UNIVERSITY OF EDUCATION, WINNEBA

ASSESSING THE COMPUTER LITERACY AND FACTORS AFFECTING IT IN PUBLIC BASIC SCHOOLS IN DEBIBI TOWNSHIP IN THE TAIN DISTRICT.

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a dissertation in the Department of Educational Foundations, Faculty of Educational Studies, submitted to the School of Graduate Studies in partial fulfilment of the requirements for the award of the degree of post-graduate diploma (education) in the University of Education, Winneba

APRIL 2021

DECLARATION

Student's Declaration

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

Signature: …………………................……

Date: ....

Supervisor's Declaration

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

Dr. Peter Eshun (Supervisor)

Signature: …………………………..............…

Date: ....

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DEDICATION

This work was dedicated to My parents, siblings, Mr Amoah Torron, Mr. Acheampong Henry Yaw and Mr Francis Britwum.

ACKNOWLEDGEMENTS

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ABSTRACT

The main purpose of the study was to assess the computer literacy and factors affecting it in public basic schools in Debibi township in the Tain District. The descriptive cross-sectional survey design was employed in the study. Using a multistage sampling approach, a sample of 294 respondents were used. The study revealed that about 27% of the pupils have at least a good literacy level while the remaining 73% exhibited either a fair and poor computer literacy level. Furthermore, computer literacy level by gender, the study revealed about 32% of the boys had at least good category as compared to their female counter parts in that category thus about 24%. Furthermore, about 24% received an extra training in ICT while about 48% do own an ICT textbook. The major challenge faced by the pupils as indicated by the majority is short study time, followed by inadequate computers in the computer laboratory, lack of computer and lack of spacious ICT laboratory. The study recommended that government through the District Assembly and the District Education Office as well as other agencies should provide computer laboratory for the remaining schools in the township.
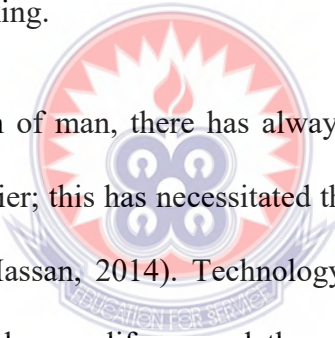
CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Education develops man's faculty, especially his mind so that he may be able to enjoy the contemplation of supreme truth, goodness and beauty of which perfect happiness essentially consists. Education has several functions, which could be broadly categorized as instrument (skills, aptitude and ability) and normative (essentially addressing issues of values, norms, attitudes and aspiration of a given person, group or society). It also empowers the individual. Educating an individual is an attempt to give one some desirable knowledge, understanding, skills, interests, attitudes and critical 'thinking.

Since the creation of man, there has always made a conscious effort to get things done faster and easier; this has necessitated the act referred to in modern times as technology (Aziz & Hassan, 2014). Technology has become a household name across all aspects of the human life around the globe; and the major tool behind modern day technology is known as the "computer Waingankar,Anjenaya,Taralekar and Thatkar (2014). The computer, according to Alabi (2015) is an electronic machine capable of inputting, processing, and outputting data based on a logic supply. Since the dawn of computers, there has been a major interest in the collection, storage, retrieval, and analysis of a wide range of information in all spheres of socioeconomic development endeavour (Mohammed, Andargie,Meseret & Girma 2013).

Also the improvement in computer and its accessories has brought about an overwhelming change in major sectors such as education, commerce and business, transportation, construction, communication, entertainment, health, amongst others.

Waingankar et al. (2014) argued that no professional in the current world can do away with computer and other electronic gadgets.

Computer Technology become a major change instrument in today's world and the future seems to witness an increasing number of workers using the computer and other technological methods to process and transmit information, hence making the knowledge of computers a main strength for the world of work and the employment sector, and anyone, especially pupils with such knowledge have a high worth over their peers with little or no knowledge in computer (Aziz & Hassan, 2014). In view of this, computer studies or Information Communication Technology (ICT) has become an integral part of the national curriculum at all levels of the educational pyramid with Amanortsu, Dzandu, and Asabere (2013) arguing that computers are expected to enhance educational standard while serving as a beneficial tool to both the teachers and the pupils.

The advent of ICT across the world and the increasing demand for the use in all sectors have forced countries across the globe to introduce Computer training in schools in their respective countries. In view of this, in about 2003 the Government of Ghana prepared herself towards improving on the access, equity and quality education across the country. The government introduced an ICT in Education policy framework and implementation strategy, complete with measurable outcomes and time lines (Ministry of Education, 2015)

Ghana, for the past decade has been determined to present ICTs into the sector of education by the Ministry of Education (MOE) through the Ghana Education Service and with support from her developmental agencies as well as the other private organizations and individuals (Ministry of Education, 2015). The efforts taken were

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directed at all levels of education in the country be it tertiary or pre-tertiary and it applies to both public and privately owned schools (Ministry of Education, 2015).

The major actions taken were channeled towards the deployment of ICT infrastructure to all schools by the provision of computers and the establishment of computer laboratories. The coverage of ICT infrastructure in Ghanaian schools now is still below the standards required but is however better when compared to the situation some years back. Tertiary schools can also boast of a major ICT penetration than the pre-tertiary school. Community based Computer centers have also been set up across the country with majority of them found in the urban centers compared to the rural centers (Ministry of Education, 2015). These centers though have not helped much but as aided in supporting some educational aims such as. Initiatives contributed to a wider number of pupils and teachers acquiring ICT skills and developing strong interests in ICT and Science
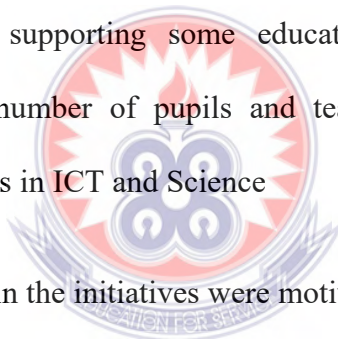
Schools involved in the initiatives were motivated to expand the project and/or acquire more ICT equipment; a number of private-public partners, including Parent Teachers Associations (PTAs) and civil society collaborated in the efforts. Lessons learnt from initiatives provided good examples for other schools to introduce their own ICT programmes (Ministry of Education, 2015).

The computer is an electronic machine capable of inputting, processing, and outputting data based on a logic supply (Alabi, 2015). Since the dawn of computers, there has been a major interest in the collection, storage, retrieval, and analysis of a wide range of information in all spheres of socioeconomic development endeavor (Mohammed et al., 2013). Also, the improvement in computer and its accessories has

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brought about an overwhelming change in major sectors such as education, commerce and business, transportation, construction, communication, entertainment and health.

Waingankar et al. (2014) argued that no professional in the current world can do away with computer and other electronic gadgets. Furthermore, Aziz and Hassan (2014) indicated that technology and computers have become a major change instrument in today's world and the future seems to witness an increasing number of workers using the computer and other technological methods to process and transmit information. This has made the knowledge of computers a main strength for the world of work and the employment sector, and anyone, especially pupils with such knowledge have a high worth over his peers with little or no knowledge in computer.

In view of this, computer studies has become an integral part of every school's curriculum at all levels of the educational pyramid with Amanortsu et al. (2013) arguing that computers are expected to enhance educational standard while serving as a beneficial tool to both the teachers and the pupils.

Also, Almendarez (2011) noted that ICT or computers offers both the teacher and pupil technological tools that exceed the boundaries of their classroom. ICT studies or computer studies became well-known in education during the years when technology companies make microcomputers available to the general public to purchase in the early 1980's (Peprah, 2016). National Council for Curricula and assessment in Ireland (NCCA) as cited in (Peprah, 2016), added that "technological skills are very important for making advances in education, leisure and work". They further noted that "…technology is increasing in importance in people's lives and it is expected that this trend will continue to the extent that technological literacy will become a functional requirement for peoples' work, social and personal lives" (p4).

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According to the Ministry of Education (2013), for Ghana to make progress in various sectors with regards to the political, social and economic developments, the country needs to prioritize ICT in education. Hence the country has since the drafting of her first ICT policy in 2003 made two reviews in 2006 and 2008. Amanortsu et al. (2013) noted that the massive investment and progress is as a result of the ICT policy statement which is supported by legislative and legal frameworks which compels the Ministry to integrate it into the Educational System.

According to the Ministry of Education (2013), Ghana to make progress in various sectors with regards to the political, social and economic developments, the country needs to prioritise ICT in education. Hence, the country has since the drafting of her first ICT policy in 2003 made two reviews to that policy in 2006 and 2008. A revise document was promulgated in 2009 for implementation (Ministry of Education, 2015). Amanortsu et al. (2013) noted that the massive investment and progress is as a result of the ICT policy statement which is supported by legislative and legal frameworks that compels the ministry to integrate it into the educational system. The progress can also be attributed to the international support such as the World Forum on Education held in Dakar of which ICT in education was a major topic discussed which showed the path for the deployment of resources to schools to enhance ICT education (Ministry of Education, 2008).

The Government of Ghana kept investing a lot more into ICT education, with the aim of bridging the gap and sustaining interest as well as improving practical lessons for the pupils. The setting up of computer laboratories, the purchase of computers for schools as well as the introduction of an intervention programme known as "One Laptop per Child Policy" with a number of schools benefiting from

the policy since its implementation in 2008 (Owusu-Ansah & Asante, 2015). Despite these numerous interventions and interest from successive governments in computer education, the computer literacy level and teaching of computer in public basic schools with Debibi township not been exceptional where most of the inventions are channeled to is still a major concern to the Ministries and the government at large. It is against this background that the researcher sought to assess computer literacy and challenges of computer studies in Public Basic schools in the Debibi Township in the Tain District.

1.2 Statement of the Problem

With the efforts to promote computer literacy, it is discovered that majority of these programs aimed at ensuring computer integration in Ghanaian education were fragmented, unstructured, and did not cover all of the schools (Nyarko, 2007). Regardless of the procedures put in place in Ghana to ensure computer literacy in education, researchers such as Baek, Jung & Kim. (2008) discovered that computer use in the classroom in the educational environment was very low, even falling behind the commercial sector.

Integration of computer literacy in the classroom by students has also been identified as a challenge in many African countries, notably in African Public Basic Schools (Awidi, 2008). Similarly, there seems to be little information on how computer may be spread and used by students in Ghanaian basic schools, confirming the conclusions of Aduwa-Ogiegbaen and Iyamu (2005) study that found large discrepancies in the usage of information communication and technology between rural and urban schools, favoring urban schools. In many Basic Schools in Ghana, for example, the computer equipment required to increase good lecture delivery as well

as successful learning is a major constraint (Edumadze & Owusu, 2013). That is to say, most Public Basic Schools in Ghana still lack basic computer equipment and resources such as computers, speakers, projectors, and dependable internet connectivity. Until recently, certain students in the basic schools had little exposure to ICT tools such as computers (Edumadze & Owusu, 2013).

The use of computer in the classroom is very important for providing opportunities for students to learn to operate in an information age. A quantitative study finding by Nyaga (2013), indicates that students have strong desires to integrate computer into education; but they encounter many barriers. The major barriers are lack of confidence, lack of competence and lack of access to resources. Confidence, competence and accessibility are considered to be the critical components of computer integration in the basic schools, computer resources including software and hardware, effective professional development, sufficient time, and technical support.

A preliminary exploration of literature prior to this study showed that a number of studies exist on computer literacy and computer literacy skills among basic school students. Meanwhile, most of these studies were based on computer competence, computer proficiency or computer fluency of teachers (Cardell & Nickel, 2003; Bunz, 2004; Ballantine, McCourt, Larres & Oyelere, 2007). Again, most of the studies conducted focused on integration of information and communication technology in teaching and learning by teachers in the public secondary schools (Elizabeth, Samuel, Henry & Brutwum F. 2021; Olufunmilayo, & Airen, 2017). Their studies used the descriptive cross-sectional survey with a quantitative approach. Means and standard deviations were used in their analysis Their results revealed that teachers do not use ICT in their teaching and learning activities. The researcher is of

the opinion that these studies focused on using teachers as the respondents in the public secondary school but this current study focused on assessing computer literacy and factors affecting it among pupils in the Basic Schools which the current study tries to fill.

Again, based on the available literature, a number of issues have been identified. For example, majority of the previous studies were conducted in the Western and some African societies, it seems much is not known about computer literacy and factors affecting it among students are likely to differ between Ghana and these countries dues to diverse cultures, values and believes. Pertaining to the Ghanaian context, it seems much is not known about computer literacy and factors affecting it among pupils in the basic schools specifically in the Debibi Township.

For example, majority of the previous studies were conducted in the western world and some African societies and much is not known about computer literacy in Ghana. Particularly basic schools in Debibi township.

Despite all the interventions and initiatives taken by the previous governments in making computer literacy a reality to students, teachers to facilitates teaching and learning. It seems there is dearth of literature that actually focuses on assessing computer literacy and factors affecting it among pupils in public basic schools in Debibi Township in the Tain District. It is on the basis of this that the researcher sought to research into the assessing computer literacy and factors affecting it among pupils in the public Basic Schools in the Tain District.

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1.3 Conceptual Framework

From the figure above, the study came out with a conceptual framework to guide the study. The study seeks to know the factors affecting the computer Litercy and these factors are, Activities, Awareness of the Application, Access to Hard and Software, Limited Accessibility and Network Connectivity, Limited Technical Support, Lack of Teacher's competency and limited time.
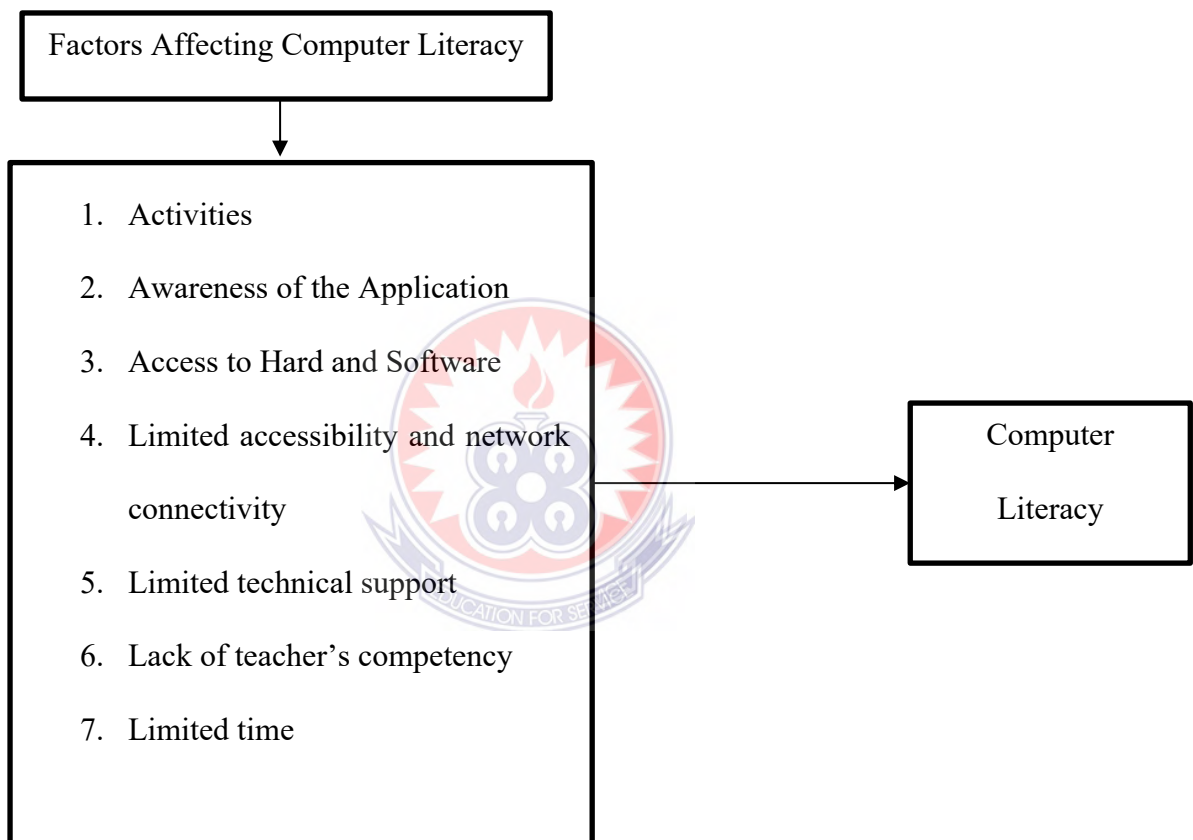
Figure 1: Authors Own Construct (2022)

1.3.1 Theoretical Framework

The use of computer in education has the potential to enhance the quality of teaching and learning, the research productivity of teachers and students and the management and effectiveness of institutions (Kashorda, M. 2007). This implies that the study on computer implementation in the basic schools could not be exhausted

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without considering administrative support, environmental factors and the availability of resources. As a guide to this study the Open System, Technology Acceptance Model and the Model of IT implementation process theories were used.

In the open system systems theory, the school being a typical example of an organization is viewed as a socio-technical system composed of four sub-systems: human, technical, structural and task (Owens & Steinhoff, 1976). The human subsystem is composed of teachers, administrators and support staff who deliver instructions, develop curriculum and evaluate student progress. If they are going to perform these tasks, they require structure. Finally, the organization must also have technological resources in order to complete tasks. The school's subsystem interacts with the external environment in such a manner that bringing change in one would necessarily lead to changes in all the others. Therefore, when considering the introduction of innovations in schools, it is prudent to take cognizance of the inter-dependencies and interactive first between the four subsystems and secondly with the external environment. The subsystems are thus critical elements to be dealt with when attempting to initiate change or implement an innovation in a school. This guide was thus used to study the computer literacy and factors affecting it in the basic schools.

The Technology Acceptance Model theory was also used to guide the study as it aimed to predict and explain computer usage behavior that is, what causes potential adopters to accept or reject the use of information technology. The theory predicts attitudes toward the use of the system that is the user's willingness to use the system (Davis, 1989). It looks at the perceived usefulness which refers to the degree to which a person believes that using a particular system would enhance performance and the

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perceived ease of use which concentrates on the degree to which a person believes that using a particular system would be free from effort.

The Model of IT Implementation process is based on organizational change, innovation and technological diffusion. The purpose of the model is to offer a directing and organizing framework for computer implementation. The model comprises six stages, namely: initiation, organizational adoption, adaptation, acceptance and adoption, routinization and infusion. Thus, the model covers an implementation process from scanning the organizational needs to a full and effective use of the technology in daily practice. The model also identifies five contextual factors which impact on processes and products in each implementation stage: the characteristics of the user community, the organization, the technology being adopted, the task and the organizational environment (Cooper & Zmud, 1990).

The theoretical framework of the study is based on B.F. Skinner's 'black box' theory and programmed instruction. B.F. Skinner's viewpoint is based on a definition of learning as an observable change in behaviour (Skinner, 1950). The potential of the computer as a teaching aid promise increasing design sophistication. Computers can be programmed to judge student input and to tailor lessons to each individual's level of mastery. In a tutorial mode, computers can present instructional input and require mastery of each step-in ways that are not possible with the early machines. The sensitivity of the instructional designer to alternative patterns of student learning is the necessary key to full use of a computer capacity. Simulation, using the computer to model a real situation enables even greater sophistication, allowing realistic reactions to student input. Well-designed intellectual games can provide pertinent environments in which to practice important problem-solving skills (Monyoro, 2013).

The relevance of this theory is that the learning process is based on the principle of reinforcement and that the stimulus-response schema is based on the operant conditioning whereby an entirely new behaviour is learnt to a familiar stimulus that is, computer instruction is equated to the conditioning of a desired behaviour. The classroom is equated to the 'black box', with the computer as the device to be clicked by the student to give desired behaviour of positive results from the learning process. This means that computer assisted instruction, has to present a stimulus, give feedback to the student's response (to the stimulus) and reinforces desired responses.

The behaviour to be learnt has to be split up in small components (computer tasks) which are presented to the student. The desired behaviour is reinforced through repetitions by the computer since it can go over and over a given concept several times based on the student's responses.
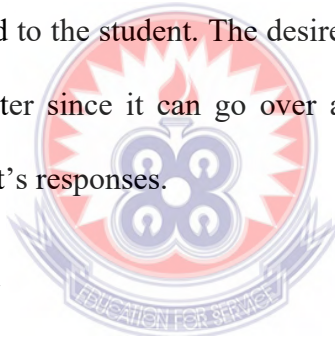
1.4 Purpose of the Study

The purpose of the study is to assess the computer literacy and factors affecting it in public   basic schools in Debibi township in the Tain District.

1. Examine the computer literacy level in public basic schools in Debibi Township.

2. Examine the factors affecting computer literacy level in Debibi Township.

3. Identify the challenges of computer studies in Debibi Township.

1.5 Research Questions

The specific objectives are as follows;

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1. What is the computer literacy level of pupils in public basic schools in Debibi Township?

2. What are the factors affecting computer literacy level of pupils in public basic schools in Debibi Township?

3. What are the challenges of computer studies of pupils in public basic schools in Debibi Township?

1.6 Significance of the Study

With the current increasing usage of computer in all spheres of life and the advantage of ICT knowledge for pupils, this study has the potential of contributing to policy making, Thus the results of this study would inform the Tain District Education Office as well as the District Assembly on the current state of Computer literacy in the own other than relying solely on the pass rates from the BECE and Municipal mock examination in determining the knowledge level of pupils hence triggering a comprehensive strategy and implementation to aid the District. The study would also add up to existing literature in the area of computer literacy. Results from this study would also help the various school heads and teachers know the computer literacy level of their corresponding schools.

The study findings may elicit information to the responsible parties and identify the drivers and barriers to computer including those related to curriculum and pedagogy, infrastructure, capacity building, language and content and financing.

1.7 Delimitation of the Study

This study was done in all Public Basic Schools in Debibi. It covered only Junior High School (JHS) pupils attending Public Basic Schools. The study was based on areas identified in the ICT syllabus of the Ghana Education Service (GES)

curriculum such as the definition of computer, the components of computers amongst others.

1.8 Definition of terms

Computer: is an electronic machine capable of inputting, processing, and outputting data based on a logic supply

Computer literacy: is the fundamental knowledge, skills, and attitudes needed by all citizens to be able to deal with computer technology in their daily lives.

1.9 Organization of the Study

This study was organised into five chapters. Chapter one deals with the background to the study, statement of the problem, objectives of the study, significance of the study, scope and limitation of the study. Chapter two reviews literature related to the study, these include the theoretical review and empirical review. Chapter three dealt with the methodology used in conducting the research, it explains the research design and research setting. It also covered the population and sampling technique(s), sample size, mode of data collection and analysis and any other reliable information relevant to the study. Chapter four deals with the analyses, presentation and discussion of the data collected and chapter five summarizes and concludes on the research findings and recommendations

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This section presents description and explanation of concepts that are relevant in the field of computer and computer literacy and necessary to facilitate a comprehensive analysis and understanding of the research questions. Much emphasis was laid on computer education in Ghana, computer literacy factors affecting computer literacy and the challenges facing computer studies.

2.1 Definition of Computer Literacy

There is little agreement between computer educators concerning the definition of the term, computer literacy (Ganske & Hamamoto, 1 984; Seidel, 1982; Troutner, 1985). In much of the literature the term computer literacy is used to "denote some basic understanding of computers (Klassen et al., 1980). The author describes computer literacy in terms of the ability to communicate with computers. Johnson (1980) lists eight statements representing definitions of these concepts in education but admits to not finding any official definition. Even where educators and curriculum programmes appear to have similar aims, the way they are defined and grouped can often lead to very different interpretations of computer literacy. The diversity of definitions of the term computer literacy is illustrated in the contradictions evident between the aims of the curriculum devised by Cupertino Union School District (1983) and those of Lyons Township High (Bristol, 1982). Cupertino Union School District (1983), defined computer literacy as "the skills necessary to communicate with computers and recognize the computers capabilities and limitations." (p. 7).

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2.2 Computer Literacy in Public Basic Schools

According to Vasilache (2016), computer literacy is defined as the fundamental knowledge, skills, and attitudes needed by all citizens to be able to deal with computer technology in their daily life. Also, it can be described as the ability to interact with a computer. Again computer literacy can be described as having a basic understanding of what a computer is and how it can be used as a resource (Kubiatko, 2007). The author again argued that, computer literacy is a requirement on the improvement of the information literacy and it is usually the ability to use a few commercial applications and touch-type smoothly. For one to be considered a computer literate, such a person must understands how a computer works with information, he/she must have basic understanding of some requirements, these requirements according to Kubiatko (2007) would vary, however, knowledge of the basics of hardware, computer systems and ethics are essential.

In addition, Michael and Igenewari (2018) defined Computer literacy as the knowledge and ability to efficiently use computer. They further indicated that being a computer literate means the individual has a comfort level with regards to the usage of a computer and its application in performing a specific task without assistance from anyone. Alabi (2015) shares a similar view and describe Computer literacy as the ability to identify and operate the software and hardware of a computer so as to achieve a desired goal.

A study done by Owusu-Ansah and Asante (2015) in the Eastern Region of Ghana, to assess the impact of One Laptop Per Child Policy in Ghana on Teaching and Learning, cited a study conducted by Amenyedzi, Lartey, and Dzomeku (2011) in Tema Metropolis to assess the computer and Internet usage as supplementary

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educational material to enhance quality education showed that majority of the teachers and the pupils in the metropolis were computer literates recording about 92% of the teachers and 78% of the pupils. The percentage of pupils who passed a computer lesson test conducted by Robabi and Arbabisarjou (2015) among pupils of Zahedan University of medical sciences were about 80% of the respondents who were selected through a random classified sampling.

2.3 The Need for Computer Literacy

Since the early development of the electronic computer, there have been calls to educate our population to cope with living in a technological society. Such calls are heard more and more frequently from groups in society. Klassen et al. (1980) outlined the important role played by computer-based technology in American society. As he puts it: "There is little doubt, it seems that life in the U.S. and in the rest of the industrial world, and eventually all over the planet, will be incalculably changed by computer technology." (p. 12). He went on to show the need for computer literacy and awareness for all of society's members using similar arguments to those presented by educators such as Engle and Longstreet (1978), Press (1974), and Michael (1968).

Response has been slowly gathering momentum from educational circles to the need for a computer literate population. Many educators, such as those listed by Klassen et al. (1 980), advocate a priority for schools to attend to the need for all students to be computer (iterate and aware by the time they leave secondary education.

The author is convinced, along with others such as Molnar (1 978), Engle and Longstreet (1 978), Press (1 974), Michael (1968), and Vogler (1984), that it is

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important for all members of our society to be both computer literate and computer aware. Therefore, to prepare students for life in our society, school's must incorporate the use of computers into their curriculum. Al students need to be given access to the hardware, software, and knowledge necessary to ensure they are adequately computer literate and aware. While this may be seen as a priority by many educators, this does not mean that it is happening in schools.

In a research study conducted in the USA by the Minnesota Educational Computing Consortium, most teacher respondents agreed that every student should have some minimal understanding of computers and should learn about the role that computers play in society (Hansen et al., 1978). However, after surveying what teachers did with computers in classrooms the writers concluded that, "general computer literacy topics are currently not being covered to any great extent in their courses." (p. 472) This finding clearly indicates that computer literacy is not afforded the high priority in the curriculum of secondary schools which many educators suggest it should.
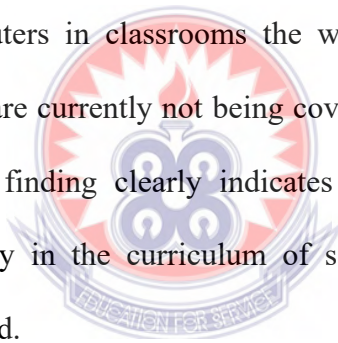
2.4 Factors Affecting Computer Literacy

Computer literacy levels of pupils have been identified to be affected with a number of factors. Robabi and Arbabisarjou (2015) explained that, Computer literacy has always been a concern in education research since the introduction of personal computers in the educational system either as tool for self-independent of as a support to the transfer of knowledge in the classroom. A study conducted by Robabi and Arbabisarjou (2015) reported a computer literacy rate of 80% in the Public Secondary Schools. This they say was a result of about 77.1% personal ownership of a computer and 40.5% of them had participated in a computer workshop. The study however, did

not report any relationship between gender of the pupils and their computer literacy level. However, Janssen and Plomp as cited in Natia and Al-hassan (2015) show that gender plays a significant role in the ICT usage both at home and in school. Males tend to use computer at school for a wider range of activities than girls either at the primary school or in the secondary school (Janssen & Plomp, 1997).

Furthermore, Durndell and Thomson (1997) also affirm that boys have more access and use of ICT tools than their female counterparts. Again a study by Volman and van Eck (2001) on gender equity and information technology in education: The second decade, also collaborate the point that girls have a low level of computer knowledge than male. This the study mention limited access to ICT, lack of skills, experience and interest in the use of ICT tools as reasons for that situation. Boys are also noted to use more ICTs in learning than their female counterparts due to availability of time to them than female (Kay, 2006). This was reported in the study "addressing gender differences in computer ability, attitudes and use:.

Michael and Igenewari (2018) studied on the Impact of Computer Literacy among Secondary School Teachers in Rivers State, which selected 194 teachers from state-owned school using proportionate stratified random sampling techniques revealed a 100% agreement to the following as factors affect computer literacy among secondary school teachers. These are due to teachers not having personal computer, lack of funds to buy a computer, lack of IT personnel in schools, high cost of computers and its accessories, lack of workshops or ICT training and bad government policies.

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2.5 Challenges of Computer Education

Computer education has been identified to be of great importance in education. This however according to Michael and Igenewari (2018), has been faced with numerous challenges such as lack of funds to acquire new computer and accessories for schools, lack of ICT teachers or personnel and the non-usage of ICT in the teaching and learning process. The challenges are as follows;

2.5.1 Activities

The importance of the nature of the activity's students completes using computers is often overlooked. In a comparison of computer literacy with book literacy, Calfee (1985) presents a list of the most often used software by adults and proposes that the reason why they are most often used is, "their usefulness to adults in meeting daily needs to handle information.". Maddux (1984) poses the question of what computer activities would be most beneficial to students. Fernie (1986) called for research to examine children's' reactions and uses of computers in different forms. By this he was referring to the variety of types of activities which could be done using computers. Just using computers will not guarantee computer literacy (Anderson et al., 1981), the activities students complete on computers is of fundamental importance.

While the importance of the activities given students to complete on computers is clear, what constitutes a good activity lacks clarity. For example, Anderson et al. (1981) argue that it is important that students be given constructive computer experiences. However, Chen (1986) alludes to the need for further research into the activity's students use computers for and the related "subjective task values". By this he means the attitudes and values associated by students with

the tasks on which they are use computers. In a similar way, Eason et al., (1975) discuss the 'task fit' issues of: relevance; accuracy; completeness; and timeliness. By this they mean the degree to which the use of a computer facilitates the effective completion of the task (how worthwhile it is using a computer to complete the task). Chen believes that concern by teachers for subjective task values should be a particularly important consideration when girls need to be encouraged to use computers.

2.5.2 Awareness of the Applications

Clearly, as the range of software available increases, it becomes not only important to have a knowledge of the applications of computers but, more important, to evaluate the applications and the software available for the applications (Anderson et al., 1981). Lewis (1984) sees software evaluation as an important part of the computer literacy of teachers. Coffin (1986) also sees this awareness and evaluation skill being important for principals of schools. For users to make maximum use of the computers capabilities to help them they need to know what a computer can do and what hardware and software is available to be used.

2.5.3 Access to Hardware and Software

The access students require to hardware and software can be viewed in terms of quantity and quality. How much time do students need to have access to computers, and what type of hardware and software is required? Maddux (1984) raises the question of the need for reasonable exposure for computers to have any 'significant impact on children: It is not clear how much is reasonable exposure. The communicative nature of the interaction between student and computer places

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requirements of the design of computer systems. Jorgensen, Barnard, Hammond, and Clark (1983) discussed the problem caused by the use of system-oriented command names and structures by designers which become obstacles for users not possessing specialist computer knowledge. They proposed the use of user-oriented, natural dialogue structures and vocabularies. To Hedberg, and Mumford (1975) these design features would better fit the naive user's task environments and "model of man". Eason et al. (1975) highlighted the need for ease of use of computer systems and outputs that are easy to read and analyse which employ standardized software procedures. However, they argue that a balance is required because, in designing computer systems to be easy-to-use, the power of the system available to the user may be limited.

Chen (1986) points to the need for students to be exposed to "real world" applications which require up-to-date computer technology. Eason et al. (1975) stressed the importance of easy-to-use computer hardware. The tendency has been for up-to-date hardware to incorporate devices, such as the mouse, which make them easier to use. Practically, schools may not be able to afford to buy this level of hardware and software, but options need to be considered which may either simulate this hardware and software or give students limited access.

2.5.4 Limited Accessibility and Network Connectivity

Limited accessibility and network connectivity is a challenge facing computer studies as mentioned by Ghavifekr et al. (2006), this challenge was of great concern to Mungai (2011) in his article "12 Challenges facing computer Education in Kenyan Schools" where he explained that most schools in Kenya do not have internet access in their schools due to the expensive internet cost and the

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relative slow speed(128/64kbps). However, a number of studies have cited a number of reasons for this challenge faced in most schools. According to a study by Sicilia (2005) as cited by Ghavifekr, Afshari and Amla, (2006) , the major reason indicated by the teachers was how difficult it was to always have access to computers. The study also revealed that "computers had to be booked in advance and the teachers would forget to do so, or they could not book them for several periods in a row when they wanted to work on several projects with the pupils" (p. 50).

The non-availability of computer hardware and software and relevant ICT material is not according to Becta (2004), merely the inaccessibility of ICT but as a result due to the poor organizational resource, inappropriate software, and lack of personnel to access them. Empirical (2006) conducted a study and also found that the non-accessibility to ICT materials is the largest barrier affecting a number of schools as was reported by their teachers. Similarly, another study done in European schools found that there exists some challenges in ICT infrastructure such as the unavailability of broadband access hence concluding that one-third of European schools lack network access (Korte & Hüsing, 2007). Pelgrum (2001) explored practitioners' views from 26 countries on the main obstacles to ICT implementation in schools. The study concluded that four of the top ten barriers related to the accessibility of ICT were insufficient unit of computers, insufficient peripherals, insufficient numbers of copies of software, and insufficient immediate Internet access. This was similar to the report from Toprakci (2006) whose study found that low numbers of computers, oldness or slowness of ICT systems, and scarcity of educational software in the school were barriers to the successful ICT implementation in Turkish schools. Furthermore a study by Albirini (2006) on teachers' attitudes toward information and communication technologies: the case of

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Syrian EFL teachers revealed that insufficient computer resources were one of the greatest impediments to technology integration in the classroom.

Mungai (2011) commented on the lack of computers in Kenyan school, according to him, Computers are still very expensive and despite efforts by the government agencies, and other agencies to make it available and accessible though donation of computers there still remains a large proportion of schools without adequate access to computers.

2.5.5 Limited Technical Support

Additionally, limited technical support is another challenge that schools faced in the teaching and learning of ICT. Lewis (2003) argued that in the absence of good technical support in the classroom and the entire school leads to obstacles in using ICT. The teachers in primary and secondary schools also identified the lack of technical assistance as one of their top challenges in their schools (Pelgrum, 2001). Similarly, Korte and Hüsing (2007) supported this challenge as they revealed that ICT support and maintenance is necessary to aid teachers to ICT in teaching without losing time fixing the problems they face.

2.5.6 Lack of Teachers' Competency

Another challenge was teachers' competence as noted by Becta (2004). A study in Australian research conducted by Newhouse (2002) cited in Ghavifekr et *al.* (2006) indicate a number of teachers lacked the knowledge and skills to use computers and were unresponsive about the changes and combination of supplementary learning associated with bringing computers into their teaching practices.

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Recent researches have revealed that the level of this barrier differs from country to country. In the developing countries, research reported that teachers' lack of technological competence is a main barrier to their acceptance and adoption of ICT (Pelgrum, 2001; Al-Oteawi, 2002). Similarly, The results of a study conducted by Balanskat et al. (2006) have shown that many teachers in Denmark, still chose not to use ICT and media in teaching situations because of their lack of ICT skills. However, Newhouse (2002) found that many students lacked the knowledge and skills to use computers and were not enthusiastic about the changes and integration of supplementary learning associated with bringing computers into their learning practices. Mungai (2011) captures another challenge as a lack of qualified teachers to teach ICT in schools. The author argued that the demand for ICT learning has been tremendous and the number of teachers who are trained to teach ICT cannot meet the demand in Kenya. The author stated that there are more pupils willing to be taught computing skills than there is teacher to transfer the skills to them.

2.5.7 Limited Time

Limited time according to literature is another challenge faced in computer education, teachers have competence and confidence in using computers in the classroom, but they still make little use of technologies because they lack the time. A number of researches have shown that limiting the difficulty in scheduling enough computer time for classes is a barrier to teachers' use of ICT in their teaching (Beggs, 2000; Becta, 2004; Al-Alwani, 2005; Sicilia, 2005). Similarly limited time allocated to class was also identified by 16.25% of the respondent in a study organized by (Peprah, 2016). A similar study done by Pelgrum (2001) indicated that lack of training opportunities for teachers is yet another challenge

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confronting the use of ICT Similarly, Beggs (2000) also reported the lack of ICT training is one of the top three barriers to teachers' use of ICT in teaching.

In Kenya, Mungai (2011) listed a number of challenges facing computer education in that country. These are lack of electricity as many schools in Kenya are reportedly still not connected to electricity; as the government has not been able to connect all parts of the country to the national electricity grid. Consequently, those schools that fall under such areas are left handicapped and may not be able to offer computer studies. With regards to High cost of computers in Kenya, he argued that in a country with a Gross Domestic Product (GDP) of $1600, majority of the individuals and schools cannot afford to buy a computer and consider it as a luxury item, more expensive than a TV. While second hand computers cost as little as $150 and branded new computers being sold at $500 or higher. In addition, broken down computers, while a good number of schools have benefited from the donations of used computers, they have not been adequately equipped with the same on maintenance and repair, hence its very common to see school computers laboratory full of broken-down computers, some repairable and some not.

Moreover, burglary; the fact that computers are still very expensive in Kenya, makes them a target for thieves who usually have ready markets to another party at a much less figure. This has made many schools to incur extra expenses trying to secure their computer laboratory, hence costing the schools more fund to keep their computers safe. A school that cannot afford this extra cost decides not to buy the computers for their school. Besides, the teacher may fear being rendered irrelevant by the introduction of computers in his or her class.

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The idea that the teacher still remains an authority and a 'know it all' in class is something that most teachers cherish, and anything that makes them otherwise is deemed an enemy of the classroom. Obsolete computers lower the morale of both the teacher and the pupil. It is very common to find some schools using very old computers. Increased moral degradation – internet pornography, cyber bullying and other anti-social behaviors is a worrying emerging problem.

A study done in Ghana by Peprah (2016), revealed the unavailability of ICT laboratory as identified by majority of the pupils (96.1%) making it impossible for them to do practical after teaching. Again, 2.8% perceived that there is not enough time for them to do practical after teaching. The pupils further suggested that they indeed face barriers when accessing the laboratory. Examples of such barriers faced by pupils were mostly limited computers at the laboratory (47.9%) and small laboratory size or the lack of space in the laboratory (9.3%). Also, 35.7% of the pupils experienced barriers including large class size and non-functioning computers (Peprah, 2016).

The Ministry of Education (2015) has stated that in an attempt to make computer education accessible to her schools has, however, been faced with a number of challenges. These are:

- Poor selection of schools without the involvement of GES / MOE resulting in duplication and hence some schools having several parallel initiatives while others (especially those in the remote rural towns) had none.

- Lack of policy direction at all levels (schools, districts, national) for the integration of ICT in education.

- Heavy dependency on external funds, with most initiatives stopped after depletion of initial funding.

- Dumping" of obsolete and inappropriate equipment as support" for the initiatives.

- Low levels of ownership at the level of the schools, due to external motivations, and low levels of understanding on the part of recipients about the potentials of ICTs in education.

- Lack of trained ICT personnel (including teachers) far below the numbers demanded to support the initiatives with most capacity building efforts one-off with no continuous trainings planned for.

2.6 Empirical Review

Nyaga, (2013) investigated the challenges facing effective information and communications technology implementation in selected public secondary schools. Head teachers, Deputy Head teachers and teachers in public secondary schools in Nakuru North District formed the target population. Systematic sampling technique was used to select ten schools. Eight (8) teachers were randomly selected from each school for the study giving a total of 80 teachers. The total sample size for the study was 100 respondents. The research design used was a descriptive survey design. Data collected was both quantitative and qualitative. The revealed that there were a number of challenges facing effective implementation of ICT in schools. These challenges included: few computers and computer labs, insufficient internet connectivity, power unreliability and lack of sufficient equipment such as LCD projectors, speakers among others to enhance effective implementation.

Simin et al. (2019) conducted a study on issues and challenges facing teachers in the use of ICT. A quantitative research design was used to collect the data randomly from a sample of 100 secondary school teachers in the state of Melaka, Malaysia. Evidence has been collected through distribution of a modified- adopted survey questionnaire. Overall, the key issues and challenges found to be significant in using ICT tools by teachers were: limited accessibility and network connection, limited technical support, lack of effective training, limited time and lack of teachers' competency. Moreover, the results from independent t- test show that use of ICT tools by male teachers (M =2.08, SD = .997) in the classroom is higher compared to female teachers (M = 2.04, SD = .992).

Taban et al. (2012) employed a study which aimed at finding out the difficulties faced by teachers in using Information and Communication Technology (ICT) in classroom teaching-learning in technical and higher educational institutions in Uganda. Chi square test and weighted average using Statistical Package for Social Science (SPSS) software were used to analyze and interpret the data. The findings of this study revealed that teachers had a strong desire to integrate ICT into teaching-learning process even though with difficulties. The major barriers were lack of genuine software, inadequate computer in the classroom, low speed internet, lack of motivation from both teacher and student side to use ICT, lack of proper training skills, unavailability of latest ICT equipment, lack of expert technical staff, poor administrative support and poor course curriculum.

Olufunmilayo and Airen (2017) examine a paper to ascertains the extent to which undergraduates in two federal university libraries in Nigeria are computer literate and how their computer literacy level has affected their use of Online Public

Access Catalog (OPAC). Level of undergraduates' computer literacy in both universities studied was high but their level of OPAC use was low. OPAC-compliant universities in Nigeria should identify reasons for low use of OPAC among their undergraduates and strategies should be placed to tackle them. Policies to encourage high level of OPAC use among undergraduates should be implemented by university libraries. The study recommended that awareness programmes should be sustained to improve undergraduates' level of OPAC use.

Monyoro (2013) investigated factors affecting the use of computers in teaching and learning of Mathematics in secondary schools. A descriptive survey study was employed to obtain both qualitative and quantitative data on factors that affect the use of computers in teaching and learning of Mathematics in the district. Stratified random sampling was used to select 323 form three students and 32 Mathematics teachers. Data was analysed by the use of the statistical package for social sciences (SPSS) to investigate factors affecting use of Computer in teaching and learning Mathematics. The study findings indicated that there was minimal use of computers in teaching and learning of Mathematics due to lack of Mathematics software, fewer computers per school, lack of computer skills by teachers and students, power blackouts and inadequate computer laboratory space to accommodate mathematics students.

Further, Newhouse (2002) used interpretive research techniques to investigate the factors which affect the computer literacy of secondary students. The data sources were: classroom observation; student interviews at the beginning and end of the course; an attitudes questionnaire; a background questions sheet; and student mathematics and computing class grades. In addition, to test assertions which

emerged during the study, a group of 12 students was interviewed. The study found that students entering secondary school tend to have attitudes which are conducive to the use of computers. The major obstacles to students' use of computers were: unreliability of hardware; lack of student keyboarding skills; and the use of abstract concepts in software design.

Righi (2012). examine the impact of laptop computers on student learning behaviours. Qualitative research methodology was used in this study and the data consisted of classroom observations, a review of the teachers' lesson plans, and in-depth interviews with five classroom teachers. The results of the study revealed that laptop computers had a positive impact on student learning behaviours. Students were engaged in the learning process, produced higher quality work, and had improved communication with their teachers when they had access to laptop computers. Through analysis of the data, the researcher suggested that the changes in student behaviour occurred because of personalized learning for each student, access to multiple materials and media, and the laptop computer serving as assistive technology.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter describes and discusses methodology, which would be used to conduct this study and the materials to be used in the research process. It consists of the study design, description of the study area, study population, exclusion and inclusion criteria, sampling, data collection tools and procedures, how the data analysis would be done and ethical issues.

3.1 Research Paradigm

From the "Positivist", point of view, social phenomena should be studied using the scientific method with emphasis on empiricism (Alakwe, 2017). This method was developed in the 19th century by Auguste Comte, a French philosopher who believed that reality could be observed. A positivist maintains that the purpose of research is to prove or disprove a hypothesis using the scientific method, statistical analysis and generalizability of results. Comte's position is that for knowledge to be termed authentic, it must be scientific and thus must emerge strictly from positive affirmation of theories through the gathering of observable, empirical and measurable data which is subjected to specific principles of reasoning. Comte's position gave rise to the universal dogma of "positivism" which presents all knowledge as a consequence of sensory experience which can only be refined by observation and experiment (Cohen, et al., 2007).

The positivistic perspectives' purpose is to portray the phenomena that human beings' experiences can be measured. Collins (2010), supported it by saying that positivism as a branch of philosophy is in line with empiricism which holds that

knowledge is derived from individual experiences. He went further to state that positivism sees the world as being made up of distinct, observable components and occurrences that relate in such a way as to enable observation in a consistent manner (Collins, 2010).

Positivists postulate that science relies entirely on observations and measurements. Indeed, knowledge of anything beyond that is impossible (Patton, 2002). B. F Skinner believed that psychology needs to focus on positive and negative reinforcement of behaviour in order to predict how people behave (Hergenhalan & Olson, 2001). He argued that everything else is irrelevant as we cannot measure it. While identifying cause and effect is impossible in a naturalistic inquiry approach, positivists believe that reality can be explained as the result of a cause that occurs before the effect temporally or simultaneously (Patton, 2002).

Some of the views of the positivists are: (1) A single reality exists that can be fragmented into variables and processes, predicted and controlled; (2) the inquirer (the knower) and the inquired (the object of known) are separate, discreet entities; (3) the purpose of inquiry is to develop a "nomothetic" body of knowledge in the form of generalizations that are true and will hold for times and places; (4) inquiry is value-free and maintained as such through use of objective methodology (Grbich, 1999; Lincoln & Guba, 1985; Patton, 2002).

The positivist researcher believes that there exists an external reality separate from the observer and mode of observation whose properties can be determined through measurement and experimentation (empiricism). In fact, the purpose of empiricist research is to increase knowledge, whose results tend to be expressed

quantitatively (Goodwin & Goodwin, 1984). Modern empirical science is committed to the search for knowledge.

3.2 Research Approach

The methodology of a quantitative research maintains the assumptions which makes it possible to use data to objectively measure reality (Creswell, 2012). Quantitative research therefore, responds to relational questions of variables within the research. The intent is to establish, confirm or validate relationships and to develop generalizations that contribute to theory (Leedy & Ormrod, 2010). The emphasis therefore is to bring to light both posteriori and priori knowledge regarding variables such as computer literacy among basic school students through quantitative approach. When measurement tools are proven valid and reliable, data can be collected by the inquirer. This data can be portrayed numerically and analyzed by statistical methods in order to identify the existing relationships between phenomena. The primary purpose of a quantitative inquiry approach is to test the theory inductively by systematically testing the hypotheses (Morse & Field, 1995)

3.3 Research Design

Bless and Higson-Smith (2000) explained that it is mandatory for all research studies to have a study design in achieving the objectives of the study. The study used the descriptive survey research design. Descriptive survey research design objectively allows for the accurate description of activities, objects, processes and persons. The purpose of descriptive survey is to observe, describe and document aspects of a situation as it naturally occurs (Amedahe, 2002). Descriptive survey research has the ability to obtain data regarding persons or groups of persons who possess some

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identified features, perceptions, behaviours, and beliefs with questioning and soliciting of responses concerning the current status of the subject of the study.

Williams (2007) maintains that descriptive research involves identification of attributes of a particular phenomenon based on an observational basis, or exploration of correlation between two or more phenomena. In essence, the study employed the descriptive survey research design with quantitative approach in achieving the ultimate objectives of the study. Quantitative approach involves the process of employing objective measure to a numerical data with the view of demonstrating the relationships existing between variables (Cresswell, 2014). In quantitative approach, researchers employ quantitative methods to assess the magnitude and frequency of constructs to explore meaning and understanding of constructs (Creswell & Plano-Clark, 2011). The core assumption of the quantitative approach as a characteristic of descriptive research involves the use of numerical analysis of hypothesis formulation and testing or formulation of research questions and seeking answers to them (Cresswell, 2014).

It must be pointed out that, descriptive surveys seek to gather data at a particular point in time with the intention of describing the nature of existing conditions or identifying standards against which existing conditions can be compared (Creswell (2012). Surveys are also capable of providing descriptive, inferential and explanatory information that can be used to ascertain correlations between items and the themes of the survey (Cohen, M 2007).

With regard to the ultimate aim of the study that seeks to assess the computer literacy and factors affecting it in Public Basic Schools in Debibi Township in the Tain District, the use of quantitative approach is quintessential. This is because, there

is the need to gather data from a wide population of respondents in order to make generalizations. In addition, there is the need to provide a descriptive measure on the computer literacy among students. This therefore calls for the gathering of standardised information by using the same instruments and questions for all sampled respondents.

This study is descriptive because, as indicated by Cohen et al. (2007), it sought to describe and explore a phenomenon in real life situation and to generate new knowledge about the topic. Punch (2005) has indicated that descriptive survey is basic to all types of research in assessing the situation as a pre-requisite for conclusions and generalisations.

Fraenkel and Wallen (2006) opined that the purpose of descriptive survey research design is to observe, describe and document aspects of a phenomenon as it naturally occurs. As indicated by Polit and Beck (2008), descriptive surveys gather information to represent what is going on at only one point in time. Moreover, with regards to the quantitative approach, Dudwick et al. (2006) asserted that quantitative approach aids others to make informed decisions and validations regarding the authenticity of the findings without repeating the analysis necessarily. On the other hand, as suggested by Neuman (2000), quantitative approach fails to provide an in-depth description of participants' experiences regarding a study which tends to be a major demerit of adopting the quantitative approach.

It must be pointed out that, descriptive survey research design with quantitative approach fails to ask probing questions as well as inability to seek clarifications especially when structured or closed ended questionnaires are used as data collection instruments. Despite the deficiencies, the descriptive survey design

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was chosen for the study because judging from the main thrust of the study where data was collected at just one point in time on samples from the selected schools it was deemed the most appropriate design.

3.4 Study Area

Debibi is one of the major towns located in the Tain District of the Bono-Region of Ghana. It lies within the Western part of the Bono Region of Ghana and is located about at the Northern part of 55 kilometres away from Wenchi. Debibi is bounded by a number of communities such as Bonakire, Bodi, Namasa, Banda 1, Hani, Hank, and Donkorkrom**.** Debibi lies within the Forest Zone. Average rainfall is about 800mm and has two (2) raining seasons; the minor season occurs between August to October with the major rains occurring between May - July. Temperatures are high throughout the year, March–April being the hottest period with temperatures reaching 32ºC during the day and 27ºC at night. Cooler temperatures occur from May-September (27-29ºC during the day and 22-24ºC in at night). Humidity varies with the seasons, 60-80 degrees in the wet season and less than 30 degrees in the dry periods (Ghana Statistical Service, 2014). Debibi is well endowed with a number of educational institutions both Public and Private including Basic Schools, Technical/Vocational Schools, and Second Cycle institutions with four (4) Public Basic Schools and three (3) Private Basic Schools. The Tain District Education Directorate is the highest Administrative Authority which represents the Ghana Education Service in the Municipality. It coordinates and plans the activities of the various educational programmes in the district. The geographical map of Bono Region showing all the sub-districts as shown below:

Figure 2: Source: Ghana Statistical Service (2014).

3.5 Study Population

Gorard (2001) explained that a population refers to a group of subjects out of which a sample is selected to generate results of a study. The study population comprised of all Public Basic School pupils attending public schools in the Debibi township which amount to 1050. The accessible population for the study consisted of Form 2 in the three (3) selected Public Basic Schools namely Debibi Seventh Day Adventist JHS, Debibi Presbyterian JHS and Debibi Roman Catholic JHS. The second-year students were used for the study because their long stay on campus might have exposed them to various experiences and knowledge regarding what computer literacy. As at 2021, the total population of public Basic School Form 2 students in the three selected schools was 850 (Debibi Seventh Day Adventist JHS, Debibi

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Presbyterian JHS and Debibi Roman Catholic JHS, 2021). As indicated by Kothari (2004), it is from the accessible population that a sample is selected for a study. The distribution of the population among the three selected JHS is shown in Table 1.

Table 1: Distribution of Population Based on Students

Name of schools	Students	M	F	Sample Size	M	F
Debibi Seventh Day Adventist JHS	349	200	149	121	69	51
Debibi Presbyterian JHS	226	123	103	78	43	36
Debibi Roman Catholic JHS	275	141	134	95	49	46
Total	850	464	486	294	161	133

Source; Fieldwork 2022

3.6 Sample and Sampling Procedures

A sample is a subset of the population that is investigated in order to make broad conclusions about the target population (Creswell, 2014). According to Fowler (2009), the purpose of sampling in research is to choose a subset of the population that is representative of the entire population.

In order to select the sample from the population of Public Basic Schools Students in the three selected schools in the Tain District, the Krejcie and Morgan (1970) sample size determination table was employed. A sample of 294 students was obtained from the three selected schools for the study. This comprised of Debibi Seventh Day Adventist JHS = 108, Debibi Presbyterian JHS = 88, and Debibi Roman Catholic JHS = 98 respectively. In all 161 males and 133 females were selected for the study (See Table 1).

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Proportionate sampling procedure was used to obtain the sample size for each school. The proportional sampling procedure was used because the researcher wanted to ensure a fair representation of the various schools in terms of their class size. Also, in other to ensure a representation of the various gender groupings it was imperative to use proportional sampling. The total population of each school was divided by the total population of the three sampled schools which were multiplied by the sample size of 294. Therefore, 121 out of 349 students which consisted of 69 males and 51 females, 78 out of 226 students which consisted of 43 males and 36 females and 95 out of 275 students which consisted of 49 males and 46 females were sampled to represent each of the three schools (See Table 1).

Simple random sampling was used to select the students in various schools for the study. The simple random sampling was considered most appropriate because it gives each element in the population an equal probability of getting into the sample; and all choices are independent of one another (Kothari, 2004). It also gives each possible sample combination an equal probability of being chosen (Kothari, 2004). In the simple random sampling, the lottery technique was used in selecting the students. The names of all the students in the various schools were coded on pieces of paper. The coded pieces of paper for each student were folded and placed in a bowl. The researcher shook the bowl and picked the folded paper one after the other until the number needed was arrived at.

3.7 Data Collection Instrument

The main instrument used to collect the data for the study was the questionnaire. The questionnaire was structured based on the research questions, and the key variables of interest to the study. The instrument was a self- developed questionnaire

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and it was developed based on the literature review. The questionnaire was named Computer Literacy Questionnaire. The questionnaire was divided into five sections. Section A contained background or demographic information of the respondents while section B contained responses on computer literacy of the pupils. Section C contained responses on the factors that affect computer literacy while section D contained responses on challenges faced during the learning of Computer. The respondents were asked to respond to each item on two degrees of agreement or disagreement. That is YES or NO responses.

3.8 Pre-Testing

Pre-testing was done to validate the instrument, that is, to find out how valid and reliable the instrument for the main data collection was. The researcher used 10% of the students from Debibi Methodist Basic School for pre-testing the instrument. According to Cohen et al. (2007) using 10% of the sample size for pre-testing an instrument is laudable. Debibi Methodist Basic School was chosen because they have similar characteristics with the population under study. The pre-testing helped in checking appropriate wording, items which yield small number of responses. At the end of the exercise, it became necessary to refine some of the items and also add to the list of items. The pre-testing was to help update the instrument as well as give clues as to how long the respondents in the main study will require to finish attending to all the items in the questionnaire.

3.9 Validity of Instruments

Based on the analysis of the pre-testing, modification and removal of ambiguous or unclear items such as questions, inaccurate responses which indicated weaknesses was done to attract appropriate responses from the respondents. Borg and

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Gall (1989) asserted that content validity of an instrument is improved through expert judgment. The supervisors and three experts in the Department of Educational Foundation went through each item on the questionnaire to evaluate their relevance to the objectives of the study. Also, to enhance validity, pre-testing was carried out to help the researcher in identifying items in the research instruments that were ambiguous in eliciting relevant information, modifications of the instrument were then made where necessary. The pre-testing helped to refine the research instrument.

3.10 Reliability of Instrument

To determine the reliability of the instrument, the questionnaire was subjected to a trial test outside the study area. The instrument was administered to 30 students at the Debibi Methodist Basic School. The Cronbach's Alpha method of determining reliability co-efficient was used to determine the internal consistency of the instrument. Reliability co-efficient for sections B, C, and D, were .73, .63, and .70 respectively while the overall reliability co-efficient was .80. According to Roland and Idsoe (2001), this score is regarded as significant for a research purpose.

3.11 Ethical Considerations

In pursuance of ethical considerations, the right to privacy, voluntary participation, no harm to participants, anonymity and confidentiality were held in high esteem. It should be emphasized that students and teachers have rights to privacy and as a result, these rights must be respected at every point in time. In this light, the rights of privacy of respondents in the study was respected and under no circumstances were respondents studied without their knowledge or consent. In addition, one of the key components regarding ethical issues in research has to do with respondents' voluntary participation. Responding to questionnaires in the study

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of this nature demanded a lot of time and energy which can lead to the disruption of the regular activities of respondents. It is for this motive that I explained the objectives and significance of the study to the respondents and therefore, allowed respondents to exercise their voluntary right in their participation of the study.

Another ethical issue in educational research has to do with the fact that, the exercise should not cause an injury to the participants under study irrespective of whether they volunteer or not to participate in the study. The concept of harm as used in this regard can be physical, psychological or emotional. In pursuance of this, questions were framed in a way that gave the respondents several alternatives and freedom in selecting the answers that were most appropriate to them.

Furthermore, as part of the ethical issues in research, the ultimate goal is to protect and safeguard the well-being, interest and the identity of the respondents. In pursuance of this, I adopted anonymity and confidentiality techniques such as disclosure of respondents' names in ensuring the protection of respondents. The respondents were therefore assured that the information they provided would be kept confidential.

In addition, it should be said that in research, unethical behaviour which include plagiarism is not welcomed. This normally originates when a researcher falsifies, distorts data or plagiarizes other peoples' works. In this study, the researcher followed strictly the prescribed standard of scientific behaviour to avoid plagiarism. The researcher therefore gathered information from the right respondents and subjected the information gathered in proper analyses before writing the research report. Notably, ideas, works and writings were duly acknowledged by way of

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providing appropriate references in the in-text referencing and the main referencing as adopted by the University of Education, Winneba.

3.12 Data Collection Procedure

An introductory letter was taken from the Department of Education Foundations and the Tain District Education office. The researcher organized a day's workshop for all three (3) data collectors to explain the core procedures and aims of the research to them. Data collectors were then assigned to a school each. Upon arriving at the schools, the data collectors selected and distribute the questionnaires to the sample in each class, explained the aims of the research with them and ask if they were willing to participate. Those willing to participate were asked to sign the declaration on the questionnaire and those not willing were replace by another set of possible participants. The data collectors then read the questions to the participants while they answer accordingly encouraging them to answer the questions they can answer as well as creating an atmosphere devoid of copying responses from their colleagues.
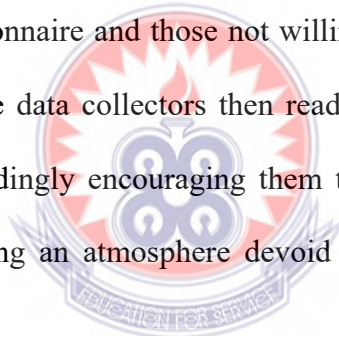
3.13 Data Analysis

The questionnaire was edited in order to address questions that were answered partially or not answered. The questionnaire was serially numbered to facilitate easy identification. It was necessary to observe this precaution to ensure quick detection of any source of errors when they occur in the tabulation of the data.

After editing and coding, the data was entered into the computer using the Statistical Package for the Social Sciences (SPSS version 22.0) software. Before performing the desired data transformation, the data was cleaned by running consistency checks on every variable. Corrections were made after verification from

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the data. The demographic variables from the questionnaire were analysed using frequencies and percentages. The frequencies and percentages were based on the age range of the students, and their gender. The second section of the data was analysed based on the research questions set for the study using descriptive statistics. All the research questions were analysed using frequency and percentages as well as chi-square.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.0 Overview

This chapter presents the findings of the research. They were presented with regards to the specific objectives thus, the computer literacy level in public basic schools in the Debibi Township in the Tain Municipality, the factors affecting computer literacy and the challenges affecting computer studies in Debibi. The chapter further compares the findings with literature.

Table 2- Demographic Characteristics of Pupils

Demographic Characteristics of respondents		
Variables	**Frequency (N=294)**	**Percentage (100%)**
Age		
Less than 14years	88	29.93
14 to 15 years	129	43.88
16years and above	77	26.19
Mean (SD)	14.49(1.69)	
Gender		
Boys	154	52.38
Girls	140	47.62
Name of School		
Debibi SDA JHS	91	30.95
Debibi Presby JHS	110	37.41
Debibi RC JHS	93	31.63
Form		
Form 1	110	37.41
Form 2	109	37.07
Form 3	75	25.51
Transferred within 2years		
Yes	41	13.95
No	253	86.05

Source; Fieldwork, (2022)

4.1 Demographic Characteristics of Pupils

Table 4.1 above shows the demographic characteristics of the pupils who participated in the study. Majority the of the pupils were between the ages of 14 to 15years while 16 years and above formed the group with the minority representing about 44% and 26.1 respectively. The mean age for the pupils was 14.49 years with a standard deviation of 1.69. The boys formed about 52% of the sample size while the girls represented 48%. The pupils were drawn from all three public basic schools in Debibi township. The school with the highest representation was the Presbyterian Junior High School (37.41%) this was followed by the Roman Catholic Junior High School (31.63%) with the Seventh Day Adventist (SDA) Junior High School representing the minority thus about 30.95% of the sample size.
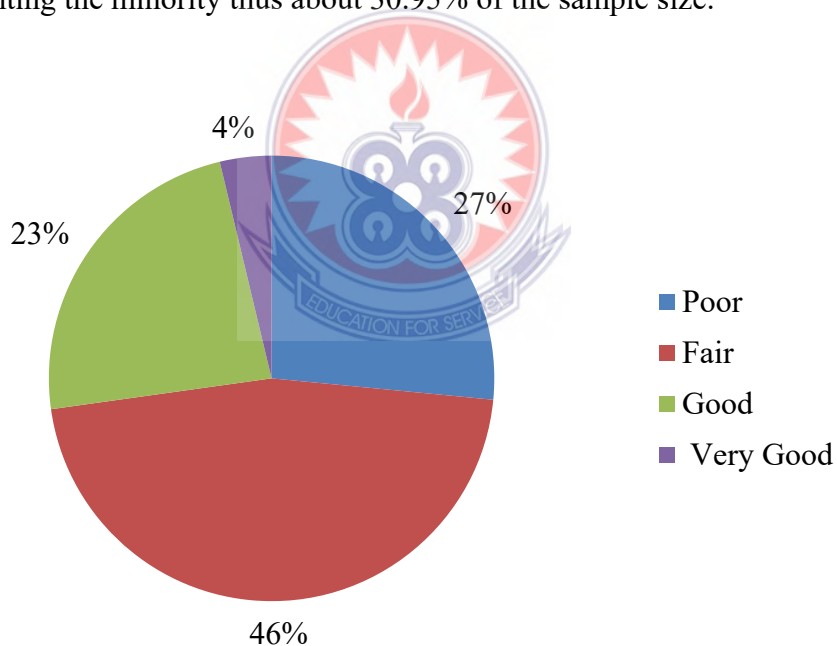
Figure 4:1 Overall Computer Literacy Level of Pupils

4.2 Research Question 1: What is the computer literacy level in public basic school in Debibi Township?

Figure 4.1 below represents the overall computer literacy level of the pupils in Debibi Township. About 46% of the pupils representing the majority have a fair computer literacy level, 27% of the pupils have a poor computer literacy level, 23% with a good computer literacy level, four percent with a poor computer literacy level and one percent having an excellent computer literacy level.
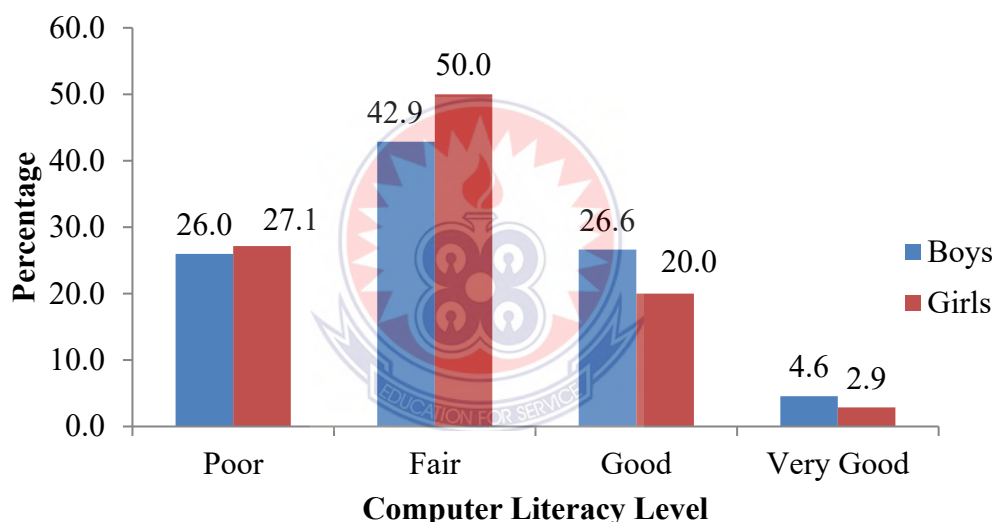

Figure 4:2 Overall Computer Literacy Level by Gender

Figure 4.2 above represents the overall computer literacy level by gender, the females reportedly have a fair computer literacy level than their male counterparts as about 50% were found in that catergory compared to 42.9% of the males. The females again had a poor computer literacy level than their males counterparts as about 27.1% recorded that level compared to about 26% of the males. The males however have a good computer literacy level than their female conterparts thus 26.6% compared to

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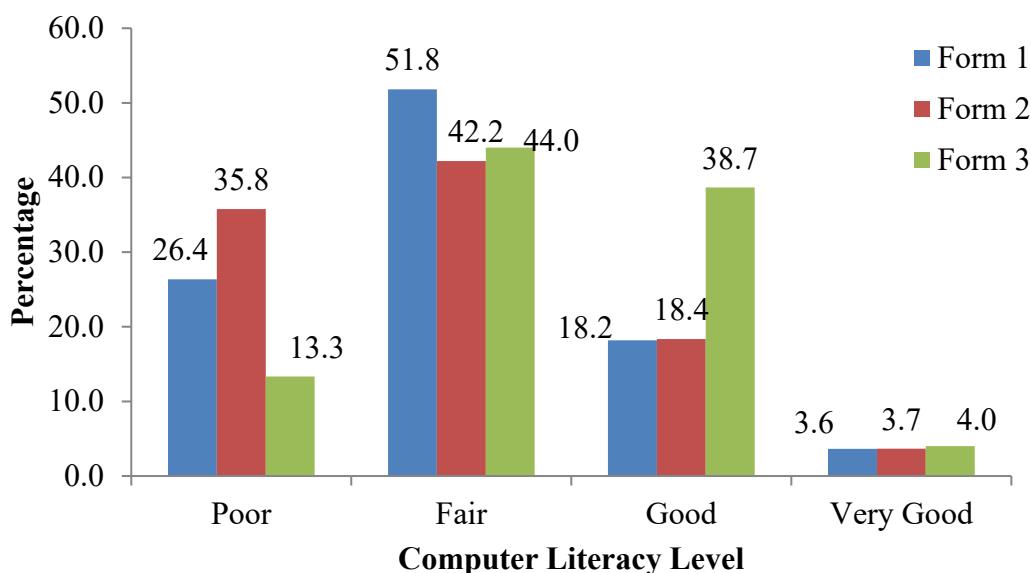about 20% of the females. Again lesser females have a very good computer literacy level than the males.

Figure 4:3 Overall Computer Literacy Level by Class

Figure 4.3 above represents the overall computer literacy level by class, the form one class reportedly have a fair computer literacy level than the forms threes and form twos who recorded 51.8%, 44.0% and 42.2% respectively. On the other hand the form two class have a poor computer literacy level than the other classes as about 35.8% of the form twos fell in that category as compared to 26.4% of the forms ones and 13.3% of the form threes. The forms threes have a good computer literacy level as 38.7% of them fell in that category compared to about 18.2% of the form twos and about 18.2% of the form ones. With regards to very good computer literacy level, the form threes are the majority in that category as about 4% of them are in that category.
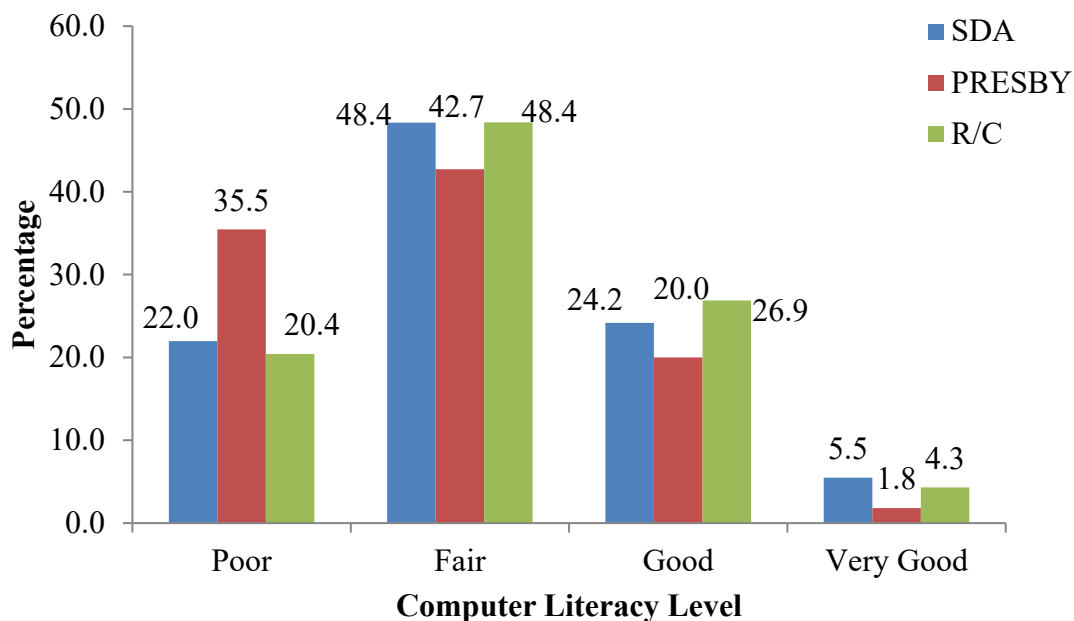
Figure 4:4 Comparison of Computer Literacy Level.

Figure 4.4 above compare the computer literacy level among the three schools. SDA and R/C recorded the highest percentage in the fair computer literacy category thus 48.4% each while Presby recorded about 42.7% of their pupils in that category. On the other hand, Presby had majority (35.5%) of her pupils in the poor computer literacy category compared to 22% of SDA and 20.4% of R/C. With regards to the good category, R/C has the majority (26.9%) compared to 24.2% of SDA and 20% of Presby. Also, SDA had majority (5.5%) with reference to the very good category while R/C and Presby had 4.8% and 1.8% respectively.
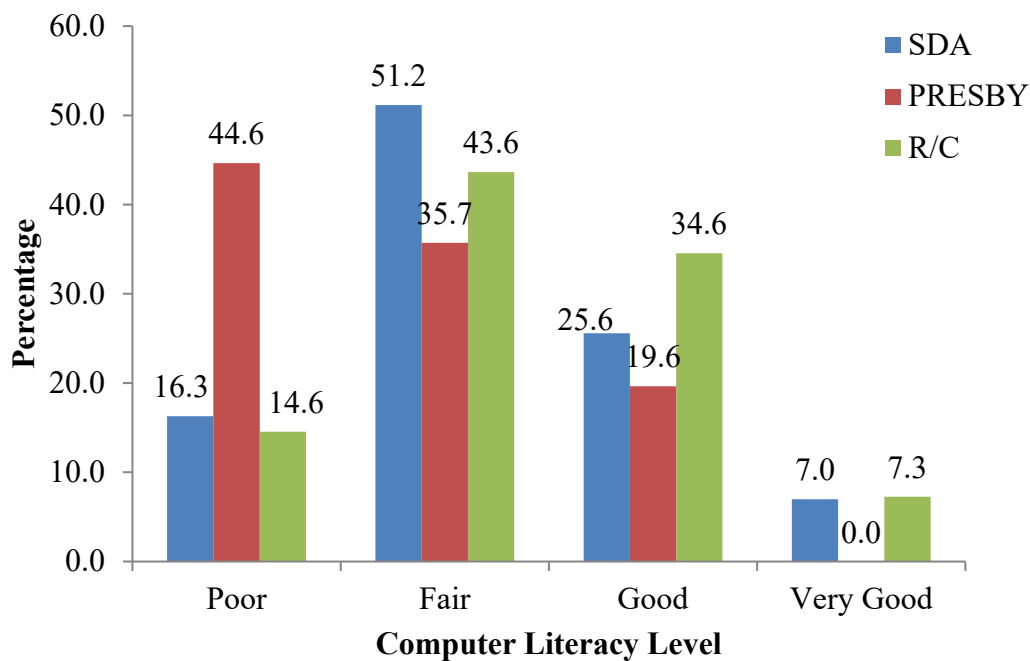
Figure 4:5 Computer Literacy Levels Among Male Pupils

Figure 4.5 above shows a comparison of the computer literacy levels among the male pupils in all schools. The males from the Presby JHS were the majority (44.6%) with regards to the poor computer literacy level while SDA and R/C recorded 16.3% and 14.6% respectively. However, 51.2% SDA Male students thus majority had a fair computer literacy level compared to 43.6% of the R/C male students and 35.7% of the Presby male pupils. R/C male students on the hand recorded the majority in the Good and very Good computer literacy category.
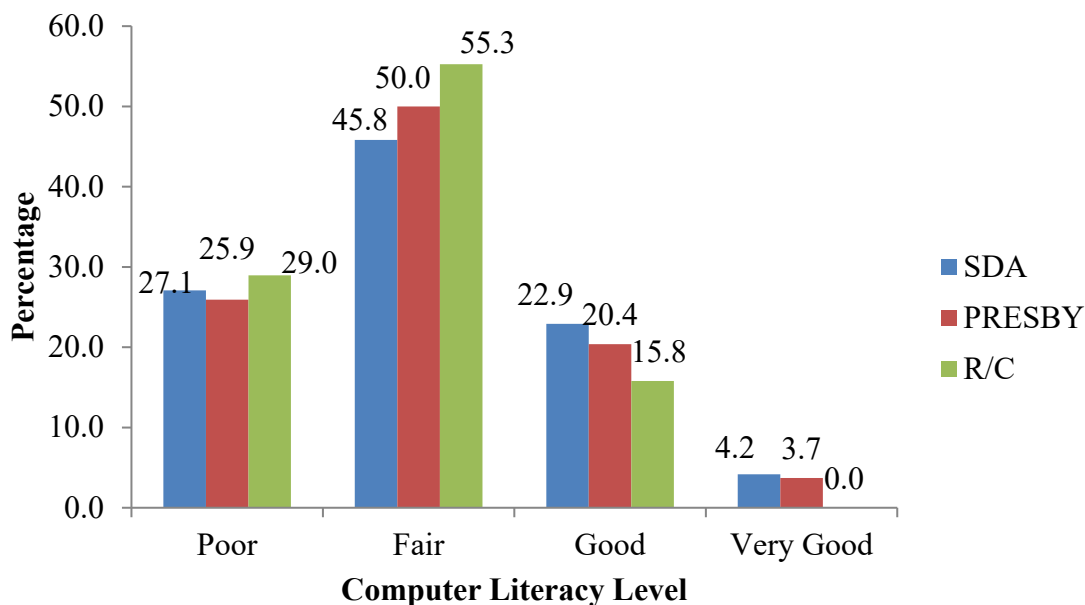
Figure 4:6 Computer Literacy Levels Among Female Pupils

Figure 4.6 above shows a comparison of the computer literacy levels among the female pupils in all schools. The females from the R/C JHS were the majority (29%) with regards to the poor computer literacy level while SDA and Presby recorded 27.1% and 25.9% respectively. Again, 55.3% of R/C female students thus majority had a fair computer literacy level compared to 50% and 45.8% of their colleagues in Presby and SDA respectively. However, SDA female students were the majority in the good and very good computer literacy level.

This study revealed that in the Debibi, the computer literacy level of the pupils is low as majority (214(73%)) of the pupils had at least a fair computer literacy level with only (80(27%)) having at either a fair or a poor computer literacy level. On the contrary, this was however lower than the percentage of pupils who took a part in the study by Amenyedzi *et al*.(2011) in Tema metropolis as cited by Owusu-Ansah and Asante (2015) which revealed that 78% of the pupils are computer literates. Also study revealed that the proportion of pupils with at least a good computer literacy

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level was 27% as compared to 80% in a similar study conducted by Robabi and Arbabisarjou (2015) among pupils of Zahedan University of medical sciences.

The study again reveals that the Seventh Day Adventist JHS and Roman Catholic JHS recorded the highest percentage in the fair computer literacy category thus 48.4% as compared to the figure recorded by the Presbyterian JHS 42.7%. On the other hand, Presbyterian JHS had majority (35.5%) of her pupils in the poor computer literacy category compared to 22% of Seventh Day Adventist JHS and 20.4% of Roman Catholic JHS. With regards to the good category, Roman Catholic JHS has the majority (26.9%) compared to 24.2% of Seventh Day Adventist JHS and 20% of Presbyterian JHS. Also, Seventh Day Adventist JHS had majority (5.5%) with reference to the very good category while Roman Catholic JHS and Presbyterian JHS had 4.8% and 1.8% respectively.

With regards to the gender, the males from the Presbyterian JHS were the majority (44.6%) with regards to the poor computer literacy level while Seventh Day Adventist JHS and Roman Catholic JHS recorded 16.3% and 14.6% respectively. However, 51.2% Seventh Day Adventist JHS Male students thus majority had a fair computer literacy level compared to 43.6% of the Roman Catholic JHS male students and 35.7% of the Presbyterian JHS male pupils. Roman Catholic JHS male students on the hand recorded the majority in the Good and very good computer literacy category.

Furthermore, a comparison of the computer literacy levels among the female pupils in all schools. The females from the Roman Catholic JHS were the majority (29%) with regards to the poor computer literacy level while Seventh Day Adventist JHS and Presbyterian JHS recorded 27.1% and 25.9% respectively. Again, 55.3% of

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Roman Catholic JHS female students thus majority had a fair computer literacy level compared to 50% and 45.8% of their colleagues in Presbyterian JHS and Seventh Day Adventist JHS respectively. However, Seventh Day Adventist JHS female students were the majority in the good and very good computer literacy level.

4.3 Research Question 2: What are the Factors Affecting Computer Literacy Level?

Table 3: Factors Affecting Computer Literacy Level

Factors	Frequency(N=294)	Percentage (100%)	Chi-Squared/P-Value
Personal Computer			
Yes	47	15.99	0.810/0.847
No	247	84.01	
Extra Computer Training			
Yes	68	23.13	3.396/0.334
No	226	76.87	
Computer Usage in the last month			
Yes	113	38.44	11.139/0.011
No	181	61.56	
Days using a computer			
None	182	61.9	
1-2 days	68	23.13	23.518/0.005
3-4 days	26	8.84	
5-7 days	18	6.12	
Number of Devices used			
None	165	56.12	
One	103	35.03	9.766/0.135
Two and above	26	8.84	
Internet Usage			
Yes	171	58.16	13.475/0.004
No	123	41.84	
ICT textbook Ownership			
Yes	141	47.96	28.764/<0.001
No	153	52.04	
Types of Devices Usage			
Desktop	38	22.62	
Laptop	63	37.5	
Tablet	19	11.31	
I pad	13	7.74	
Mobile Phones	35	20.83	

Source: Fieldwork (2021)

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Table 3 above represents the various factors that affect computer literacy level in Debibi together with a chi-square test performed to determine the association between the factors and the computer literacy level at a p-value of 0.05. With regards to ownership of personal computers, about 84% of the pupils do not have personal computers with about 16% of them owning a computer. A chi-squared test performed showed no statistical significance between the ownership of computer and computer literacy level ($\chi^2 = 0.810$, p-value=0.847). About 62% of the pupils did not use the computer in the past one month before the study, however the chi-square test perform shows a statistical significance between the ownership of computer and computer literacy level ($\chi^2 = 11.139$, p-value=0.011). Number of days with regards to the usage of computer was another factor identified, about 62% representing the majority of the pupils did not use computer, while about 7% of the pupils use a computer at least 5 to 7 days a week.

A chi-squared test performed showed a statistical significance between the number of days of computer usage and computer literacy level ($\chi^2 = 32.727$, p-value=0.001). Number of computer devices used was another factor identified as about 71% of the pupils use 1 to 2 devices, 11% use 3 to 4 devices while the remaining 18% do not use any computer device. However, there was a statistical significance when a chi-squared test was performed on it together with the computer literacy level ($\chi^2 = 23.518$, p-value=0.005). Majority of the pupils in the township do not have the ICT textbook thus about 52% of the pupils. There was also a statistical significance between the ownership of a personal ICT textbook and Computer literacy level ($\chi^2 = 28.764$, p-value<0.001). Usage of internet is dominant among the pupils as about 58% of them know how to use the internet as against about 42% who cannot

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use it. A statistical significance was also recorded after the chi-squared test (χ^2 = 13.475, p-value=0.004).

Table 4: Demographic Factors Affecting Computer Literacy Level

Variables	Frequency (N=294)	Percentage (100%)	Chi-Squared/P-Value
Age			
Less than 14years	88	29.93	
14 to 15 years	129	43.88	4.283/0.638
16years and above	77	26.19	
Gender			
Boys	154	52.38	
Girls	140	47.62	2.776/0.427
Name of School			
Debibi SDA JHS	91	30.95	
Debibi Presby JHS	110	37.41	8.749/0.188
Debibi RC JHS	93	31.63	
Form			
Form 1	110	37.41	
Form 2	109	37.07	19.572/0.003
Form 3	75	25.51	
Transferred within 2years			
Yes	41	13.95	
No	253	86.05	7.266/0.064

Source: Fieldwork (2022)

Table 4 above shows the demographic factors that are associated with computer literacy level of the pupils. A chi-squared test performed at a p-value of 0.05 revealed that form or class was statistically significant with a chi-square value and p-value of (χ^2 = 19.572, p-value=0.003) while the other demographic factors were not statistically significantly associated with the computer literacy level.

This study revealed that about (214(74%)) of the pupils do not have a personal computer this was in contrast to the study by Robabi and Arbabisarjou (2015) which reported a 77% of personal computer ownership among pupil. However, there was a

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statistical significance between computer ownership and computer literacy level after a chi-squared test was performed. Again the study saw only about 13% of the pupils part-taking in extra computer training while about 41% took part in an extra computer workshop in the study by Robabi and Arbabisarjou (2015). There was however no statistical significance between taking an extra computer training and computer literacy level. The study again revealed a statistical significance between computer literacy level and number of days of computer usage, number of devices used and ICT textbook ownership and usage of the internet. Majority of the devices used is Mobile phone (144(60%)) followed by Laptop (116(49%)) and Desktop (71(30%)).

Natia and Al-hassan (2015) citing Janssen and Plomp (1997) argued that gender plays a significance role in the ICT usage both at home and in school. Males tend to use computer at school for a wider range of activities than girls either at the primary school or in the secondary school (Janssen & Plomp, 1997). Furthermore Durndell and Thomson (1997) also affirm that boys have more access and use of ICT tools than their female counterparts. These studies may be right as this study also reveals that majority of the males having at least a good computer literacy level than their female counterparts. Also, there was a statistical significance reported between gender and computer literacy level. The class of pupils, the schools they attend and transfer within the last two years also showed a statistical significance when measured with the computer literacy level.

4.4 Research Question 4: What are the Challenges Affecting Computer Studies in Debibi Township?
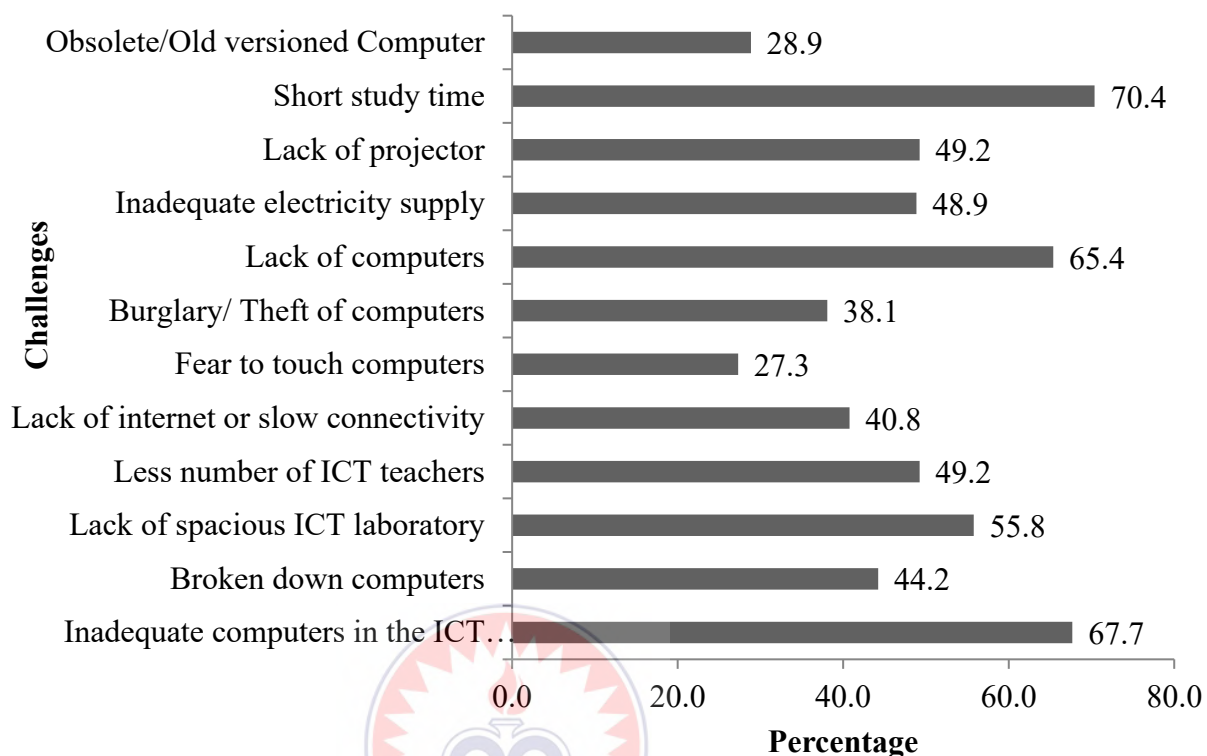

Figure 4:7 Overall Challenges Affecting Computer Studies

Figure 4.7 above shows the overall challenges affecting computer studies in Debibi. The major challenge faced by the pupils thus about 70% is the short study time, followed by inadequate computers in the computer laboratory (68%), lack of computer, lack of spacious ICT laboratory were other challenges identified by at least 50% of the pupils thus about 65% and 56% respectively. The least challenge identified by the pupils is the fear to touch computer representing about 27%.

This study reported among the overall challenges affecting computer studies in the municipality. The major challenge faced by the pupils is the short study time which was identified by 70% of the respondent. This affirms the numerous studies that also identified limited time for computer class as a challenge (Beggs, 2000;

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Becta, 2004; Al-Alwani, 2005; Sicilia, 2005). The percentage however is higher than the number of respondents in the study conducted by Peprah (2016) in which about 16.23% identified limited time as a challenge. The next major challenge facing the study of computer is inadequate computers in the computer laboratory. About 68% of the pupils identified it a challenge this is similar to the report by Peprah (2016) in which about 48% of the pupils mentioned the same challenge. Again this result was similar to the report from Toprakci (2006) whose study found that low numbers of computers as a challenge in school. Again the study affirmed the study by Albirini (2006) in which the respondents revealed that insufficient computer resources were one of the greatest impediments to technology integration in the classroom.

Lack of computer and lack of spacious ICT laboratory were third and fourth major challenge facing the pupils in the township as they were identified by about 65% and 56% respectively. This affirms the complains of Mungai (2011) who indicated the Lack of computers in Kenyan school despite the numerous efforts government and other agencies. Also in the study by Sicilia (2005) cited by Ghavifekr et al. (2006) the respondents also mentioned difficult access to computer as a challenge. This again was similar to the outcome of the study by Empirica (2006) which revealed that the non-accessibility to ICT materials is the largest barrier affecting a number of schools as was reported by their teachers. With regards to lack of spacious ICT laboratory, this was also identified by Peprah (2016) as the pupils complained about the lack of space in the laboratory though the percentage of the response was lesser than that of this study, thus about 9.3% and 55.8% respectively.

Other challenges revealed by the study are obsolete/old versioned computer, which also identified by Toprakci (2006) whose study found that low numbers of

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computers, oldness or slowness of ICT systems, and scarcity of educational software in the school were barriers to the successful ICT implementation in Turkish schools. This was also mentioned by Mungai (2011) as a challenge facing Kenyan schools. Fear to touch computers, inadequate electricity supply, broken down computers, a smaller number of ICT teachers, burglary or theft of computers and lack of projector are other challenges facing the study of ICT in the municipality. This were similar to the challenges mentioned in Mungai (2011). Other challenges the pupils mentioned was lack of practical lessons which was similar to the response by 96.1% of the pupils who took part in the study by Peprah (2016).

CHAPTER FIVE

CONCLUSION, SUMMARY AND RECOMMENDATIONS

5.0 Overview

This chapter presents the summary of the research, conclusions and recommendations as well as area for further studies.

5.1 Summary

The main aim of this study was to assess the computer literacy and identify the factors affecting it in public basic schools in the Debibi Township. In pursuit of this aim the following objectives were laid, to assess the computer literacy level of public basic schools, to determine the factors affecting computer literacy level and to identify the challenges affecting computer studies.

The study revealed that about 27% of the pupils have at least a good literacy level while the remaining 73% exhibited either a fair and poor computer literacy level. Furthermore, computer literacy level by gender, the study revealed about 32% of the boys had at least good category as compared to their female counter parts in that category thus about 24%.

This study revealed that about (47(16%)) of the pupils have a personal computer there was no statistical significance between it and computer literacy level. Furthermore, about 24% received an extra training in ICT while about 48% do own an ICT textbook. The major challenge faced by the pupils as indicated by the majority is short study time, followed by inadequate computers in the computer laboratory, lack of computer and lack of spacious ICT laboratory. The least challenge identified by the pupils is the fear to touch computer.

5.2 Conclusion

The study concludes that the computer literacy in public basic schools is low as show by 73% of the pupils. The males in the schools have a considerably higher computer literacy level than their female counterparts. Also, the computer literacy level of pupils increases as they move from one class to the other. The major factors that have a statistical significance with computer literacy level in the township are internet usage and ICT textbook ownership.

Finally, the main challenges to computer are short study time, inadequate computers in the computer laboratory, lack of computer and lack of spacious ICT laboratory in the schools.

5.3 Recommendations

Based on the results from the study, the researcher proposes these recommendations for further action

- The government through the District Assembly and the District Education Office as well as other agencies should provide computer laboratory for the remaining schools in the township

- The government through the District Assembly should provide computers to schools in Debibi.

- Each school have at least two ICT teachers of which one should be a National Service personnel to reduce cost.

- Finally, pupils should be encouraged to learn and practice ICT outside the classroom.

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APPENDIX A

QUESTIONNAIRES

	SECTION 1 (DEMOGRAPHICS CHARACTERISTICS)		
No.	**Questions**	**Response Option**	**Resp.**
1	Name of your school		
2	Which form are you	[1] Form 1 [2]Form 2 [3] Form 3	[____]
3	How old are you?		
4	What is your gender	[1] Boy [2] Girl	[____]
5	In the last two years, did you seek a transfer from a different school to this school	[1] Yes [2] No If No skip question 6	[____]
5b	Name of former school		
6	Type of establishment	[1] Mission Established [2]Government establish	[____]
	SECTION II (COMPUTER LITERACY ASSESSMENT)		
1.	Do you know about computers?	[1] yes [2] no	[__]
2.	What is a computer?		
3	How many main components does a computer have?	[1] one (1) component [2] two (2) components [3] three (3) components	[__]
4	Give the names of the number of components you indicated above		

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5.	Identify the software component(s) of a computer	[1] mouse [___] [2] Document [___] [3] Microsoft Office [___] [4] Humans [___]
6.	Identify the hardware component(s) of a computer	[1] mouse [___] [2] Document [___] [3] Microsoft Office [___] [4] Humans [___]
7.	What is the first thing you would do when you want to use a computer	
8	Name any other two (2) operating systems do you know?	_____ _____ __
9	Which of the following are the main parts of a desktop computer?	Tick as many as applies [1] Monitor [___] [2] Keyboard [___] [3] Mouse [___] [4] System Unit [___] [5] Printer [___] [6] Scanner [___]
10	Which part of the **computer** is known as its **"BRAIN"**?	
11	Devices of a computer can be grouped into _____ group(s)	[1] one (1) group [2] two (2) groups [3] three (3) groups	[___]
12	Name the groups of devices you selected above?	

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	SECTION III (FACTORS AFFECTING COMPUTER LITERACY)		
1	How long have you been studying and using computers?	_____ years	
2.	Do you have a personal computer at home?	[1] Yes [2] No	[____]
3.	Do you receive any type of computer training outside the school training?	[1] Yes [2] No	[____]
4.	How many days do you use the computer in a week?	_____ days	
5	Averagely how many hours do you use a computer in a day	_____ hours	
6.	What types of computer do you use?	[1] Desktop [__] [2] Laptop [__] [3] Tablet [__] [4] Ipad [__] [5] Mobile phones [____]	
7.	Do you have the ICT textbook for your form	[1] Yes [2] No	[____]
8.	Can you use the internet?	[1] Yes [2] No If **Yes go to section IV**	[____]
8a.	If No why?	_____ _____ ____	
	SECTION IV (CHALLENGES OF COMPUTER STUDIES)		

1	Do you face challenges when studying computer in your school?	[1] Yes [2] No [3] Don't Know If No and Don't know Please end here	[____]
2	Which of these challenges do face during computer studies in your school?		

Tick as many as applied

[1] inadequate computers in the ICT laboratory [____]   [2] Broken down computers [____]

[3] Lack of spacious ICT laboratory [____]   [4] Less number of ICT teachers [____]

[5] Obsolete/Old versioned Computer [____]   [6] Lack of internet or slow connectivity [____]

[7] Fear to touch computers [____]   [8] Burglary/ Theft of computers [____]

[9] Lack of computers [____]   [10] Inadequate electricity supply [____]

[11] Lack of projector [____]   [12] Short study time [____]

[13] Others (please specify)

_____

_____

_____

APPENDIX 'B'
PARENTAL CONSENT FORM
UNIVERSITY OF EDUCATION, WINNEBA

DEPARTMENT OF EDUCATIONAL FOUNDATIONS

UNIVERSITY POST OFFICE, WINNEBA

Dear Parent/legal guardian,

PARENTAL CONSENT

My name is **Winnifred Kpodo** and I am a Post Graduate Diploma in Education (PGDE) student at the University of Education, Winneba. I am conducting a research study on "assessing the computer Literacy and Factors Affecting it in the Public Basic Schools in Debibi Township in the Tain District..".

The purpose of this form is to provide you with information that will help you decide if you will give consent for your child to participate in this research. The following is a short summary of this study to help you decide whether you want your child to be a part of this study.
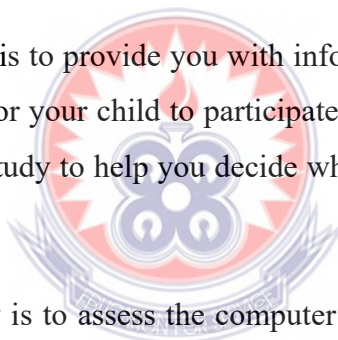
The purpose of this study is to assess the computer literacy of the pupils. Your child will be asked to complete a survey and possibly a follow-up interview. We expect that your child will be in this research study for up to an hour during break time.

If you agree to participate, your child will be one of the one hundred participants in the study from three schools in the Tain District. Moreover, your child will be expected to respond to a questionnaire that will be provide by me.

The main risk may be the time the child spends for participating in the study might be considered inconvenience. To minimize this inconvenience of time, the following measures will be taken: The child can skip any questions that he or she feels uncomfortable answering while taking the survey or during the interview and the survey will be scheduled at a time that is convenient to the child.

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Your child's responses will be anonymous and confidential. This implies that participants will be assigned pseudonyms for identification during the study and therefore there won't be a collection of personal information such as name, student ID or email address. Moreover, information will only be accessed by the researcher who is doing the study. Additionally, the results of this study may be used in reports, presentations, or publications but your child's name will not be used.

Your child's participation in this study is voluntary. Your child may decline participation at any time. You may also withdraw your child from the study at any time; there will be no penalty. Please note that although you will not receive any payment or compensation for participating in this study, the possible benefit of your child's participation is the knowledge to be gained from this study and information provided by your child for the study will contribute to educational research.

If you have questions about the study, please call me at 0547621903 or e-mail me on winnifredgrace15@gnail.com. If you have any questions about your child's rights as a participant in this research or if you feel your child has been placed at risk, you can contact the UEW Educational Foundations department at edufound@uew.edu.gh. Thank you for your cooperation.
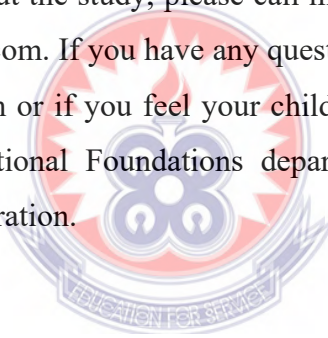
Yours Sincerely,

_____

Winnifred Kpodo

By signing below, you are giving consent for your child to participate in the above study.

YOUR CHILD'S NAME: _____

PARENT'S NAME: _____

PARENT'S SIGNATURE: _____

DATE: _____