content knowledge of ICT</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
5. <i>Technology literacy</i> is the ability to effectively, use <i>technology</i> to access, evaluate, integrate, create and communicate information to enhance the learning process through problem-solving and critical thinking.				
6. Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources.				
7. Technology integration is the use of technology tools in general content areas in education in order to allow students to apply computer and technology skills to learning and problem solving.				
8. Curriculum integration with the use of technology involves the infusion of technology as a tool to enhance the learning in a content area or multidisciplinary setting.				
9. Effective integration of technology is achieved when students are able to select technology tools to help them				

obtain information in a timely manner, analyze and synthesize the information, and present it professionally.				
10. The six main parts of a computer are Monitor, Keyboard, CPU, Main Memory, Internal Storage, and Power Supply.				
11. ICT tools such as smart phones, computers, ipad, Tablets, smart TVs, projector, radio, modem, smart board, scanner, digital camera can be used to teach Social Studies.				
12. Multimedia refers to the marriage of video, sound, graphics, text and images within a single information delivery system				
13. Multimedia help teachers and students assemble multiple types of information about topics in the form of photographs, video and animation sequences, charts and graphs, text, sound, and graphics.				
14. Map Maker Tool Kit, National Geography 3-D Earth, Decisions, Decisions 5.0, Time liner 5.0, Google Earth, Encarta encyclopaedia are some of the software used in teaching Social Studies.				
15. Technology offer multiple options for lesson delivery.				

<b>Practical knowledge of ICT</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Strongly Disagree</b>	<b>Disagree</b>
16. I can use word processor to teach Social Studies comfortably and effectively.				
17. I can use spreadsheet to input and analyse learners' results and performance effectively.				
18. I can use power point or any other presentation software to teach in my Social Studies lesson effectively.				
19. I can use most of the Social Studies subject software in teaching Social Studies.				
20. I can use memory stick to transfer data.				
21. I can install new software on a computer				
22. I can install a printer				
23. I can solve technical problem(e.g. a computer that does not start properly)				
24. I can log in to an educational website and access information.				
25. I can transfer information from a website to a word processing document or power point.				
26. I can create and manage my email.				
<b>Teachers' perception of their knowledge in ICT.</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Strongly Disagree</b>	<b>Disagree</b>
27. I see myself literate in the context of technology.				

### C: SOCIAL STUDIES TEACHERS' USE OF ICT IN TEACHING SOCIAL STUDIES.

For each of the statements below, please indicate one option with an X.

Questions	Options	
28. How often do you use computers at school?	1.on most days	
	2. at least once a week	
	3. at least once a month	
29. For which of the following purposes do you use ICT at school?	1.personal, non-professional use	
	2. school administration	
	3. recording marks using a spreadsheet	
	4. typing exam papers	
	5. finding information and resources on the internet	
	6. none of the above	
30. In which of the following ways do your learners use ICT in your Social Studies' lesson.	1.using Social Studies subject specific software.	
	2. using the Internet to research information	
	3. working on projects	
	4. Solving problems, making decisions or forming opinions	
	5. my learners do not use ICT in class	
31. In which of the following ways do you use ICT with learners whilst teaching Social Studies?	1.using the word processor	
	2. using the spreadsheet.	
	3. using presentation software.	
	4. using subject specific software, eg. Encarta.	
	5. using the internet.	
	6. using other applications not listed above	
	7. I do not use ICT with my learners	
32. Do you feel confident to use a computer.....	1.if someone is there to support you	
	2. on your own	
	3.to teach students	
	4. to help colleagues	
	5. not at all	

33. Do you use any of the following technologies for teaching and learning of Social Studies?	1. Television	
	2. Radio	
	3. digital cameras	
	4. data projectors	
	5. none of the above	

**D: CHALLENGES OF ICT INTEGRATION IN TEACHING SOCIAL STUDIES IN GOMOA WEST DISTRICT.**

34. Do Ghana Education Service (GES) or any NGO organise in-service training for you on ICT for the past 2 years? Yes [ ] No [ ]

35. If yes, how many times? .....

36. Do you find it difficult using the ICT tools in teaching Social Studies?

Yes [ ] No [ ]

If yes, why?

.....  
 ...  
 .....

37. Are there computers in your school? Yes [ ] No [ ]. If yes, how many

.....

38. Does your school have other ICT tools that help you integrate technology in teaching Social Studies? Yes [ ] No [ ]

If yes, mention them

.....

...39. Does your level of knowledge in ICT affect your use of ICT in teaching Social Studies? Yes [ ] No [ ].

If yes, how does it affect you?

.....

40. Has your school been connected to the national grid? Yes [ ] No [ ]

41. Do you have the interest to integrate ICT in teaching Social Studies? Yes [ ] No [ ]

**Appendix B: Observation Checklist for Social Studies' Teachers Use of ICT in Teaching Social Studies in Junior High School in Gomoa West District.**

1. Name of School.....
2. Location of School: .....
3. Class: ..... No. On roll: .....Date: .....
4. Topic. ....
5. Duration of lesson.....

**SECTION B**

6. Presence of ICT tool in the classroom
7. Use of ICT tool in teaching the lesson

**Score**


**Type of ICT tools used in teaching the lesson**

8. Computer (Desktop & Laptops)
9. Projectors
10. Smartboards
11. Smartphones
12. Internet


**Teacher's knowledge about the use of the ICT tool in teaching.**

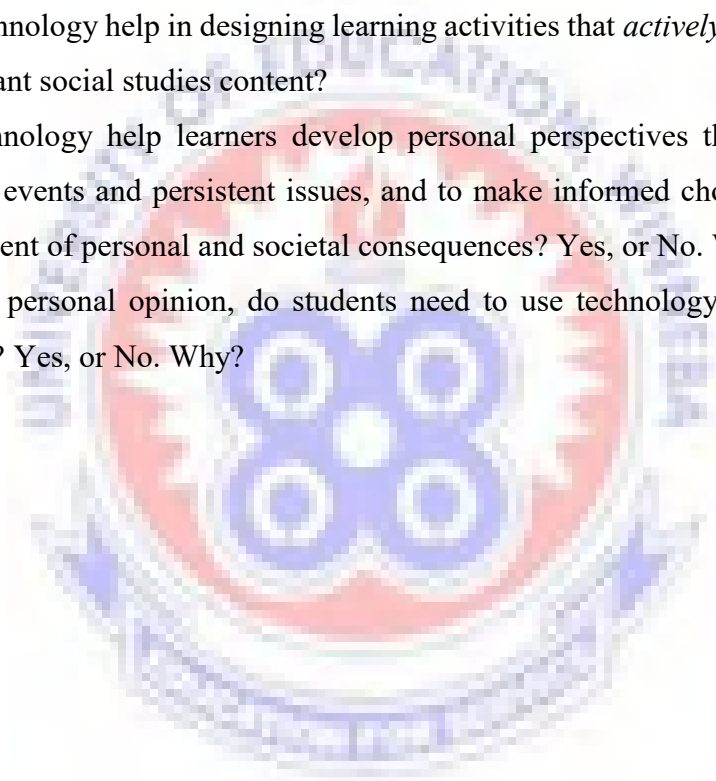
13. Right tool been used for the right activity
14. Presence of needed skills to use ICT tool to teach


**Challenges faced with use of ICT tool in the lesson**

5. Ability to operate ICT tool effectivity
16. ICT tool functioned properly.


**Appendix C: Interview Guide for Social Studies Teachers: *Perception of Social Studies' use of ICT in teaching Social Studies.***

1. In what ways will this use of technology enhance students' learning?
2. Do you think the use of technology is relevant in teaching Social Studies? Yes, or No. Why?
3. Does technology help learners gain the knowledge, skills, and attitudes required of people who participate in public life?
4. Do you think technology help in planning social studies instruction that is *challenging*? Yes, or No. Why?
5. Can technology help in designing learning activities that *actively engage students* in significant social studies content?
6. Do technology help learners develop personal perspectives that enable them to explore events and persistent issues, and to make informed choices, which reflect assessment of personal and societal consequences? Yes, or No. Why?
7. In your personal opinion, do students need to use technology in learning Social Studies? Yes, or No. Why?



**Appendix D: Introduction letter from the Department**



UNIVERSITY OF EDUCATION, WINNEBA

FACULTY OF EDUCATIONAL STUDIES

DEPARTMENT OF BASIC EDUCATION

P.O. Box 24, Winneba, Ghana

+233 (0)50 2212915

[education@uow.edu.gh](mailto:education@uow.edu.gh)

Date: January 26, 2018

The Director  
District Education Directorate  
Gomoa West District  
Central Region

Dear Sir/Madam,

**LETTER OF INTRODUCTION**

I write to introduce to you, Mr. Linus Mwinkaar, a second year M.Phil student of the Department of Basic Education, University of Education, Winneba, with registration number 8160030001.

Mr. Linus Mwinkaar, is to carry out a research on the Topic: *"Social Studies Teachers' Knowledge and Usage of Information and Communication Technology (ICT) in Teaching Social Studies in Junior High Schools: The Case of Gomoa West District"*

I would be grateful if permission is granted him to enable him carry out his studies in your District.

Thank you.

  
.....  
MR. KWEKU ESIA-DONKOH  
(Ag. Head of Department)



**Appendix E: Introduction letter from the District Education Officee**

