

KWAME NKURUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

**ACCESS AND USE OF E-BOOKS AMONG STUDENTS IN SENIOR HIGH
SCHOOLS: A CASE STUDY OF SCHOOLS IN KUMASI METROPOLIS**

By

JOYCE BOACHIE, BED (HOME ECONOMICS)

**A Thesis Submitted to the Department Of Publishing Studies, Kwame Nkrumah
University of Science and Technology in Partial Fulfillment of the Requirements
for the Degree of**

Master of Art

Faculty of Art, College of Art and Built Environment

NOVEMBER 2016

DEDICATION

This thesis is dedicated to my lovely Mother; Mary Boachie

ACKNOWLEDGEMENT

To God be the glory forever for the guidance, protection and travelling mercies granted me throughout the research period.

My sincere gratitude goes to Mrs. Lucy Ry-Kottoh (Former Supervisor, Department of publishing Studies, KNUST who assisted me in selecting this topic for the project work). Her supervisory work and ever readiness to help students with research problems brought this work to a successful completion.

I own a debt of gratitude to Mr. Eric Anane Antwi who took over from Madam Lucy as the final supervisor who steered me to complete my work. I also thank all the lecturers at the Department of Publishing Studies especially, Dr. Smith Esseh and Prof. Akwasi Opoku Amankwa for taking me through Research Methodology which actually groomed me for this research; not forgetting the suggestions and advice given by Dr. Kwadwo Antwi Owusu a lecturer at DTU University, Denmark.

I am also most grateful to Mr. Pawson Kuadzi, a tutor at Kumasi Academy for his tireless efforts, time, support and co-operation during the construction and printing of my work.

Finally, gratitude to Mr Frank Acheampong and Mr Robert Berker Pickson all at KNUST who kindly assisted me in the data collection exercise and analysis.

ABSTRACT

Electronic books or e-books have been in existence for a considerable number of years. E-books are now common and very popular with people who wish to read one or many books. Unearthing and the thus understanding of challenges hindering students' access to and use of e-book is important for effective planning and implementation of policies for the successful integration of e-books in the education curriculum. The study seeks to explore access to and the use of e-books among Senior High School students in the Kumasi Metropolis and the associated challenges and problems they do encounter in this quest. A survey study comprising an admixture of quantitative and qualitative methodologies was designed to elicit participants (students) response on the use of e-books. A total sample of 283 students were selected from five senior high schools in the Kumasi Metropolis to constitute the sample size for the study. Structured questionnaires were employed to elicit information relevant to the objectives of the study. Frequencies and percentages of the variables were computed and described to ascertain the responses of the participants. The study discovered that majority of the high school students surveyed, had varying knowledge of e-books but its usage and thus accessibility was the exclusive privilege of a relatively few due to a litany of factors the prime among which is lack of access. It was found out that students used e-books for the purposes of enhancing personal development, self-inspiration, education, information, as well as for academic development. Mitigating against the effective use of e-books were factors like lack of time, prohibition to use certain devices by school authorities, non-affordability of the reading device and preference for printed books as the prime reasons for not patronizing e-books. The study then concludes that Senior High School students in the Kumasi Metropolis read e-books albeit limited to non-academic related purposes like entertainment and general information seeking via the mobile phone which is the primary medium of access. The study therefore recommends to the Ghana Education Service to institute policies to encourage and improve access and use of e-books among Senior High School students by unleashing its untapped potentials for enhanced academic work by properly integrating it into the educational curriculum.

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LIST OF ABBREVIATIONS AND ACRONYMS

Abbreviation	Meaning
App	Software applications used on mobile devices.
ASCII	The American Standard Code for Information Interchange
AZW	Amazon Kindle E-book File
CRDD	Curriculum Research Development Division
DRM	Digital Rights Management
GES	Ghana Education Service
HTML	Hypertext Markup Language
IDPF	International Digital Publishing Forum
IP Address	Internet Protocol (IP) address
MOE	Ministry of Education, they formulate education policy
PDF	Portable Document Format
SHS	Senior High School

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

E-books or electronic texts have been in existence for many years. Eberhard and Tarpenning (2001), assert that an electronic book is a text and image-based publication in digital form produced on, published by, and readable on computers or other digital devices. The Information and Communication Technology (ICT) penetration in Ghana has slowly but steadily made considerable progress (Hanszell, 2013). E-books are now common and very popular with people who wish to read one or many books, in any location at any time. Many titles are free to acquire and are usually downloaded from websites and online libraries. As it has been already mentioned above, students could freely download novels, fiction and nonfiction as well as poetry, quotations, school textbooks, study guides, journals, magazines, picture books, audio books and even some newspapers can be purchased or subscribed to on many other sites from companies all over the world, in many different languages (Jackson, 2010).

Formally, e-books were in the format of text only, which are hypertext make up language (HTML), portable document format (PDF) and also with some ePublishing (EPUB) open file formats available. EPUB was used by many e-book readers and the iPad. These texts could be opened in applications as Notebook or WordPad (i.e. If text only) and or in MS Word and internet browsers (i.e. If HTML). PDF files could be opened in programs such as Adobe acrobat Reader and Foxit Reader. With the advent of small, portable devices, students quickly recognised that they could read their preferred or favourite texts not only on their computers but alternatively on hand held

portable devices such as personal digital assistants (PDAs) from Palm and Hewlett Packard (HP) as well as from other manufacturers.

The first e-books were text based. With the memory capacity and processing speeds increasing and purchase costs decreasing, the devices became more specialised with the advent of dedicated eReaders, such as the Kindle and Sony eReaders. Apps on iPods, iPhones and iPads emerged, eventually competing with other Smart Phones and digital tablet operating systems and models (e.g. Windows and Android) which are available in the Ghanaian market. Choices at the moment (2015) are quite diverse as models vary in style, size, weight, colour, cost, functionality, features and multimedia options. Ease of use is an important consideration as well as the number of inbuilt features, internal and upgradeable memory capacity, screen quality, font style, size and colour options, flexibility downloading and displaying different publishing formats, online and offline uploading of e-books and portability. Battery charging and battery life need to be explored as does design and ergonomics.

E-books can be procured by purchasing it online and saving it to a computer and transferring to an eReader device, Smart Phone or PDA. Some eReaders and devices are either Wi-Fi or 3G capable or both. This means that they can download e-books from sites without the use of a computer based system. Smartphones and iPods/iPads can also be used to download e-books from sites dedicated to books as well as Apps (application) that run as e-books.

The same can be done when acquiring free e-books. They can be downloaded from a large number of sites and transferred to a device. Acquiring e-books from iPods, iPads and other devices with wireless fidelity or wireless internet (Wi-Fi) or third generation of mobile telephones technology (3G) connectivity, means that students can access

books anywhere. Having an iTunes account at home or at school may be necessary. Devices that can download using Wi-Fi or 3G are very attractive to some users, particularly when travelling. Although e-books have been identified as a current trend in education in Ghana, little empirical research exists on their access and use as learning tool (Becker, 2010). This study seeks to explore Senior High School students' access to, and use of e-books as an emerging phenomenon in the educational landscape of Ghana.

A thorough understanding of e-books availability to Senior High school (SHS) students, access to and uses of e-book have important implications for the design of effective pedagogical innovative teaching methods. In addition, good understanding of students' access to and use of e-book is important for effective planning and implementation of successful policies for integration of e-books in secondary education.

1.2 Problem Statement

The introduction of digital technology, adoption of digital content and availability of electronic reading devices are changing the face of conventional publishing all together in the Ghana. In developed countries, while there is a great deal of knowledge about the availability of e-books and how they are being used by the students in schools, there is limited information about access and use of e-books among students in schools in Ghana (Sarfo and Ansong-Gyimah, 2010). This makes it difficult to formulate policies towards effective integration of e-books into the education mainstream in this technological era.

Although e-books have been identified as a current trend in education in Ghana little empirical research exists on their access and use as learning tools (Becker, 2010).

However, a thorough understanding of SHS students' access to and uses of e-book has important implications for the design of effective innovative pedagogical teaching skills. In addition, good understanding of students' access to and use of e-book is important for effective planning and implementation of successful policies for integration of e-books into secondary education. Within this context the study is aimed at exploring the access to and the use of e-books among Senior High School students in Kumasi in the Ashanti Region of Ghana.

1.3 Objectives of the Study

The study seeks to:

1. Find out the availability of e-books among Senior High School students.
2. Describe the mode of accessing e-books and frequency of use by SHS students.
3. Identify and discuss the benefits and challenges in accessing and using e-books.

1.4 Research Questions

This study addresses the following research questions:

1. In what form are e-books available to Senior High School students in the Kumasi Metropolis?
2. How do students frequently access and use e-books in schools?
3. What benefits and challenges do students face in accessing and using e-books in Senior high schools in Kumasi?

1.5 Delimitation

- The research covers only some public Senior High Schools in the Kumasi Metropolis in the Ashanti Region of Ghana
- The study is limited to research conducted in the area of e-books from the year 2000 to present as sources of information
- Moreover, the content of the study was limited to the investigation of access and the use of e-books among students in selected Senior High Schools.

1.6 Significance of the Study:

Digital technology and adoption of digital content and electronic reading devices is increasing rapidly in Ghana; but little empirical research exists on their access and use as a learning tool (Becker, 2010). The significance of this study are enumerated below:

- The study will contribute to the pool of comprehensive literature on the access and use of e-books among Senior High School students.
- The study will enhance the knowledge input of scholars, Ghana Education Service (GES), general public and other stakeholders as they make the plans for the implementation of recommendations for e-book integration into the secondary educational curriculum.
- It will form the basis for further study into the use of e-books in Ghana.

1.7 Definitions of Key Terminologies

The following are some terms that have been used in the entire study. It will be of help if these terms are clearly defined prior to the body of the study.

- i. **3G - 3G** is a mobile wireless Internet service used by different devices for connectivity that provides an information transfer rate of at least 200 kbit per second.
- ii. **Adobe Content Server**-Adobe Content Server is a software development to add digital rights management to e-books distributed in PDF or EPUB format through Adobe Digital Editions.
- iii. **Adobe Digital Editions** - Adobe Digital Editions is a software application that can be used to manage a library of e-books and devices, particularly e-book readers. It can also be used to manage access through Digital Rights Management (DRM) for protecting e-books.
- iv. **Disintermediation** - Disintermediation reduces intermediaries between producers and consumers (for example, between authors and readers).
- v. **E-journal** - An e-journal (also known as electronic journal and electronic serial) is scholarly journal or magazine accessible via the Web (or other form of electronic transmission). Some e-journals are online-only journals; others are online versions of printed journals (in some cases, these provide the online equivalent of a printed journal with additional online-only material such as multimedia or extra data).
- vi. **Electronic paper**- Electronic paper is a term for describing the display technology for e-book readers that mimics ink on paper, sometimes inaccurately described using the proprietary term e-ink.
- vii. **EPUB**- EPUB is a popular open file format for e-books, used by many e-book readers and the iPad.
- viii. **E-reader**- An e-reader is another term for e-book reader, a single-function device used for e-books.

- ix. **e-Textbook**- An e-textbook is a type of e-book (typically assigned as required reading) that is provided in digital format for some or the entire key educational or instructional content related to an academic course.
- x. **HTML5**- HTML5 is the fifth revision of the standard HTML markup language, still under development as of September 2012. Core aims of HTML5 are to improve its support for multimedia while keeping it easily readable by humans and consistently understood by and adaptable to a broad range of computers and devices.
- xi. **IOS**- IOS is Apple's mobile operating system used on the iPhone, iPad, and iPod touch mobile devices by Apple.
- xii. **iTunes**- iTunes is Apple's desktop software for managing IOS devices. iTunes software is also the gateway to the iTunes Store, where e-books can be purchased for use on IOS devices.
- xiii. **Kindle**- Kindle is the brand name used for Amazon's e-book readers and used in their applications.
- xiv. **Kindle Format 8**- Kindle Format 8 is a format for Amazon's Kindle, which will replace the mobile format.
- xv. **The Mobi** – Mobi movie is a legacy format created for the Mobipocket, which was bought by Amazon. Files in movie format are compatible on Kindle devices and files in non-compatible formats are often converted to movie format.
- xvi. **Whispersync**- Whispersync is an Amazon service that enables Kindle e-book customers to synchronise reading progress, bookmarks and other information across Kindle hardware devices and other mobile devices.

1.8 Organization of the Study

Chapter two reviews the empirical and theoretical framework of the thesis while Chapter three explores at length the methodology used and its appropriateness for the subject of the study. Chapter four gives a detail account of the analysis and interpretation of the data collected. Summary, Conclusion and Recommendation are in Chapter Five.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview

This chapter reviews the literature related to the various variables in the topic and it is divided into two strands. The first part of the review chronologically deals with the concept of e-books, tackling the definition of e-books, history of e-books, the availability of e-books, how or ways e-books are accessed, devices use to access and read e-books, the mode of accessing e-books, the benefits of e-books, the challenges students face in accessing and using e-books among Senior High School students.

The second part of the review is to review the literature related to e-books as a means of facilitating learning among Senior High School students. The chapter also deals with a number of theoretical and empirical studies that contribute to the study of access and use of e-books among Senior High School students. Since the literature on e-books is vast, selected literature reviewed is the most pertinent for the purposes of the study. Tomlinson (2003, p. 1) contends that, access and use of an e-book are both a field of study and a practical undertaking.

2.2 Definitions of E-Book.

E-book, or an *electronic book* it's simply define as a book that is in a digital format. E-books are not Web content. To differentiate e-books from Web content, e-book is defined as “any full-text electronic resource designed to be read on a screen and web browsers” (Gibson & Ruotolo, 2003, p. 58).

According to Cox and Mohammed, as quoted by Lee (2002): e-book is a term used to describe a text analogous to a book that is in digital form to be displayed on a computer. Lee (2002) also included in the definitions of an e-book from the Hi-Tech

Dictionary and the New Concise Oxford English Dictionary, respectively as: “a book that has been converted to digital form and could be read on a computer, usually through network services or CD-ROM”. E-books could expand over print media by adding several specific features such as hypertext links, search and cross-reference functions and multimedia. Also an electronic version of a printed book can be read on personal computer or handheld device designed specifically for this purpose.

According to Anuradha and Usha (2006), an e-book is an electronic (or digital) version of a book. The Wikipedia entry postulates that, though e-texts are available as digitally encoded books and the term is often used synonymously with the term e-book, that usage is deprecated. The term e-text is used for the more limited case of data in American Standard Code for Information Interchange (ASCII) text format, while the more general e-book can be in a file format. The Oxford Dictionary of English defines the e-book as "an electronic version of a printed book," but e-books can exist without any printed equivalent.

E-books are usually read on dedicated hardware devices known as e-Readers or e-book devices. Personal computers and mobile phones can also be used to read e-books (Rao, 2001).

Garrod (2003) states: “a digital library is defined as an electronic extension of functions users typically perform and the resources they access in a traditional library then e-books are a natural addition to digital collections”.

An electronic book (also e-book, E-book, EBook, eBook, digital book) is a text and image-based publication in digital form produced and published by, and readable on computers or other digital devices. Sometimes it is equivalent to a conventional

printed book; e-books occasionally are solo digital. An e-book is simply an electronic text that serves the same purpose as a conventional printed book and may also share some of the look and feel of a printed book (Anuradha and Usha, 2006).

E-books may also be enhanced with other electronic features such as embedded hyperlinks, bookmarks, annotation, text searching and the linking of complex multimedia objects and may also assist greatly people with disabilities (Ingraham and Bradburn, 2003).

E-books are now very popular with people who wish to read one or many books, in any location at any time and in varied lighting conditions. Many e-books are free to acquire and are usually downloaded from websites and online libraries. Books can be purchased from online stores as Amazon and other commercial agencies, book suppliers and online vendors. E-books which comes in different languages can be purchased or subscribed to on many web sites from companies all over the world.

In a case study conducted in India; Anuradha and Usha, (2006) finds out that, e-books can be considered as software objects as well as physical devices. Using computer based software; users can also write, create and design their own content, with text or with photos, drawings, graphic images and illustrations. Understood as a software object, an e-book is simply an electronic text that serves the same purpose as a conventional printed book and may also share some of the look and feel of a printed book.

The term is used ambiguously to refer to either an individual work in a digital format, or a hardware device used to read books in digital format. Some users condemn the second meaning in favour of the more precise “e-book device”. Specialised (and, at times, proprietary). Also, an e-book is commonly bundled by a publisher for

distribution (as an e-book or an internet newspaper), whereas e-text is often distributed in American Standard Code for Information Interchange (ASCII) or in plain text format.

An e-book reader is described in the literature as "a device specialised for displaying electronic reading material or is software designed to display such material" (Looney & Sheehan, 2001; p. 40), and elsewhere as "a handheld device that is specialised for displaying electronic versions of books" (Davies, Fitzsimmons & MacLeod, 2001; p. 1). Others use the term to describe the files containing the text that offers books online. Wikipedia (2006) attempts to standardise use of the word with: "An e-book is an electronic (or digital) version of a book. The term is used ambiguously to refer to either an individual work in a digital format, or a hardware device used to read books in digital format. Some users deprecate the second meaning in favour of the more precise "e-book devices."

2.3 History of E-Books

E-books or electronic texts availability have increased significantly since the early 1970's but earlier modes of e-books have existed in varying forms since the Second World War. In the past students and educators could freely download novels, fiction and nonfiction as well as poetry, quotations and study guides from a number of pioneering web sites. The format was initially text, HTML or later PDF with some early e-Publishing formats available. These texts could be opened in a Notebook or WordPad (i.e. If text only) and in MS Word and browsers (i.e. If HTML). PDF files could be opened in programmes such as Adobe Reader, Foxit Reader and many others. Using text to speech applications or screen reading programs, they could be read back to users and voice aloud.

E-book databases are making its way into libraries through popular providers such as NetLibrary, Books 24x7, Questia and Ebrary (Mullin, 2002; Connaway, 2003). Libraries, on the other hand had begun to turn to providing e-book services simply because of decreasing budgets, limited shelving space, increasing cost of new buildings and resources. Moreover, the rising cost of repair or replacement of books, increasing demand from users of electronic resources, rising cost of inter-library loan service and the demand to support distance or distributed learning needs makes e-books a viably cheap option to traditional libraries.

With the advent of small, portable devices, people quickly recognised that they could read their preferred or favourite texts not only on their computers but alternatively on hand held portable devices such as Personal Digital Assistant(PDAs) produced by Palm and HP firms among other manufacturers.

The first e-Books were text based. With the memory capacity and processing speeds increasing and purchase costs decreasing, the devices became more specialised with the advent of dedicated e-Readers, such as the Kindle and Sony eReaders. Software applications on iPods, iPhones and iPads emerged, eventually competing with other Smart Phones and digital tablet operating systems and models (e.g. Windows and Android). The choice at the moment (in 2015) is quite diverse and models vary in style, size, weight, colour, cost, functionality, features and multimedia options. Ease of use is an important consideration as well as the number of inbuilt features, internal and upgradeable memory capacity, screen quality, font style, size and colour options, flexibility downloading and displaying different publishing formats, online and offline uploading of e-books and portability. Battery charging and battery life need to be explored as does design and ergonomics.

2.4 Digital format of e-books

A simple definition of an e-book is an electronic book. A book that is in a digital format, that's read on an e-book reader or application. Formats have largely evolved alongside the development of e-book readers. At the same time, application developers and publishers have employed different formats for various platforms.

Among the earliest general e-books were those in *Project Gutenberg*, in 1971. One early e-book implementation was the desktop prototype for a proposed notebook computer, the *Dynabook*, in the 1970s at Palo Alto Research Center Incorporated (PARC): a general-purpose portable personal computer capable of displaying books for reading.

At a basic level, e-books can be released in plain text format, as was originally the case in 1971 at the start of Project Gutenberg. Project Gutenberg (2005), claims to be the oldest producer of free electronic books (e-books or e-texts) on the Internet. Most of its collection of more than 13,000 e-Books produced by hundreds of volunteers are long time, public domain literary works. All may be freely downloaded, read, and redistributed for non-commercial use. Files are saved in whatever formats the volunteers produce. For example, Jane Austen's *Emma* is available in plain text (txt) and portable document format (pdf) as well as other formats. Project Gutenberg proposition that digital rights protection produces "closed formats" will almost certainly be unreadable in just a few decades, when the companies now promoting them disappear, or lose interest, or decide to stop supporting them because they want to sell an upgraded version of the product.

As requirements change over time, however, new devices and increasing demands from publisher's to protect e-books digitally have brought about further development

of new formats. From rudimentary ASCII to more advanced forms of HTML, PDF and EPUB, the increasing technical sophistication of e-books have produced an expanding range of formats.

2.5 Availability of e-books

E-books have been readily available since the early 1980's and libraries have been growing steadily in providing access to e-books, either these available for viewing from an e-library service, or those that can be downloaded to a computer or e-reader (Library Journal, 2010a; 2010b; 2010c). Books whose copyright has moved into the public domain were some of the first books to be digitized into e-books and many e-book collections reflect this access to "*the classics.*"

A recent study by Chu (2003) who surveyed 27 students in Library and Science Schools(LSS) in the United States in 2002 reported low use of e-books (9 out of 27). However, those who used e-books highlighted on the positive features such as their availability around the clock, search ability features and timely access to new titles. E-books have been a virtual material have universal access. Users can store, carry and access a large number of books on a single computer, memory card, USB and/or external hard drive. E-books enable students of all abilities to copy and paste pieces of text and images into their own documents. For many students, this can save time, lessen frustration, increase confidence in their creation of and dealings with text and improve efficiency. The amount and accuracy of information have also increased.

2.6 Access and use of e-books

Most e-books are accessed through a web-based service on a computer with the use of e-readers seen as a growth area. Over 50% of the e-book collections are fiction titles with reference materials and nonfiction forming the balance of the collections

(Library Journal, 2010). Online e-library services are also growing giving teacher-librarians and students access to hundreds of thousands of books. Sites like the World E-Book Library and the School E-Book Library make titles available for mobile devices like iPhones and e-readers with annual fees and easy access. Online collections such as the e-Book Library, Tumble Books, International Children's Digital Library (ICDL), and the Digital Gallery of World Picture Books offer many titles that students and teacher-librarians can use for school assignments, inquiry projects and reading enjoyment. The ICDL is also available through a new iPhone App that makes the collection available on an iPhone at anywhere and at any time.

2.7 Technologies for reading e-books.

1. Online or internet-based of accessing and for using e-books:
2. Offline or specific e-book reader based.

In the online version the user can read the text through an internet browser and this opens up possibilities of linking to other resources, cross-text searching, utilisation of dictionaries and so on. There are several organisations which each offer access to tens of thousands of e-books from a range of different publishers. These examples include Netlibrary, Ebrary and Questia. In addition, many publishers (e.g. Springer and Gale) are now also providing e-access to their published books.

In the offline version, users will read e-books through special e-book reader software that can be downloaded from the internet. Much of this software is format-specific, such as:

Adobe reader in PDF format. Hiebook reader in a HI format (see www.hiebook.com); Microsoft reader in LIT format (Sulli, 2004; Gibbons, 2005).

There are many e-book online "stores", such as an eBook mall (see www.ebookmall.com), which offer downloadable e-books in a variety of formats.

You will find them in various formats and until the industry has a standard accessible in all devices these various formats will continue to exist. The PDF format is a popular format for e-books. All platforms are able to gain access and read PDF formatting. So regardless of you having a PC or Mac, you are in business! PDF requires the Acrobat Reader but this software comes already installed on many new computers; and if not included, it can be freely downloaded on the web. There are still many students who prefer printing out the pages of an e-book to read. The reasons being that, students find e-textbooks clumsy and don't use their interactive features. However, PDF files have always been good for printing purposes. Visit the Internal Revenue Service Ghana (IRSG) online and you will see every tax form they have available is in PDF to print, fill out and send.

Other popular formats include: Hyper Text Markup Language (HTML) which can be read on your computer screen, laptop or converted to read on the previously manufactured Nuvomedia Rocket eBook reader Microsoft LIT (requires the free Microsoft Reader installed on your computer, laptop or Pocket PC 2002 device). Hiebook - KML is one of the newest eBook reader available. This unit is manufactured in Korea and it is limitedly distributed in the US and Canada.

Well written and published e-books offer personalised access to text. It certainly benefits all students, but more particularly provides added value to readers with reading and learning disabilities. It ensures that, students are catered to as well as promoting leading practice in the schools, colleges and centres where they attend. This change of culture is paramount in fostering the usage of e-books in the educational system. Mainstreaming the technology has numerous benefits, for everyone, including the educators and trainers. Learners are accommodated more

effectively; the organisation complies more fully with disability legislation and can be an example for other educational institutions.

Digital materials delivered through a learning platform or eLearning Environment can be far more accessible to blind and vision impaired students than hard copy, being more unmanageable and inaccessible. This is because the capacity to have actor's voices read out aloud the content or text-to-speech facilities will be important for students who are blind or vision impaired. DAISY reading software and devices may cater to their needs more adequately. A range of inclusive technologies including screen readers, text-to-speech applications are compatible with technologies including DAISY and JAWS software. Text in e-book formats can be reversed into alternate formats. The text can be altered to MS Word, large print format, MP3, Braille or DAISY.

Research is very important to meet students' individual needs. Issues of flexibility in altering and changing the text are vitally important for students with dyslexia. The size and functionality, navigation aspects, location and use of buttons are concerns of students with physical disabilities. iPads and digital tablets, as they are backlit and have greater global features and functionality and thousands of Apps might be more attractive to students with intellectual disabilities as they can be used as communication devices and for games as well as for other leisure activities. Devices that play MP3 and other music formats will be enjoyed by different audiences and users.

Studies conducted proves there is a correlation between a student's discipline and the rate of use of e-books. Dillon (2001) reported that students from the University of Texas at Austin mostly refer to e-books in the fields of economics, business and

computer science followed by medicine and health. McCarty (2001) revealed that students at the University of Colorado Boulder used e-books for research and found it convenient, when searching for information at the library. Healy (2002) interviewed 3200 faculty members, undergraduates as well as graduate students and observed that e-books were used for research, teaching and learning. A substantial number of users, however, still indicated preference for printed books and journals. Another study observed that publishing professionals preferred e-versions of reference materials, such as manuals, encyclopedias, maps and travel guides (Seybold, 2000).

A study in the United Kingdom also found similar findings that consumers preferred e-books for reference purposes (Guthrie, 2002). Long (2003) also found that readers used e-books as reference sources or to look for a particular piece of information rather than reading from cover to cover.

2.7 How e-books can be acquired

E-books can be downloaded online and saved to a computer and later transferred to an e-Reader device, Smartphone or PDA achieved. Some e-Readers and devices are either Wi-Fi or 3G capable or both. This means that they download e-books from sites without the use of a computer based system. Smartphone's and iPods/iPads can also be used to download e-books from sites dedicated to books as well as purchasing Apps that run as e-books.

The same can be said about acquiring free e-books. They can be downloaded from a large number of sites and transferred to a device. Acquiring e-books for iPods, iPads and other devices with WI-Fi or 3G connectivity means that students can access books anywhere. Having an iTunes account at home or at school may be necessary.

Devices that can download using WI-Fi or 3G are very attractive to some users, especially when travelling.

For profit companies (Amazon, Google) and nonprofits (libraries, consortia, and trusts) gather many e-book titles together. For-profit companies charge the user to access or download these books. Non-profit groups often do not charge their users; they obtain funding from foundations; colleges and universities; and federal, state and local governments. These organizations, whether profit or non-profit, are called aggregators, because they gather together or aggregate large numbers of e-books into collections.

Though e-books are not new, their uptake has been slow, especially when compared to other e-formats such as e-journals and e-newspapers. One reason for this is because e-books have been available in many formats and these formats are often incompatible and non-interoperable. Snowhill (2001), for instance, confirms this in a report on an evaluation of e-books undertaken by a task force from the California Digital Library in 2000.

2.8 How student access E-books

Students purchase viewing rights, not hard copy (paper) or soft copy (files on a CD). At the time of purchasing the viewing rights, students are presented with two access choices: Download and online reading.

Downloading (*sub topic under 2.9*)

The e-book files can be downloaded to a computer's hard drive where they would reside permanently. On that computer the software (free, named the ebrary Reader) to read the files and monitor the number of accesses to the files is installed. Each time

the e-book is accessed a student must use a password to log into the e-publisher's site and register themselves as readers. There is no need to download the e-book pages again, but the connection with the e-publisher's site must exist while the student is reading the pages - the pages are not accessible unless the connection with the e-publisher site is active. The initial purchase buys a fixed number of page views, in this case twice the number of book pages, and additional page views can be purchased subsequently. Page view credits have no expiration date. The purchase buys the right to print as many pages as there are book pages, enough for one copy of each page of the e-book; however, printing may be very slow. A major advantage of this option is that there is only one download needed of the e-book files. Because the page view credits have no expiration date any unused credits for reading or printing can be used later.

Online reading (*sub topic under 2.9*)

Students read the e-book pages from files on the e-publisher's server. A subscription allows the student to read a fixed number of pages, and the cumulative count is shown on the screen during access. Once the count reaches the maximum allowed the subscription could be supplemented as needed. Another counter tracks the number of pages printed and printing is disabled after a fixed total number of pages have been printed. As in the case of the downloading option, the free plugin software, ebrary Reader, must be installed on all computers that will be used.

The advantage of the online reading option is that access can be from any machine any where – Senior High School, home, work or roaming. On the other hand, each time a page is accessed it must be transferred to temporary storage on the reader's current computer and this can be a time consuming and costly exercise for the reader.

Any page reading credits that the student has not used by the close of the course can be used at a later time.

Towle, Dearnley, and McKnight (2007) suggested different ways for accessing E-books and they as follows:

Remote Reading (*sub topic under 2.9*): Reading books on an aggregator's (both for profit and nonprofit organisation) web server using their e-book reader software or Web browser software (Firefox, Safari, Internet Explorer, Google Chrome, etc.)

Permanent Downloads (*sub topic under 2.9*): Allowing the transfer of a copy of an entire book to your own device (e-book reader (e-Reader), iPad, or personal computer).

Temporary Downloads (*sub topic under 2.9*): Downloading an e-book that expires and disappears from your device after a specific time period. This might be called "downloading to borrow."

Previews (*sub topic under 2.9*): Making only selected pages of an e-book available for you to read on a page-by-page basis. These versions also live on the aggregator's server. In Google Books these views are labelled Full View, Limited Preview, Snippet View, or No Preview Available.

The New Media Consortium's annual Horizon Report (2010) discusses current and upcoming trends in educational technology. With electronic books reaching the mainstream in the consumer sector, they are becoming an increasing reality in the realm of education as well. According to Towle, Dearnley, and McKnight (2007), there were 23 million e-books downloads in 2005 alone.

Swan, (2003, pp. 13-45) believes that e-books in general constitute a valuable channel for knowledge dissemination and opportunities for development and growth among nations in the world.

Harvey, (1993) envisages that the effectiveness of the use of computers in education may be an important factor in determining which countries will succeed in the future.

Clark, (2009) showed in his studies that the integration of e-books effectively in teaching and learning can facilitate acquisition of 21ST century skills.

However, Land and Hannafin (2004) indicate that lack of pragmatic factors (e.g. Lack of access of e-book) can inhibit full utilization of e-book in teaching and learning. Access and use of e-book are assets in effective education, and hence easy access and portability which are the benefits of e-book in education can be realized if students have access to e-books and use them effectively. Since technology is expensive in developing countries, access to and use of technology in schools and institutions might be problematic as compared to developed nations.

2.9 Benefits of E-books

Research has demonstrated that e-books are beneficial for a number of reasons. Easy access and portability were two benefits prominently noted in the interviews by Goodwin, Samuelson, and Coker (2008). They found that easy access and portability were factors students reported as beneficial when using e-books. Students liked to have anytime, anywhere access to their books (bus stops, commutes, etc.) and the ability to view all texts in class without the need to carry numerous heavy books (Estelle, & Woodward, 2009).

Again when using e-books, users prefer features such as glossary lookup, bookmarking, the ability to highlight and annotate in the e-book systems (Simon,

2001). Simon's study of users at the Fordham College at Lincoln Center, Manhattan found that 84% of the respondents indicated being willing to contribute to the e-book retail cost. Gibbon (2001) reported a study carried out at the University of Rochester Libraries, New York State and found that only 29% (9 out of 31) respondents reported reading large portions of e-book titles and the rest either browsed or search for a single term across the collection. Gibbon attributed this situation to the discomfort of reading text on a computer screen for long periods of time. Gibbon's study however, revealed that when the e-book is a prescribed course reading, it tends to be used more frequently and this group of users also suggests that it saved them money, it was convenient; it was accessible online even when the library is closed.

Similar responses were also given in Snowhill's study (2001). When comparing e-book use to users' ages, Anderson (2001), who surveyed 1500 US online Internet users, found that those who frequent the Internet also rated e-book positively and they tend to be between the ages of 16 and 29. Some of the respondents indicated that e-books would be most useful if it is handier.

In a survey of 22,000 college students from England about the usage of e-books in their Higher Education classrooms and libraries, students identified additional advantages of e-books such as online access, convenience, ecofriendly, and easy storage (Nicholas, Rowlands, &Jamali, 2010). E-books provide multimedia information, full-text searching, reference linking, and flexibility in searching and browsing, selection of different types of fonts, portability, and interoperability with a variety of devices. E-book reader software allows users to highlight, annotate, underline and bookmark. Almost all reading devices provide adjustable backlighting which enables e-book users to read comfortably in poor lighting conditions, even in bed at night, without disturbing others. For users who are frequent travellers, or who

have to carry out research in remote places, e-books offer a substitute for print books and provide easier portability. For teachers and students, e-books are a very good classroom teaching tool and are a good device for those with low hand dexterity. E-books that are available online can be accessed always from a “local” desktop, and more able to be accessed remotely. For publishers, e-books offer economies in publishing costs and involve no storage, shipping or handling charges. For librarians, e-books do not go out of print, are easy to download, can be customised to suit individual needs (especially by those who may be physically handicapped), allow many people to access the same book at the same time, are free from problems of being misplaced, and do not suffer from wear and tear or theft (Rao, 2001; Snowhill, 2001; Tedd, 2004).

2.10 Limitations of e-books

Although studies as gleaned from the review of the literature has revealed numerous benefits of the adoption and usage of e-books, limitations or challenges have also been noted. The reasons for the slow acceptance of e-books vary but a constant reason given is the uncomfortability of using this medium when reading via personal computers, laptops and palm pilots (Helfer, 2000; Andersen, 2001). Additional reasons include the difficulty it entails when reading it on small screens, problems with browsers, slow loading time, difficulties in navigating (Gibbon, 2001; Chu, 2003), and preference for reading printed text (Gibbon, 2001).

Additionally, some studies have shown that students simply prefer text based books. Woody, Daniel, and Baker (2010) examined ninety-one (91) undergraduate students' interaction with e-books versus traditional text-based books. Students reported a preference for traditional text-based books for learning and reported that they were

more likely to use supplemental material provided in text-based books. This may partially be attributed to the manner in which individuals learned how to read at a young age. Personal habits also develop early in life, which can make adjusting to a new reading format and learning new technologies difficult for many people who grew up exclusively with printed texts (Kang, Want, & Lin, 2009). Problems with usability have been a recurring theme in the literature. As mentioned above discomfort with reading from a screen as opposed to a page is cited often. Sitting in front of a computer screen can be less relaxing to e-book readers than a physical book and can cause reading fatigue to occur faster (Goodwin, Samuelson, & Coker, 2008).

Others voice concerns about the availability and equitable access to e-books, as well as raise questions about how effective they really are. According to Siracusa (2009) complaints include: 1) the size and quality of the screen; 2) resistance to reading on a screen rather than holding a “real book”; 3) the e-reading device itself – too small, scared of breaking it, having to charge the batteries, etc.; and 4) the lack of e-book standards both in platform and publishing rules. Others point out issues of e-book piracy (Rivero, 2010; Spring, 2010) and conflicts with open access, propriety rights and copyright (Williams, 2011) collectively referred to as digital rights management (DRM). While the results of earlier studies into the value and benefits of e-books seem to yield inconsistent results, it is obvious more research is needed (Chau, 2008) before e-books are dismissed simply as a passing novelty.

E-books are still not very popular but they are steadily growing. For instance a 2011 survey conducted by Rainie et al found out that 72% of American adults had read a printed book in sharp comparison with 17% of adults who had read only an e-book.

The technology for creating and accessing e-books (both hardware and software) is not yet mature, lack of awareness of software/hardware available for e-books, incompatibility with hardware and software of the e-book readers; cost of hardware readers, limited availability of titles; difficulty in accessing computers or the internet; enough printed books in libraries already; a lack of awareness of e-books; and problems with printing and downloading are all factors that adversely impedes the growth of e-book usage (Snowhill, 2001; Tedd, 2004; Urs, 2004).

Although e-books services are available, little information could be unearth to explain the current status and usage of e-books service. There are reported benefits and challenges associated with the use of e-books as an alternative to printed texts. With the increasing adoption of e-books for higher education courses, there is a need to move forward and to focus on studying the access and use of e-books as learning tools. This study uses the mix approach in exploring the access and use of e-book among Senior High School students in the Kumasi Metropolis to unearth these challenges.

2.11 Educational aspects of the technology

At the time an e-book was considered for the course, the primary objective was linked to the expediency of providing students with a means of accessing text material which would not have been available in a convenient fashion in hard copy. The learning strategy for the on-site students was to use preliminary reading followed by group research and report presentation at seminars. It was not considered relevant to offer these postgraduate student exercises in memory retention of the reading material in the form of online or electronic quizzes. Online researching skills, analysis and communication were developed as their projects progressed within their groups.

Consequently, it was intended that on site students should use the Internet only for information transmission. The learning strategy for off-site students, when the need arises, will involve preliminary reading and group projects using online communication and presentation tools. Electronic delivery of the reading material was therefore a consequence of the unavailability of a hard copy text at a reasonable cost.

Many educational institutions have already tested the usability of this new technology in classrooms, with hopes of offering students a more modern and “hands-on” method for obtaining information.

“Many states, including California, are opting for more modern methods to disseminate information to students, not only save money, but also to increase sustainability efforts,” echoed IREX Technologies CEO, Kevin Hamilton.

The assumptions: students who forms an important demographic component of the digital age will respond better with using technology as opposed to print which will go a long way in eventually making e-book/readers less costly than print textbooks. If these assumptions are correct, authors and publishers should consider switching to more innovative digital methods as opposed to the print textbooks.

E-books have taken off and blossomed in the publishing world. They have proven beneficial to authors and readers, and the educational structures hope they will be just as beneficial. Pertinently we can ask what is so useful about an online book as opposed to a print book in schools?

Education has always been about receiving and processing timely information. Wireless technologies have provided a new channel for information sharing and a method to communicate real-time data wherever/whenever. E-reader devices are one

of the many resources available to the education community to better the students' experience with digesting information and the teachers' ability to provide up-to-date content. With the advent of WiFi-enabled e-readers, this content is easily delivered by the Internet.

Maryland high school teacher James Mascia, postulates that information offered online as opposed to print is a more feasible option for students to learn as students will perform better with computer-based tests. He asserts that this was proven as the average test score in a year rose almost to 10% which will invariably herald a surge in e-books and textbooks because the students will be more likely to respond to the content they see on the screen than on paper.

If students react better to the online content than print, then schools would surely lean toward the method that elicits better test scores. E-books/readers also have the advantage of being updated more frequently than print textbooks and can be customized to each different class and teacher. Moreover, a huge complaint about textbooks has been that, they contain much content that is not taught, an opportunity for a teacher to customize content according to the lesson plan which is an added advantage.

2.12. E-books as a means of facilitating learning.

The New Media Consortium's annual Horizon Report (2010) discusses current and upcoming trends in educational technology. The 2010 Horizon Report has a chapter titled Electronic Books and lists electronic books as having a time-to-adoption horizon of two to three years. According to Towle, Dearnley, and McKnight (2007), there were 23 million e-books download in 2005 alone which pinpoints to the growing trend of e-book usage among the general populace.

With electronic books reaching the mainstream in the consumer sector, they are becoming an increasing reality in the realm of education as well. A few exploratory studies have examined the use of e-books in higher education; however, the studies have primarily focused on students' perceptions of e-books and their use outside of the classroom.

Although there are a vast array of e-books and means with which to view them, there are a number of commonalities and considerations worth highlighting:

- Access - e-books potentially remove limited access issues to key texts that can be a major problem for print books as they are available 24/7
- Many institution library catalogues now offer e-book versions of some of their titles and journals and e-books open the door for a much greater range of books than the library could physically manage
- E-books can support in-class information retrieval by broadening the learning resource range
- E-books support accessibility in terms of being an alternative to print books and they have accessible aids to improve readability e.g. changing text size and contrast
- Flexible delivery – e-books can be located (via hyperlink) in many places such as course materials and the Virtual Learning Environment(VLE), offering access at appropriate points
- Teachers can produce their own e-books as learning resources
- E-books can work on desktop computers and mobile devices – note that many devices are included in the 'mobile' category e.g. laptops, mobile phones and

dedicated e-book readers such as the Kindle. For clarity devices like the Kindle are normally identified as 'dedicated e-book readers'.

- Usage can be tracked which helps catalogue managers manage expectations and resources such as which books to buy, license or remove
- Portable – many e-books can be stored on a single device and taken by the owner or borrower which further supports access
- Hyperlinking within an e-book can increase the flexibility of topics covered from one source
- E-books may be one solution to support an institutional 'green ICT' strategy

2.13 Adoption and usage of e-books

With the rapid changes in the global information world, more and more publishers are now releasing their new titles in traditional and digitized formats, both in response to demands from library users, researchers and public agencies, and in response to the growing phenomenon of e-readers. In fact, an Interactive Data Corporation (IDC) study (2011) indicated that e-reader sales grew 325% in 2010 over sales in 2009, with over 12 million units sold in the last three months of 2010. This is a clear indication that e-readers are here to stay and that the penetration of this technology throughout large sections of the world's population is growing quickly. Other data suggest that over 50% of the world's population have access to cell phones (Shuler, 2009), which also can also hold e-books and allow readers to download books from online bookstores. What is apparent is that mobile devices for reading are growing in availability and use among youth and their families and that the number of e-books to fill these e-readers is increasing in quantity and accessibility.

There are many different issues to consider when an institution begins the process of adopting e-books. These issues will vary, depending on factors such as whether any

pilots or projects have already been undertaken and which collections have been subscribed to or purchased.

Cultural resistance (*sub topic under 2.14*)

In an academic culture that has used printed paper books for hundreds of years; the move towards the adoption of e-books are a cultural challenge. Inevitably, users may show signs of cultural resistance and skepticism towards the use of e-books.

Some users may express a preference for the printed books, ignoring some of the advantages offered by e-books. As the JISC National E-books Observatory Project (JISC Collections, 2009) found from its focus group research, in many cases the printed book is still the preferred format and this preference predominates for several reasons: the physicality of the printed book; a perception that a printed book facilitates greater concentration; the belief that it is easier when reading to scan a printed book; and the expectation that a printed page is easier to annotate, highlight, and make notes for. In most cases, these reasons arise as a result of people thinking that using e-books is about making a choice not to use a printed book.

In reality, however, the adoption of e-books is about providing an alternative: e-books can be effectively used alongside rather than instead of printed books.

2.14 Summary of Literature Review (*sub topic under 2.14*)

E-book usage and accessibility is on the increase but its full potential to the world of academia and the ordinary reader is yet to be fully harnessed. For e-books to be a serious competitor to the publishing world dominated by printed books vexing issues such as cultural resistance, common readable formats, cost of e-readers and enhanced access especially to those of low income strata in the developing world needs to be comprehensively addressed.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Overview

This chapter describes the research methodology, the operational methods of the variables employed and the validity and reliability tests of the survey instrument. In addition, it presents the different methods of data analysis that can be alternatively used to study in-depth the phenomenon under review.

3.2 Area of Study

Kumasi: is a metropolis in Ghana and the capital city of Ashanti; one of the 10 administrative regions of Ghana. Kumasi Metro is situated west and south of Lake Volta, a large artificial reservoir completed in 1965, and north of the Crater Lake (Lake Bosumtwi) situated within Ashanti and approximately 500 kilometres (300 mi) north of the Equator and 200 kilometres (100 mi) north of the Gulf of Guinea. Kumasi Metropolis is alternatively known as "The Garden City" because of its many beautiful species of flowers and plants. Kumasi Metropolis is also called Oseikrom in Ashanti Twi; the indigenous language of the Metropolis which thrives alongside English the official language.

Educational facilities are provided by the Kumasi Metropolitan Assembly in conjunction with Private consortium/proprietorship. The private sector provides the bulk of Kumasi Metropolis educational institutions at the pre-school and first to second cycle levels whereas the public educational sector is the leader at teacher training colleges and tertiary levels which are unevenly distributed throughout the geographical precincts of the region. The Kumasi Metropolitan educational sector focuses on three main levels which are pre-school, basic school (primary and junior

secondary schools) second cycle schools (Senior High Schools) teacher training colleges, and special education and vocational/technical/commercial Schools. Gleaned from the 2010 National Population and Housing Census conducted by the Ghana Statistical Service (2014); the average literacy rate in the Kumasi Metropolis is 80.5% (males 86.6 and females 75. %) with an Ashanti Twi literacy of 97%, whilst the English language literacy stands at 69.6% (77.7% and 62.3% respectively for males and females).

The Kumasi Metropolis has reputable Senior High Schools like Kumasi High School, KNUST Senior High School, Osei Kyeretwie Senior High School, Yaa Asantewaa Senior High School, and Prempeh College, and Opoku Ware Senior High School. The Kwame Nkrumah University of Science and Technology, Kumasi (formerly the Kumasi College of Technology) is the premier University of Science and Technology in Ghana and West Africa.

3.3 Research Design

A survey is conducted to gather the needed information primarily for the purposes of research among other uses as the need arises. A survey moreover is essentially a method of data gathering from samples which are representative of a population. Brown and Rogers (2002, p. 142) states that “Surveys are any procedures used to gather and describe the characteristics, attitudes, views, opinions and so forth of students, teachers, administrators or any other people who are important to a study”. While a survey is proving to be an effective tool, it is also expensive, time and effort exhaustive and practically useless if not carried out well. When conducting a survey, it is important that the researcher clearly understands the goals of the study so that the process will be properly directed.

Furthermore, the researcher has to consider the feasibility of the research topic to be able to have realistic expectations from the respondents. Brown and Rogers (2002, pp. 142-3) state writing good items is the first step in doing survey research. To do this, you need to be very clear about what you want to survey. You may first want to make a clear written statement of what it is you are setting out to accomplish in your survey and keep that in mind when you are actually writing items.

Once you have written the survey, whether in the form of an interview or a questionnaire, you will also need to get feedback from colleagues on the quality of the items and/or to pilot the survey instrument with participants similar to the ones you will eventually be surveying Brown and Rogers (2002) present a number of negative items that should be avoided when writing a survey. This list of negative items includes overly long items, ambiguous items, leading items, embarrassing items, items that respondent is incompetent to answer, double-barreled items and irrelevant items.

3.4 Sampling Procedure

The study defined the target population, study population, unit of analysis and adopted the appropriate sampling technique. Again, the right sample size for the study was arrived at and the data management was captured in this section.

3.4.1 Target Population

The target population was students from all the eighteen (18) public Senior High Schools (SHS) in the Kumasi Metropolis. However, due to envisaged constraint on resources such as time, money and access to information, the study was limited to five schools which are Opoku Ware Senior High School, Prempeh College, St. Louis

Senior High School, Yaa Asantewaa Senior High School and Kumasi Anglican Senior High School.

3.4.2 Study Population

The study population embodies all the subjects possessing the characteristics of interest under investigation located at a defined territory. The population for this study consisted of all students from all the five (5) senior high schools Opoku Ware Senior High School, Prempeh College, St. Louis Senior High School, Yaa Asantewaa Senior High School and Kumasi Anglican Senior High School selected from the Kumasi Metropolis for the survey. Quantitatively, the population for this study comprised all the students who had used electronic book before as at the time of the study. The study gathered two hundred and eighty-three (283) students from the five selected schools.

Schools	Number of Respondents	Percentage of Respondents
Opoku Ware School	60	21.2%
Prempeh College	58	20.5%
Saint Louis SHS	55	19.4%
Yaa Asantewaa SHS	55	19.4%
Anglican SHS	55	19.4%

Table 1: Number of Respondents and corresponding Schools

3.4.3 Unit of Analysis

The unit of analysis of a study defines the subjects who possess the unique characteristics under investigation. The unit of analysis of this study involved any student of high school going status who schools in the Kumasi Metropolitan Area and he or she is a user of e-books.

3.4.4 Sample Technique

In conducting research, it is at times too costly or impossible to collect data from all potential respondents (Osuala, 2005). Hence, a smaller number of units (sample) were chosen to represent the whole population. This study employed different sampling methods. Purposive sampling was used to select schools within the Kumasi Metropolis. With regards to purposive sampling, the researcher decides on who to include in the sample frame which was based on appropriate characteristics required (Babbie, 2013; Osuala, 2005; Payne, 2004). David and Sutton (2004) postulates that the units are selected according to the researchers own knowledge and opinion about which ones they think will be appropriate to the topic area. In line with this, purposive sampling was employed to select five schools from out of the numerous schools within the Metropolis. The reason being that the study employed purposive sampling; these schools were chosen upon the responses received from the heads of the various schools during the preliminary studies. The selected schools included Opoku Ware Senior High School, Prempeh College, St. Louis Senior High School, Yaa Asantewaa Senior High School and Kumasi Anglican Senior High School. These schools were selected based on the fact that they are considered to be the grade A schools in Ashanti region and for that matter it is assumed that the usage of e-book is quite common among the students. Moreover, during the preliminary study, teachers within selected schools confirmed that their students are conversant with e-books. The study again used purposive sampling to select students from the selected schools as survey respondents.

3.4.5 Sample Size and Selection of Respondents

Precisely 54 students were selected from each school to constitute the total sample of 283 students from all the five schools. Students were approached (intercept survey)

and explained the purpose of the study to them; students who expressed interest of participation in the study and also possessed the characteristics of interest under study were selected for the study. The study sampled students who had used electronic books before and were enrolled in the aforementioned Senior High Schools.

3.5 Methods for Collection of Data

The study employed self - administered questionnaires to collect data from the respondents supplemented by secondary data (from newspaper extracts, books, internet and research works) which was explored and utilised by the researcher.

3.5.1 Primary Data Collection Tools

The study employed a mix of quantitative and qualitative methodologies via questionnaires that included both open-ended and close-ended questions.

3.5.2 Secondary Data

The study also made extensive use of secondary data, such as books, Journal articles and assignment reports.

3.6 Problems of Field Work

Accessibility to information was a major challenge to this study. Headmasters of the various schools required the researcher to provide letters of introduction before permission was given to interact with the students. The researcher pooled together personal resources both financial and time wise in the quest to undertake the study and complete it successfully.

3.7 Data management

This section of the chapter explains the analytical methods which will be employed to analyze the data to address the study's specific objectives.

Primary and secondary sources were analyzed by providing solutions to the research questions using both quantitative and qualitative methods. These includes the following:

Pretext Questionnaire (sub topic under 3.6)

Pretexting of the questionnaire was carried out in the pilot survey. This helped to identify and observe errors geared towards ensuring completeness and accuracy as well as to check inconsistencies in the questionnaires.

Coding or Responses (sub topic under 3.6)

It is prudent to classify data under the categories that will be consistent with the objectives of the study with the use of Statistical Package for Social Sciences (SPSS). Data collected be analyzed and presented in tables, graphs and charts in order to aid in the understanding of the study results. In the end, the effective mix of both qualitative and quantitative analysis will provide answers to the research questions and research objectives in a manner that presents a good judgment that will enhance the validity of the research findings.

3.8 Validity and Reliability

Everitt (2000, pp. 388) defines validity as “the extent to which a measuring instrument measures what is intended”. Key (2007) described the validity of the research instrument as a test to determine whether the questionnaire measures what it was supposed to measure. Mason and Bramble (as cited by Key, 2007) showed that

there are three basic approaches to the validity of the tests and these are content validity, construct validity and criterion-related validity. For this study, content validity was utilized since it seemed to be the approach that entails less resources and effort.

Content validity is an approach which measures the degree to which the questionnaire items represent the universe of interest. In order for content validity to be established in the questionnaire, the researcher must identify the overall content to be represented. To do this, questionnaire items must be chosen randomly from the content. These items are expected to be a good representative of all the information in each of the areas of the survey instrument. To identify the universe of content, it is usually suggested that a panel of experts in the field to be studied will be asked to identify a specific content area (Key, 2007).

The questionnaire used in this study, which was adopted from a number of previous studies, was given to five linguists and specialists to judge its validity. Some items were modified and others were deleted according to the supervisor's advice until the researcher came up with a final draft of 30 items that satisfied all of them. McGrath (2002) defines reliability as the accuracy and consistency of the measurement resulting from an assessment. It is "the extent to which the same measurements of individuals obtained under different conditions yield similar results" (Everitt, 2002, p. 321). Four methods can be used to assess the reliability of an instrument: and these are retest method, alternative form method, split-halves method and internal consistency method (Key, 2007).

For the determination of the reliability of this study's questionnaire, the internal consistency method was used. This is because this method required neither the splitting of items into halves nor the multiple administrations of instruments.

3.9 Ethical Consideration

The study was conducted according to international and local laws and regulations: the Declaration of Helsinki. Locally, the KNUST Committee for Human Research Publication and Ethics reviewed and cleared the study protocols prior to the implementation of the study. A written informed consent was translated and explained to potential study participants in a language well understood by them prior to their enrolment in the study.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Overview

This chapter deals with the presentation and analysis of data collected and the interpretation of information gathered by the researcher through questionnaires administered to students in some selected Senior High Schools within Kumasi Metropolis in the Ashanti region of Ghana. The fourth chapter of the study presents the background analysis of data and proceeds to present the results and its interpretation in the light of the research objectives and questions in the same sequence as echoed in chapter one. The chapter continues by linking the findings of the study to the literature reviewed in chapter two. The use of tables and graphs were employed to make the findings and the analysis more lucid and comprehensible.

4.2 Demographic Characteristics of Respondents

4.2.1 Programme of the Respondents

The researcher intended to know the programmes of the respondents as to whether they were pursuing Science, Business, Visual Arts, General Arts, and Home Economics. The study discovered that 105(37.1%) of the respondents indicated that they were Science students, followed closely by 79(27.9%) General Arts students, and 60(21.2%) said they were Home Economics students. Also, it was noted that 26(9.2%) respondents were offering Business programme. However, none of the respondents as at the time of the research was offering Agricultural Science. This clearly shows that majority of the

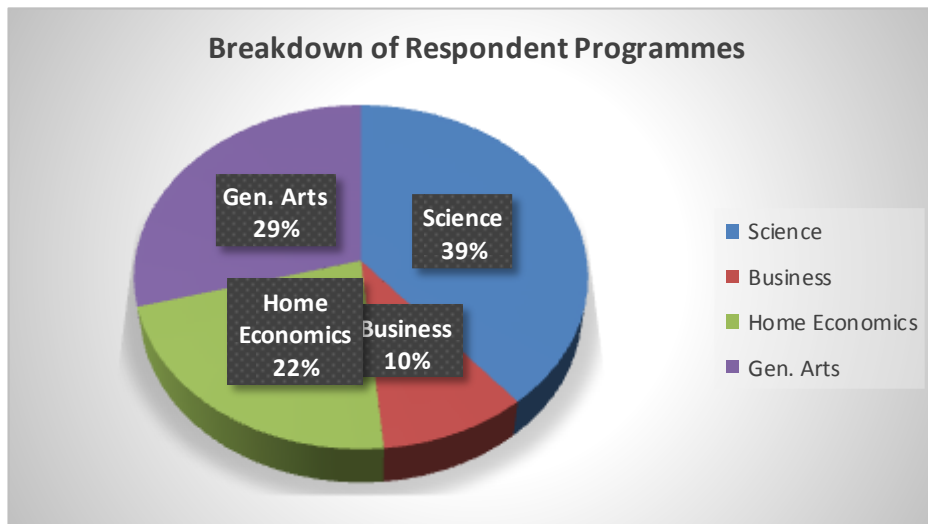


Figure 1: Breakdown of Respondent Programmes.

Source: field data, 2015

Respondents were science students during the time of the study. The breakdown of the respondents' programmes are shown in figures 1 and 2

4.2.2 Class of the Respondents

Yet another significant feature of the respondents the study explored was to determine the class of the respondents. Significantly, 198(70%) respondents indicated that they were in form two during the period of the study, followed by 65(23%) respondents who expressed that they were in form one with 20(7%) of them being form three students. This implies the majority of the respondents who participated in the study were form two students. Figure 3 presents the details of the class (form) of the respondents involved in the study.

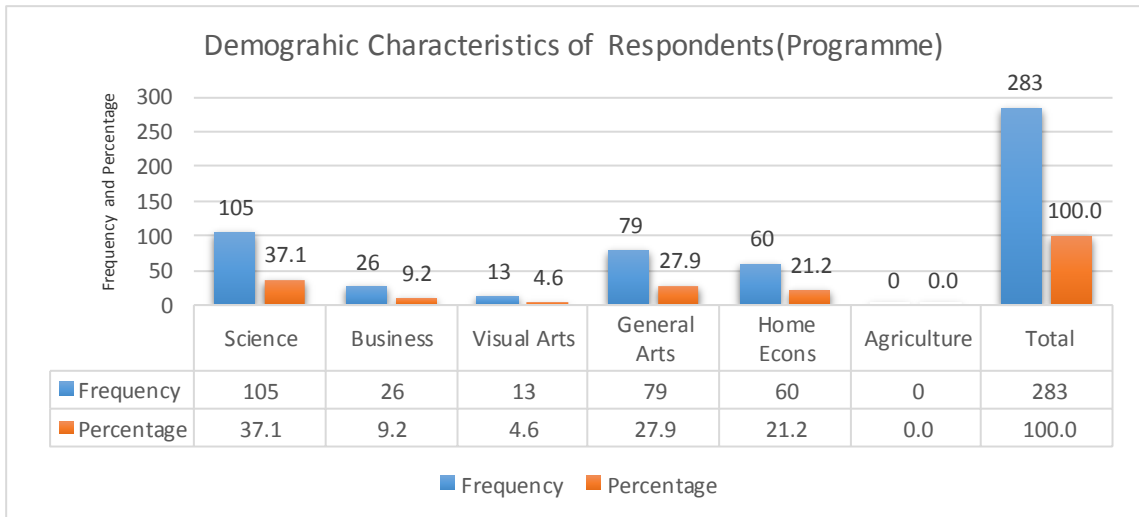


Figure 2: Demographic Characteristics of Respondents

Source: field data, 2015

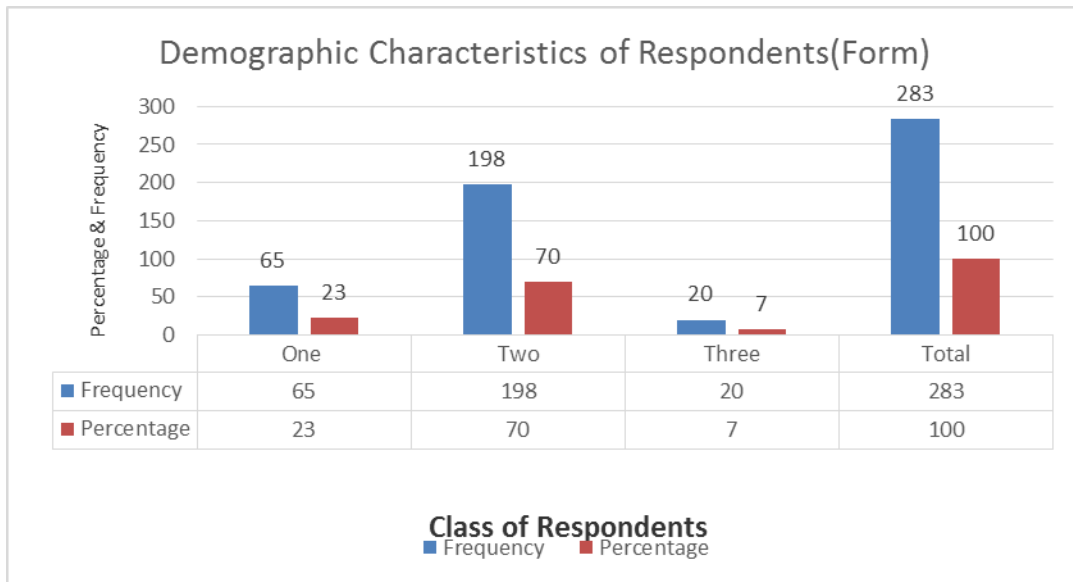


Figure 3: Demographic Characteristics of Respondents (Form)

Source: field data, 2015

4.3 Availability of Modernised Library

The study sought to find out whether there was availability of libraries in schools from which the respondents were drawn. The findings indicated that all the respondents have libraries in their schools during the period of the study. As to

whether these libraries had internet connectivity to enhance access and the use of e-books, figure 4 indicates that 124 (43.9%) of the respondents indicated their school libraries have internet connectivity to enhance access and use of e-books among the respondents, whereas 159 (56.1%) respondents expressed that their school libraries do not have internet connectivity to enhance access and use of e-books among the respondents. This represents the respondents who took in part in the study do not have internet connectivity in the school libraries.

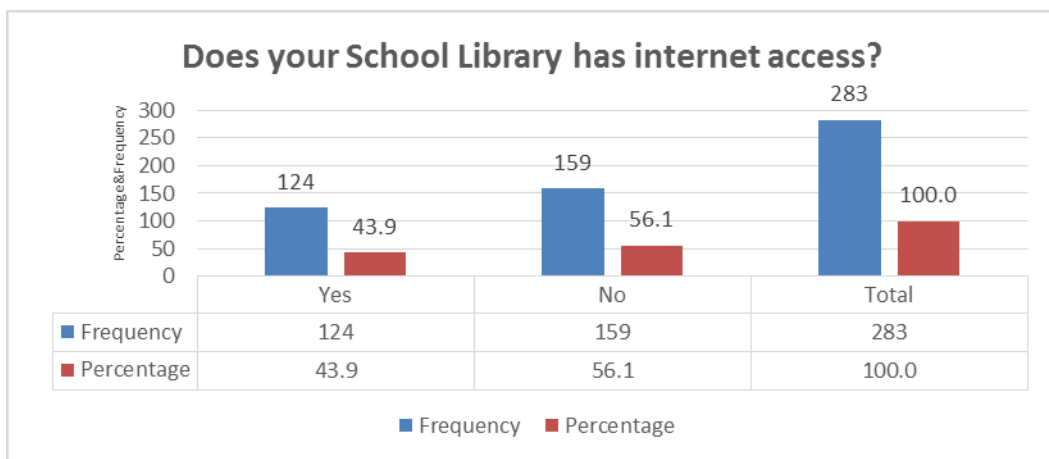


Figure 4: School Library Access to the Internet

Source: field data, 2015

Moreover, the respondents were asked to indicate whether they use their school libraries. It was discovered that 155 (54.6%) respondents used their school, despite the fact that 128 (45.4%) respondents said that they have not been using their school libraries. Also, slightly more than half of the respondents (51%) used their school libraries for academic works, 28% of them indicated that they have been using their school libraries to help advance their personal development, whereas 21% of the respondents used their school libraries to carry out researches in the course of studies as depicted in figure 5.

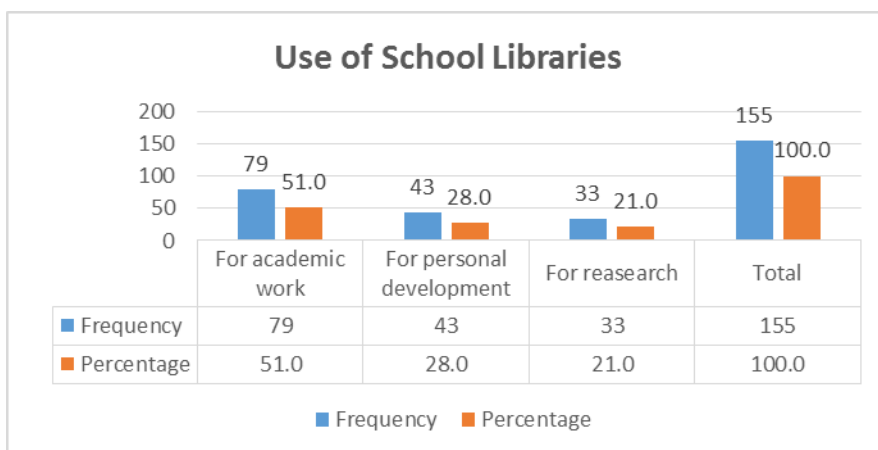


Figure 5: Use of School Libraries

Source: field data, 2015

However, out of the 128 respondents who indicated that they have not been using the libraries in their schools, 8.1% of them indicated that they did not use their school library because it was not spacious enough, with 43.1% of the respondents stating that the library in their schools has no internet connectivity. Again, 48.8% of the respondents lamented that the libraries in their schools did not have enough books hence their decision not to use the school libraries (see figure 6).

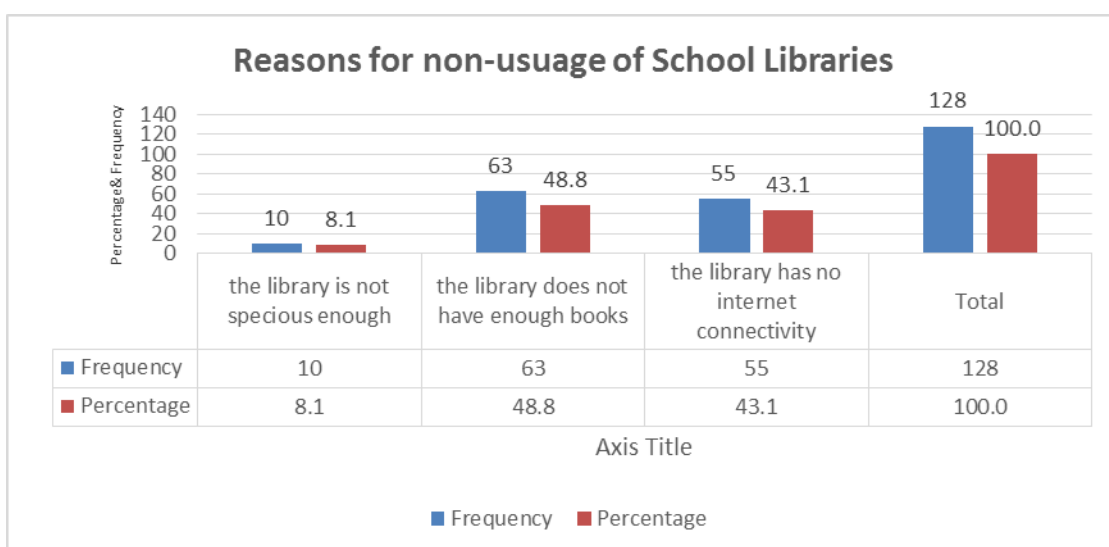


Figure 6: Reasons for the non-usage of School Libraries

Source: field data, 2015

4.4 Accessibility of Internet Connectivity

Under this section, the researcher intended to ascertain if the respondents have access to internet connectivity. Majority of the respondents (83.7%) indicated “yes” in their response to the question “do you have access to internet?” whereas 16.3% of the respondents indicated that they did not have access to internet. The respondents who had access to internet connectivity indicated that they accessed the internet from their homes, schools, internet cafés, as well as from their cell phones. Figures 7 and 8 gives graphical presentation of how the respondents access internet connectivity.

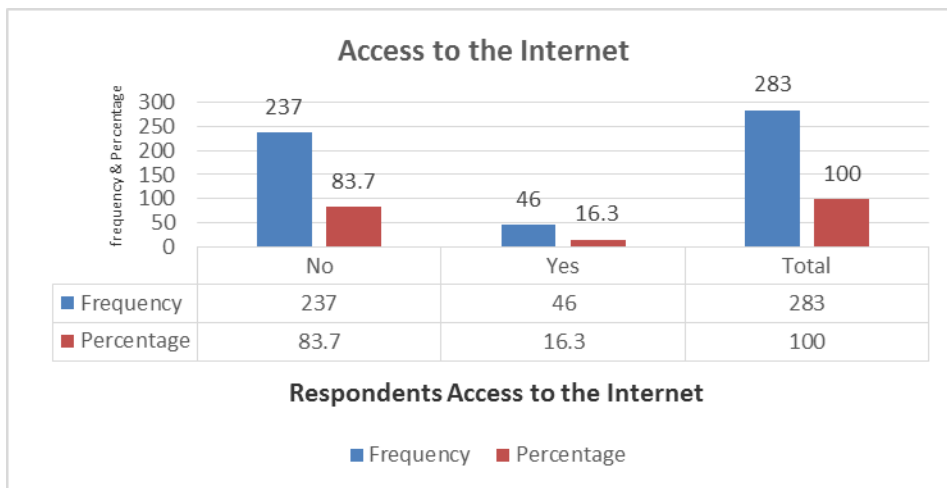


Figure 7: Access to the Internet

Source: field data, 2015

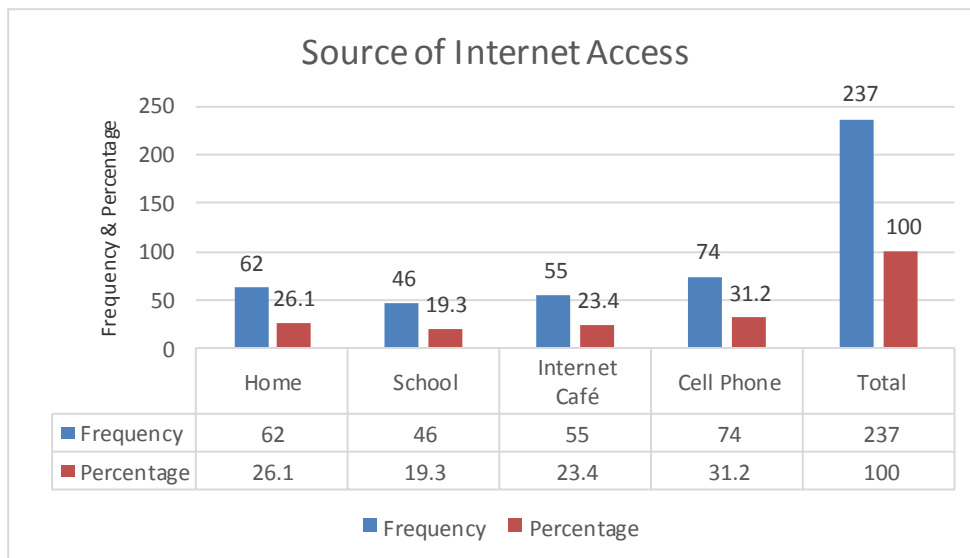


Figure 8: Source of Internet Access

Source: field data, 2015

4.5 Knowledge of E-Books

The study found that 185 (65.4%) of the respondents knew of e-books, whereas 98(34.6%) of them did not know of e-books (Figure 9). The study further asked the 185 respondents who knew of e-books (electronic books) to describe it. Evidence from the gathered data revealed that 16 (8.6%) of the respondents considered an e-book to be a computer with digital books, 52 (28.1%) of the respondents said that an e-book is an electronic device that has books loaded onto it, whereas 117 (63.3%) of the respondents indicated that an e-book is a book-length publication in digital form, readable on computers or other electronic devices. From the analysis, it can be deduced that most of the respondents who know of e-books, considered an e-book as a book-length publication in digital form, readable on computers or other electronic devices as depicted in figure 9.

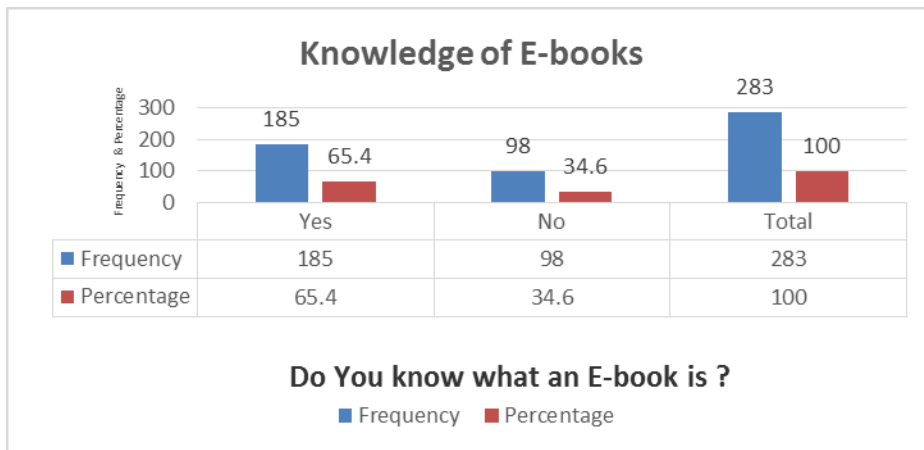


Figure 9: Knowledge of E-books

Source: field data, 2015

4.6 Use of E-Books

Modernity has impacted so much on society that, the introduction of computers and other electronic appliances has gradually transformed the orthodox approach of studying. Students now resort to reading their notes on either their phones or computers. This study sought to find out from the second cycle students in Kumasi whether they use e-book or not. Figure 6 indicates that, 130 (70%) affirmed their usage of the e-books whereas 55 (29.7%) were non users of the e-books. This implies that majority representing the sampled students facilitate their learning process with e-books. This further implies that the transition from the orthodox approach of studying to a digitalized modern platform is gaining traction in the second cycle institutions particularly Kumasi Anglican School albeit on a smaller scale.

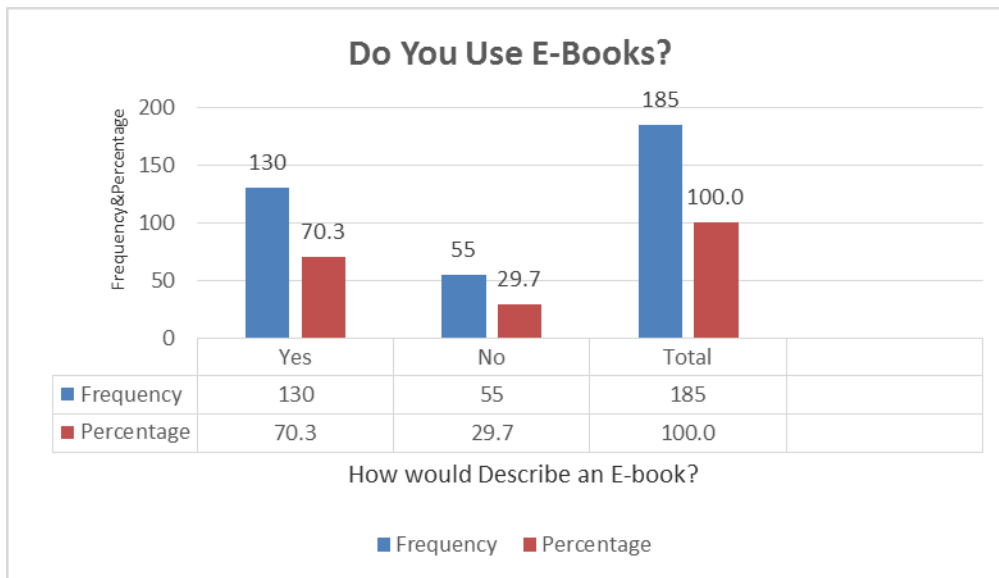


Figure 10: Use of E-books among Respondents

Source: field data, 2015

Secondly, the study revealed that in terms of frequency of the products’ usage, 70 out of 130 (54%) of the students use their e-books weekly. Impressively, 40 out of 130 (31%) use their e-books every day. Only 20 out of 130 (15%) respondents utilize their e-books once every month as portrayed by figure 11. By implication, it is evident that electronic books usage is quite high among Senior High School students.

There are numerous benefits of e-books that necessitated the study as one of the objectives is to ascertain from the students the sort of benefits they derive from the use of e-books. Respondents numbering 53 out of 130 (4.8%) intimated that apparently they use the material for personal development. Quite a considerable number 35 out of 130 (26.6%) of the respondents also indicated that the use of e-book is for nothing more than self-inspiration and entertainment. Respondents numbering 21 out of 130 evidenced another significant revelation (16.3%) as they affirmed that e-book keeps them informed and educated. Not far from that, 21 out of 130 (16.3%) again established that, e-book usage is for academic purposes. Evaluating the

responses, it is obvious that almost all the students use e-books for academic purposes save the relatively few that draw inspiration and entertain themselves with these material.

Against the backdrop of the relevance of e-book, the study endeavored to ascertain from the students what specific e-books they read (figure 13). A majority, 53 out of 130 respondents (40.8%) indicated that they read all kinds of books. Next to that, 25 out of 130 respondents (19.6%) reiterated that they often times read fiction related books. Textbooks were not left out as 21 out of 130 respondents (16.5%) affirmed their passion for reading them. Religious supplementary as well as biography books well affirmed by 38 out of 130 respondents (23%) of the respondents as their frequent books they read. The majority having indicated that all kinds of e-books holistically affirm that electronic books have come to stay and secondary school students have patronized it to a degree as well. The source of the e-books that facilitate students learning was explored and the dominant origin from which the e-books are sourced outside Ghana (figure 15).

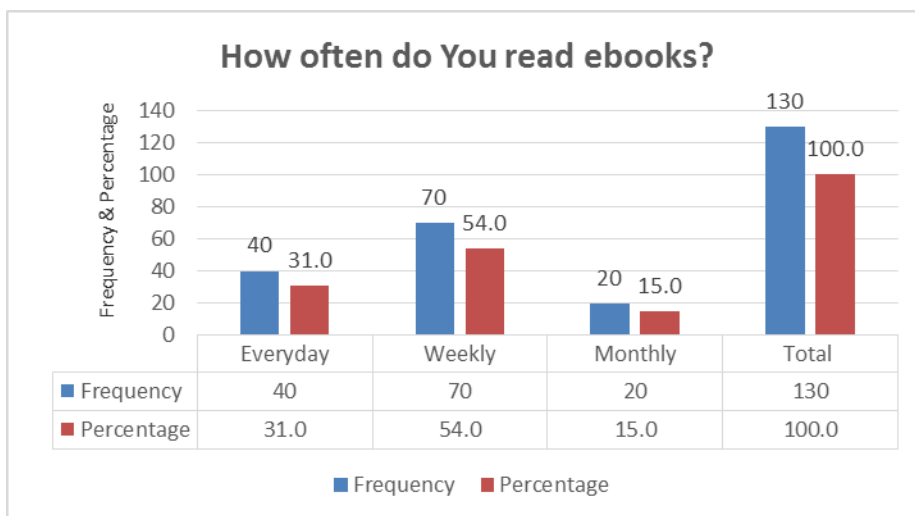


Figure 11: How often do you read E-books

Source: field data, 2015

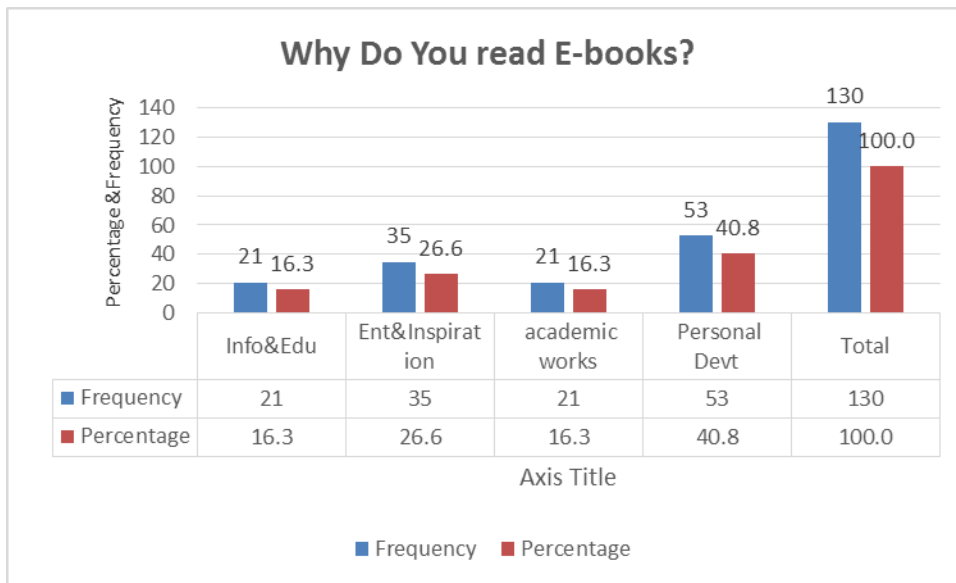


Figure 12: Reasons for reading E-Books

Source: field data, 2015

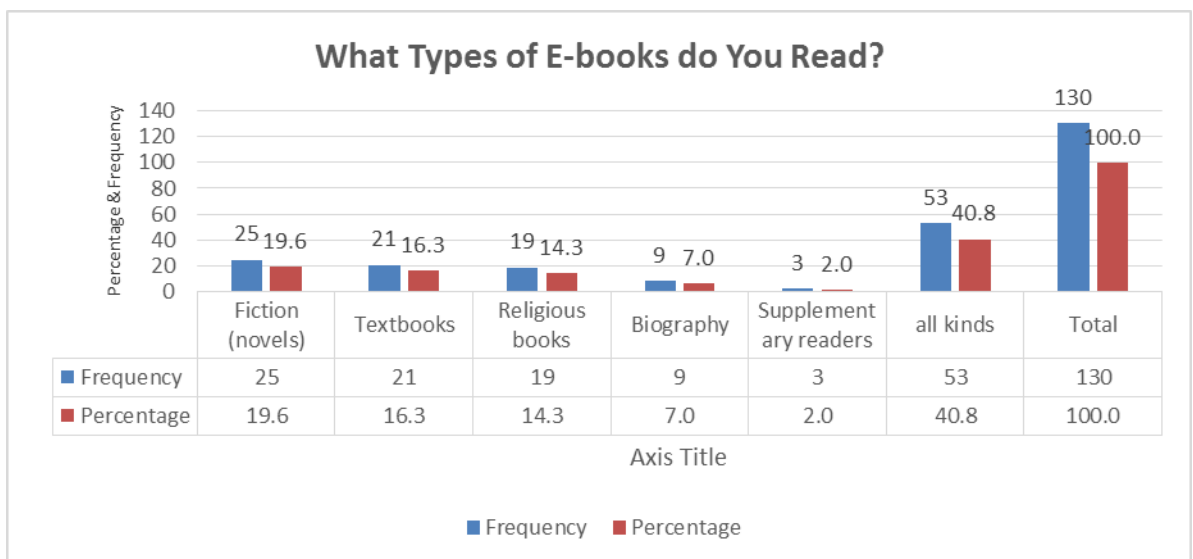


Figure 13: What types of E-books do you read?

Source: field data, 2015

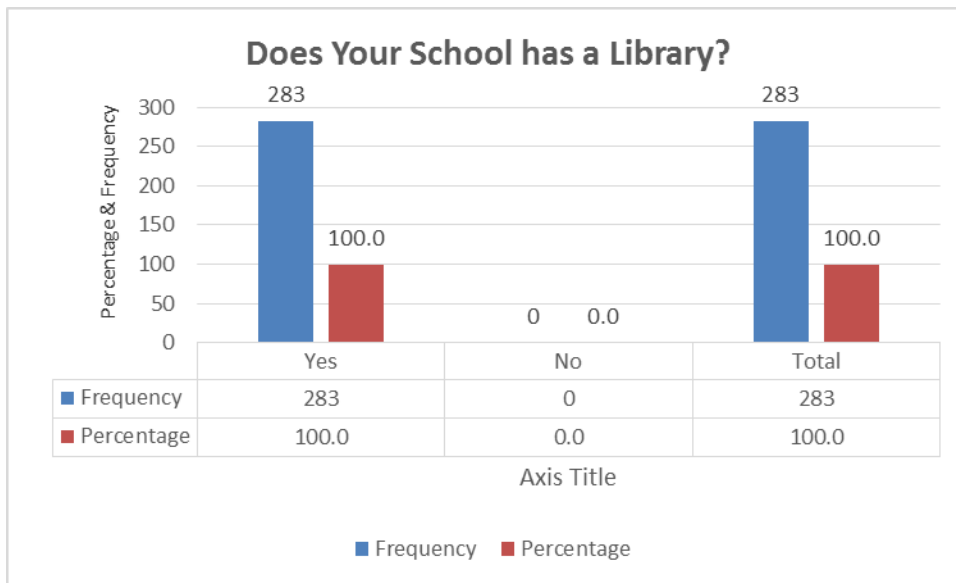


Figure 14: Does your school has a library?

Source: field data, 2015

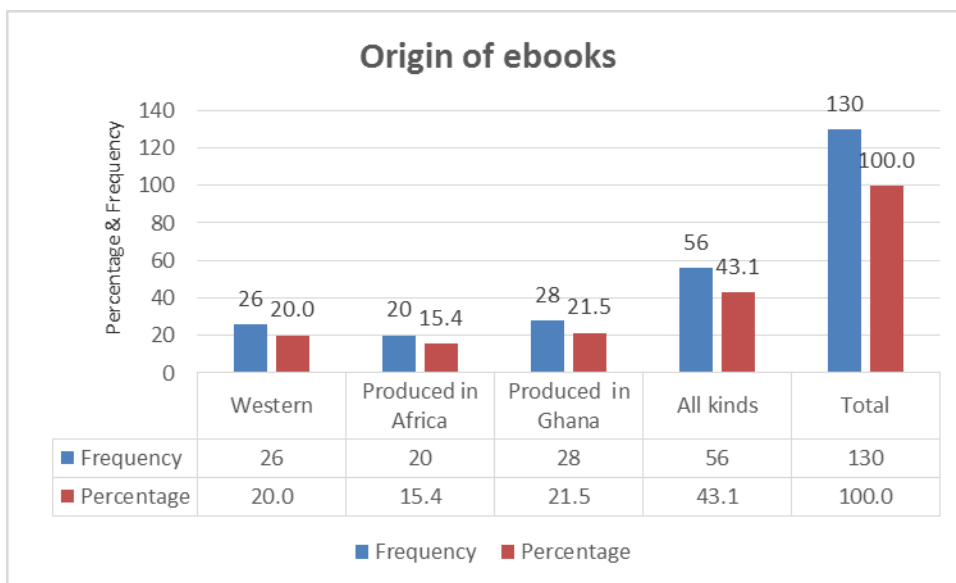


Figure 15: Origin of E-books

Source: field data, 2015

4.7 Availability of E-Books

Frequent usage of e-books implies that the material is readily available as and when it is required. The study participants agreed to this assertion holistically as the 130 users of the material unanimously agreed that the e-books are always available. The

underlying assumption is that where and whenever students require the material, it is readily available and has not gone out of stock.

In view of the afore - mentioned point, the study sought to find out how students acquire their reading material. The internet according to 107(82.4%) of the respondents has been the major source of the reading material to the majority of the students. Next to that, 23 (17.6%) indicated that the material is always installed on the reading device they use (figure 17). This is quite a significant revelation and must be acknowledged that institutions or agencies that make such documents available on the internet should be encouraged to support students the way and manner it has been confirmed to achieve their academic goals.

Fundamental question that begs for an answer as far as students' accessibility of the internet is concerned is the particular access point where students utilize the facility to their advantage (figure 18). Out of the 130 users, 51 of them (39.1%) indicated that they browse at home and at internet cafes respectively. Out of the 130 users, 10 (8%) indicated that they browse after school session while 18 (13.8%) intimated that they access the internet after school which is a laudable practice. The observation being made in this revelation is that majority of the students as indicated, access the internet at home. Indeed, that is once again a laudable practice since they would have enough time, as it were, to ponder over critical issues embedded in the documents and spend time to understand their contexts and the concepts therein.

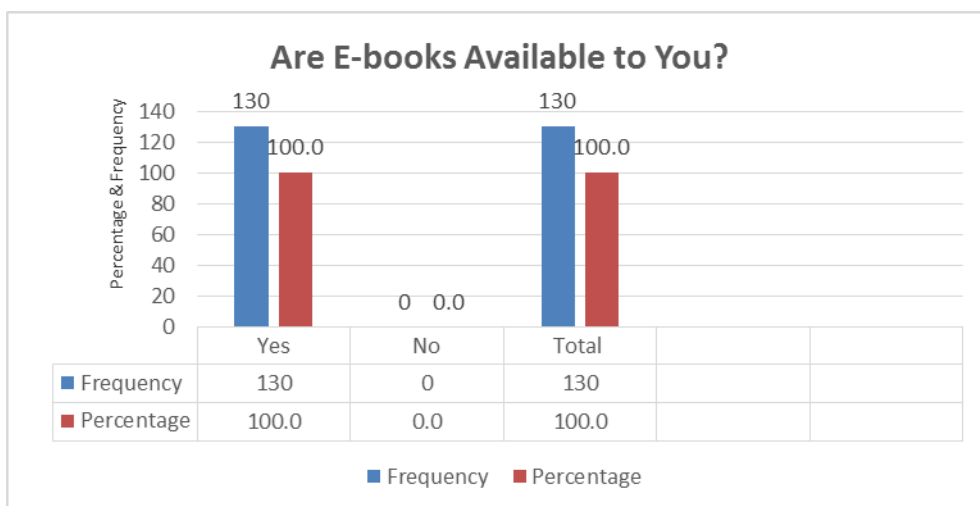


Figure 16: Availability of E-Books

Source: field data, 2015

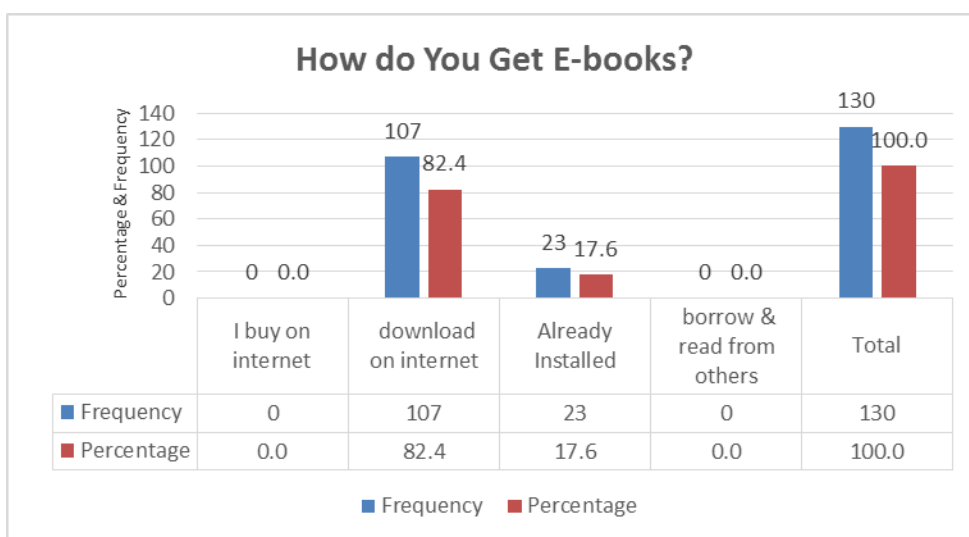


Figure 17: How do you get E-books?

Source: field data, 2015

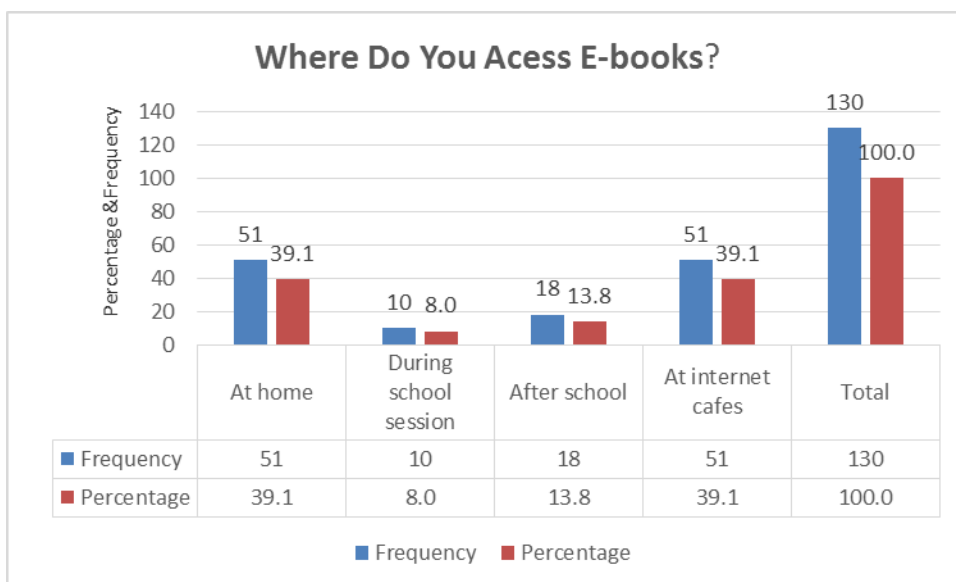


Figure 18: Where do you access E-Books?

Source: field data, 2015

4.8 Devices Used To Read E-Books

The use of the internet has always been accompanied by the use of modern appliances such as the Ipad, desktop computers, laptops, and smart phones. This analysis cannot dissociate itself from the mentioned gadgets. Figure 19 indicates the tools students have been using to access reading material on the internet. Impressively, 42 (48.3%) of the students did indicate that they access the material on their smartphones. This is something to write home about since the dominant impression has been that, Senior High School students use phones for unapproved or better still for non-academic purpose. The use of laptop was the next dominant device patronized by students to access the internet. 28 (32.2%) participants alluded to this practice. IPad and desktop computers received 10 (13.7%) and 5 (5.7%) respectively out of the 130 users sampled. This presupposes that the use of smart phones should be encouraged among Senior High School students since the device is utilized purposefully as per the findings of this study.

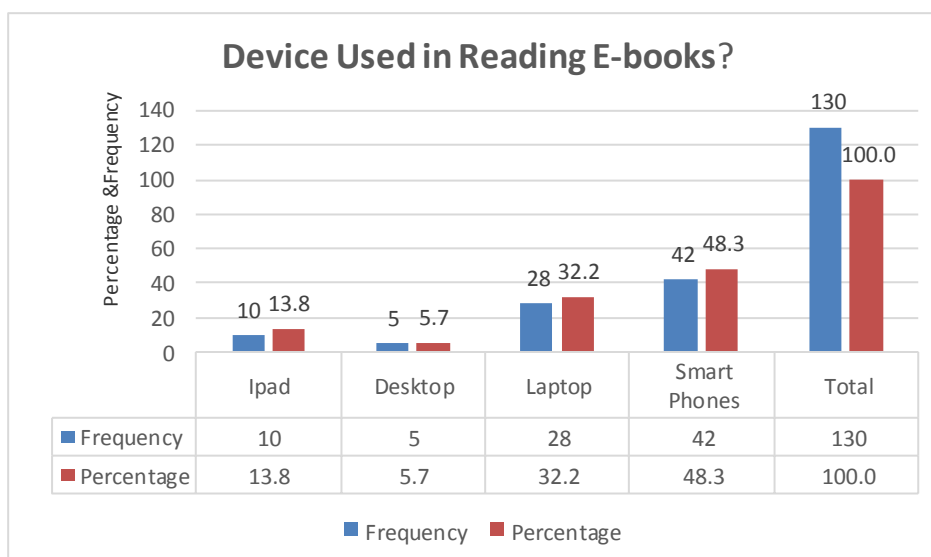


Figure 19: Device used in reading E-books

Source: field data, 2015

Owning a phone especially at the Senior High School level is prohibited in the Ghanaian educational system. Having identified that, majority of the students employ dominantly the use of smartphones to access e-books, the study hence probed into ownership of those gadgets. Figure 20, did indicate that 85 out of 130 users (65.5%), own the devices themselves while 45 (34.5%) affirmed their position as not being the owners of the gadgets.

Honestly, as students are not generally working especially at the secondary school level, the study probed into how the students procured the devices. Figure 21 indicates that 30 out of 130 users (35.1%) alluded to the fact that, it was expensive acquiring the gadget though the actual price was not disclosed. Surprisingly, 42 (49.1%) intimated that it was given them as gifts and 13 (15.8%) indicated that it was affordable.

Holistically, students were asked what had actually accounted for their interest in the reading of e-books (figure 22). Without hesitation, 38 (45%) were confident to

indicate that they were motivated by the brand of the reading device. Moving on, 26 (30%) affirmed that the cost of the reading device motivates them to patronize a particular device to the access their e-books. The prestige associated with the use of the reading device as motivation was underscored by 9 out of the 130 users (11%). E-books' portability was also affirmed as the motivation element for students' patronage of a particular reading device. Seven (7) (8.6%) students indicated this as their motivation for their patronage. To wrap up on this, students dominantly, affirmed that the brand alone intrigues them to patronize their respective e-book reading devices.

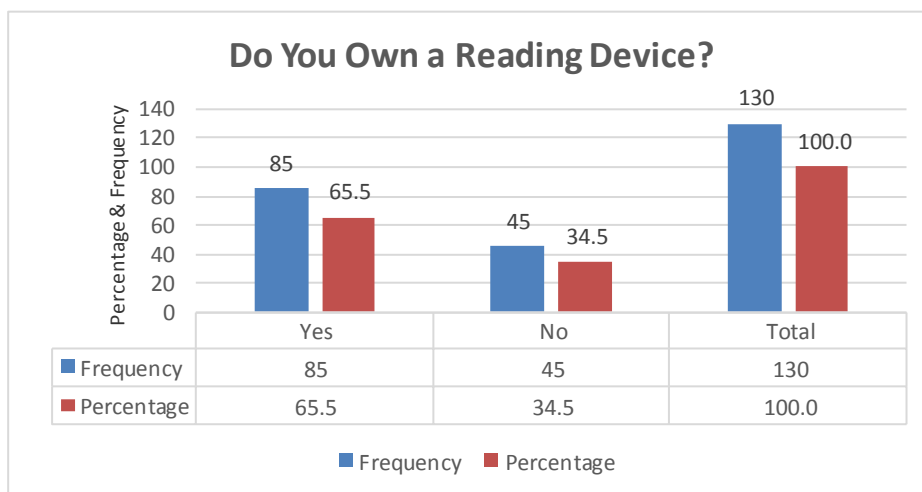


Figure 20: Ownership of reading device

Source: field data, 2015

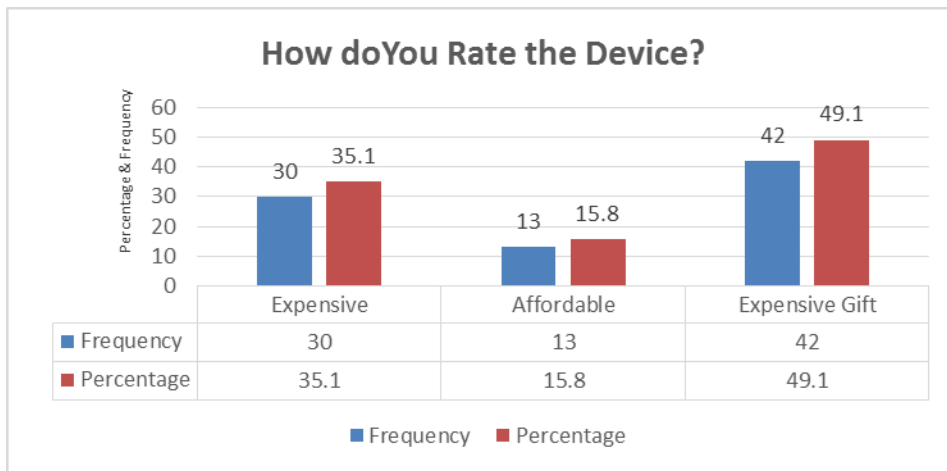


Figure 21: How do you rate the device

Source: field data, 2015

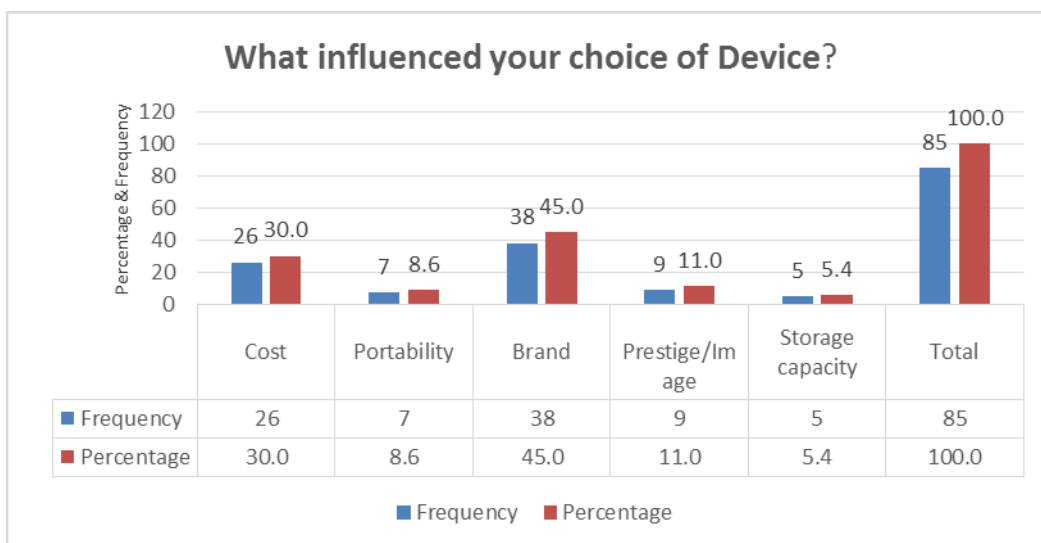


Figure 22: Factors influencing choice of device

Source: field data, 2015

4.9 Reasons for not reading E-Books

As some of the student did indicate apparently that they do not read e-books, presumably, something might have accounted for that hence the researcher sought to probe into the underlying assumptions; both intrinsic and extrinsic factors that hinders students from patronizing e-books. Figure 23 indicates that 18 out of 55 respondents (32.2%) are interested in the reading material (e-book) but apparently they do not

have time to read, so to speak. A call for pragmatic approach to address their issue are 29 out of the 55 respondents (53.4%) who disclosed that, primarily, they are interested in the material (e-book) but unfortunately do not own any accessible e-book reading device.

A segment of the respondents representing 6 out of the 55 students sampled (11%) were of the view that, indeed, they admit the relevance of reading an e-book but they are not permitted to use e-book reading devices. Only 2 (3.4%) affirmed their preference for printed books irrespective of the availability of e-book. A call for prompt attention are the 29 majority respondents who as indicated are interested but do not have the financial means to access the material.

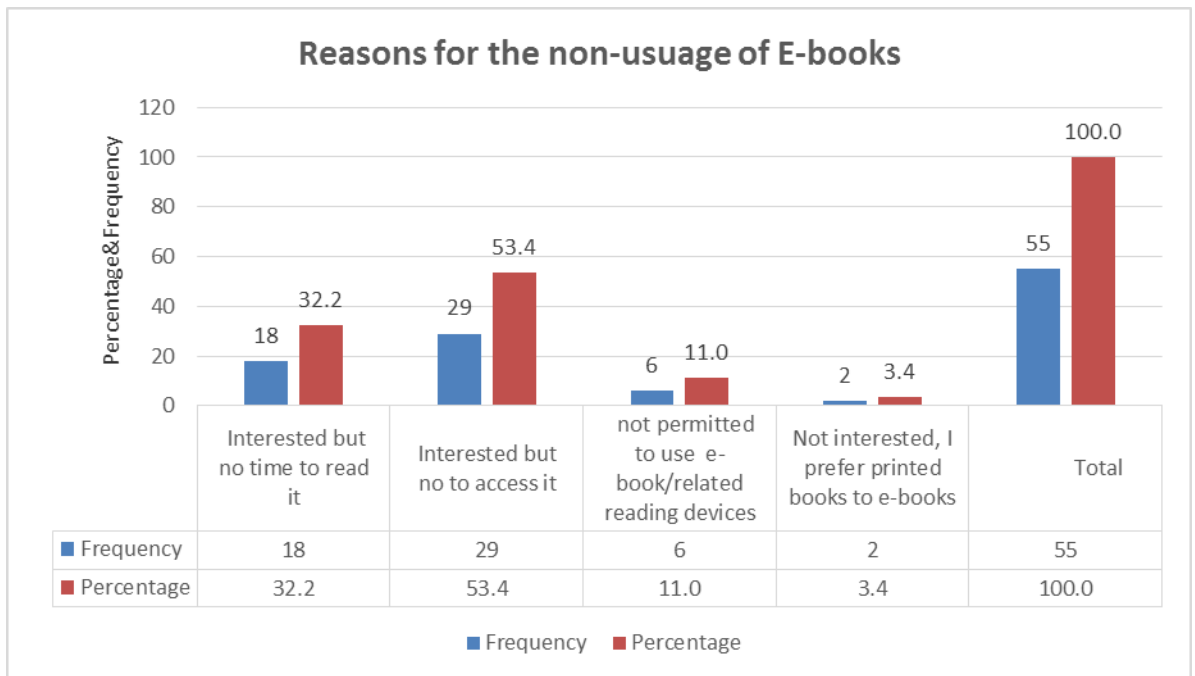


Figure 23: Reasons for the non-usage of E-Books

Source: field data, 2015

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 Overview

This chapter is organized into three sections. The first section summarizes the major findings collected from the field in relation to the research questions or objectives in the same sequence as listed in chapter one. The second section focuses on the conclusion of the study and the final section looks at recommendations brought up by the researcher.

5.2 Summary of Major Findings in the Research Survey

This study was carried out in some Senior high schools in the Kumasi Metropolis in the Ashanti region of Ghana. The data collected was through the use of questionnaire.

The study was descriptive survey. The objectives of the study seek to:

1. Find out the availability of e-books among Senior High School students.
2. Describe the mode of accessing e-books and frequency of use by SHS students.
3. Identify and discuss the benefits and challenges in accessing and using e-books.

Three research questions were developed to guide the study and they are as follows:

1. In what form are e-books available to Senior High School students in the Kumasi Metropolis?
2. How do students frequently access and use e-books in schools?
3. What benefits and challenges do students face in accessing and using e-books in Senior high schools in Kumasi?

In the analysis of the data vis-à-vis the research questions raised, frequency and percentage tables based on the respondents' responses were constructed.

With regard to the first research question “how and in what form are e-books available to Senior High School students in the Kumasi Metropolis? Although, 185 out of 283 Senior High School Students surveyed, had knowledge of e-books their access to e-books was often obstructed by school regulations, lack of appropriate e-book reading devices among other factors. However, the study discovered that merely 130 students indicated that they have been reading e-books and have their e-books readily available to them. Furthermore, the study found that most students acquired their e-books by downloading them from the internet as a small segment of the students surveyed indicated that they have their e-books pre-installed on their reading devices. It was obvious from the results that most of the respondents accessed their e-books at home and internet cafes after they have returned from school.

Moreover, with reference to the second research question “what mode do students frequently access and use e-books in schools?”. The study also revealed that, 42 out of 130 respondents (48.3%) did indicate that they access the material on their smart phones, with 28 out of 130 (32.2%) respondents alluded to the use of laptop to access the internet for downloading and use of e-books. However, the use of iPad and desktop computers in reading e-books received 10 (13.7%) and 5 (5.7%) of respondents respectively. Having identified, that majority of the students employ dominantly the use of smart phones to access e-books, the study also discovered that most respondents (65.%) owned the gadgets while 34.5 percent of them affirmed their position as not being the owners of the gadgets. Again, the results indicated that the brand of reading devices alone intrigues them to patronize a particular e-book reading device among senior high students.

Besides the forgoing, there are numerous benefits of e-books that necessitated the study as one of the objectives was to seek from the students what they derive from the

use of e-books. It was found that students used e-books for the benefits of personal development, self-inspiration, education, information, as well as for academic purposes. However, a significant number of the students who did not benefit from the reading and use of e-books gave the following reasons:

- i. Interested but do not have time to read e-books
- ii. Interested but do not have a device to access e-books
- iii. Interested but they were not permitted to use e-book/related reading devices
- iv. Not interested but preferred printed books to e-books.

5.3 Conclusion

It is obvious from the study that merely 130 students have been reading e-books and have their e-books readily available to them. Again, the study found that most students acquired their e-books by downloading them from the internet as a small section of the students indicated that they have their e-books pre-installed on their reading devices.

It is evident from the study that most of the students accessed the e-books using their smart phones, with few of the students alluding to the use of laptop to access the internet for downloading and use of e-books. The majority of the respondents are regular users of the e-books. The findings of the study were that; the brand of the reading devices alone intrigues them to patronize a particular reading device for e-books among senior high students. Access to and thus usage of e-books among students in the Kumasi Metropolis gives unfettered instant access to a wealth of information on the web which can handily be accessed by students for a variety of purposes prime among whom are information and academic related materials for studying. Nonetheless, the obvious benefits to be accrued from having access to and

subsequently usage of e-books is often stifled by lack of access and invariably cost (i.e cost of reading devices and e-books) which are the major decisive factors that determines whether the full benefits inherent in e-books can be harnessed and utilized for enhanced academic performance in Senior High Schools in the Metropolis.

Moreover, the study also found that students use e-books for the benefits of personal development, self-inspiration, education, information, as well as for general academic purposes.

It can therefore be concluded that the research findings have effectively gratified the objectives of the study and justified the research questions posed by the researcher. The outcomes of the study are important since they demonstrate how crucial and important e-books are to High School's Students in the arena of information sourcing coupled with untapped potentials that can be unlocked in a bid to enhance academic performance of students in the Kumasi Metropolis.

5.4 Recommendations

Based on the findings above, the following recommendations have been made to help promote access and use of e-books among Senior High Schools students:

- i. It is suggested that Ghana Education Service must institute policies to encourage and intensify the access and use of e-books among Senior High School students.
- ii. It is recommended that the government of Ghana must provide the various libraries in the Senior High Schools with internet connectivity to enhance access to and use of e-books.
- iii. This study would want to make the clarion-call to philanthropists and charitable organizations to make available reading devices that students in senior high schools can use to access e-books.

- iv. It is suggested that similar studies ought to be conducted in order to investigate the impact of the access and use of e-books on academic performance of Senior High School students at district and national levels.

REFERENCES

- Andersen, A. (2001). Electronic books: Internet research. Available at http://www.e-bookscenter.dk/nyt/electronic_books.pdf.
- Anuradha, K. T., & Usha, H. S. (2006). Use of e-books in an academic and research environment: a case study from the Indian Institute of Science. *Program: Electronic Library and Information Systems*, 40(1), 48-62.
- Becker, B. W. (2010). The e-Book Apocalypse: A Survivor's Guide. *Behavioral & Social Sciences Librarian* v. 30 no. 3 p. 181-4
- Bothmann, R. (2004). Cataloging electronic books. *Library Resources and Technical Services*, 48(1), 12-19.
- Brown, J.D. and Rogers, T.S. (2002) *Doing second language research*. Oxford: Oxford University Press. *Business Media*, 23(1), 95-104.
- Chau, M. (2008). The effects of electronic books designed for children in education. *Scroll: Essays on the design of electronic text*, 1:1. Retrieved from <http://fdt.library.utoronto.ca/index.php/fdt/article/viewArticle/4904/1762>
- Chu, H. (2003). Electronic books: viewpoint from users and potential users. *Library Hi Tech*. Vol. 21, no.3: 310-346.
- Clark, D. T. (2009). Lending Kindle e-book readers: first results from the Texas A&M
- Connaway, L.S. (2003). Electronic books (eBooks): current trends and future directions, *DESIDOC: Bulletin of Information Technology*, Vol.23, No.1: 13-18.
- Dillon, D. (2001). E-books: the University of Texas experience, Part 1. *Library Hi Tech*., Vol.19, No.2:113-125.
- Eberhard, M. F., & Tarpenning, M. E. (2001). *U.S. Patent No. 6,331,867*. Washington, DC: U.S. Patent and Trademark Office.
- Estelle, L. & Woodward, H. (2009). The national e-books observatory project: Examining student behaviors and usage. *Journal of Electronic Resources Librarianship*, 21(1), 172-177.
- Everitt, B. S. (2002). *The Cambridge Dictionary of Statistics*. Cambridge, UK: Cambridge University Press.
- Garrod, P. (2003), "Ebooks in UK libraries: where are we now?", *Ariadne*, No. 37, available at: www.ariadne.ac.uk/issue37/garrod/

- Gibbon, Susan (2001). Net Library eBook Usage at the University of Rochester
- Gibbons, S. (2005), Electronic Books in Libraries, River Campus Libraries, University of Rochester, Rochester, NY, available at: www.lib.rochester.edu/main/websites.htm
- Gibson, M. & Ruotolo, C. (2003). Beyond the web: TEI, the digital library, and the ebook
- Goodwin, S. P., Samuelson, T., & Coker, C. (2008). A qualitative assessment of the Kindle e-book reader: results from initial focus groups. *Performance Measurement and Metrics*, 9(2), 118-129.
- Guthrie, R. (2002). The e-book: Ahead of its time or a burst bubble? *LOGOS: The Journal of a World Book Community*, Vol.13, no.1:9-17.
- Harvey, W. B. (1993). Educational technology and Third World development, *Journal of Educational Technology Systems*, 11(3): 265-283.
- Healey, L. W. (2002). The voice of the user: where students and faculty go for information. Available at: <http://www.outsellic.com>.
- Helfer, D. S. (2000). E-Books in libraries: some early experiences and reactions. (Internet/Web/Online Service Information). *Information Today*. Available at http://www.finarticles.com/cf_0/m0DPC/9_8/66217098/p1/article.jhtml?term=e-books.
<http://c0003264.cdn2.cloudfiles.rackspacecloud.com/Academic%20Library%20Eboo>
http://www.joanganzcooneycenter.org/upload_kits/pockets_of_potential_1_.pdf
- Ingraham, B. and Bradburn, E. (2003), "Sit back and relax: issues in readability and accessibility for electronic books", available at: <http://readability.tees.ac.uk/Techdis%20report.htm>
- Jamali, H. R., Nicholas, D., & Rowlands, I. (2010). Scholarly e-books: The views of 16,000
- Jamali, H. R., Nicholas, D., & Rowlands, I. (2010). Scholarly e-books: The views of 16,000 academics. *New Information Perspectives*, 61(1), 33-47. JISC TechDis guidance on creating accessible PDF documents – maximising the benefits of the PDF format – www.techdis.ac.uk/accessibilityessentials
- Johnson, L., Levine, A., Smith, R., & Stone, S. (2010). *The 2010 Horizon Report*. Austin, Texas: The New Media Consortium. [k%20Report_2.pdf](http://www.nmc.org/2010Report_2.pdf)
- Kang, Y., Want, M.J., & Lin, R. (2009). Usability evaluation of e-books. *Displays*, 30(2), 49-52.

- Key, J. P. (2007). *Reliability and Validity*. Retrieved March 14, 2013, from <http://www.okstate.edu/ag/agedcm4h/academic/aged5980a/5980/newpage18.Htm> Kindle e-book reader: results from initial focus groups. *Performance Measurement and*
- Land, S.M; and Hannafin, M, J. (2004). Student-cantered learning environments. In Jonassen DH, Land SM, eds, *Theoretical Foundations of Learning Environment*. Mahwah, NJ: Lawrence Erlbaum, :1-23 *learning*. New York, NY: The Joan Ganz Cooney Center at Sesame Workshop. Retrieved from
- Lee, S.D. (2002), *Building an Electronic Resource Collection: A Practical Guide*, Library Association Publishing, London. Libraries. Available at <http://www.lib.rochester.edu/main/ebooks/studies/libraries>. Library Journal/School Library Journal research report. Retrieved from
- Library Journal. (2010a). Survey of e-book penetration and use in U.S. public libraries.
- Library Journal. (2010b). Survey of e-book penetration and use in U.S. academic
- Library Journal. (2010c). Survey of e-book penetration and use in U.S. school libraries. Library Journal/School Library Journal research report. Retrieved from http://c0003264.cdn2.cloudfiles.rackspacecloud.com/Public%20Library%20Ebook%20Report_2.pdf
- Library Journal/School Library Journal research report. Retrieved from <http://c0003264.cdn2.cloudfiles.rackspacecloud.com/School%20Library%20Ebook%>
- Long, S. A. (2003). The case for e-books: an introduction. *New Library World*, Vol.104, no.1184/1185:2932. Available at http://www.nsls.info/about/nslsinfo/articles/sarah_ebook.pdf.
- McCarty, Jennifer E. 2001. Why your patrons will love e-books (and you should
- McGrath, I. (2002). *Materials Evaluation and Design for E-books Teaching*. Edinburgh: Edinburgh University Press. *Metrics*, 9(2), 118-129.
- Rao, S.S. (2001), "Familiarization of electronic books", *Electronic Library*, Vol. 19 No. 4, pp. 247-56.
- Rivero, V. (2010). E is for explosion. *Multi Media & Internet@Schools*, 17(4), 8-14.
- Sarfo, F.K., and Ansong-Gyimah, K. (2010). The Perceptions of Students, Teachers, and Educational Officers in Ghana on the Role of Computer and the Teacher in Promoting the First Five Principles of Instruction, *Turkish Online Journal of*

- Educational Technology*, 2010; 9(3): 85 – 95. <http://www.tojet.net/articles/938.pdf>.
- Seybold Seminars & Publications. (2000). Industry Survey. E-books: awareness, usage & attitudes. Available at <http://www.seyboldreports.com/Specials/ebooksurvey/Survey.html>.
- Shuler, C. (2009). *Pockets of potential: Using mobile technologies to promote children's*
- Simon, E. J. (2001). Electronic textbooks: A pilot study of students e-reading habits. *Future of Print Media Journal*. Available at <http://libries.curties.edu.au/libres12u2/Index.htm>
- Siracusa, J. (2009). The once and future e-book: On reading in the digital age. *Arts Technica*. Retrieved from <http://arstechnica.com/gadgets/news/2009/02/the-once-andfuture-e-book.ars>
- Snowhill, L. (2001), "E-books and their future in academic libraries", *D-Lib Magazine*, Vol. 7 No. 7, available at: www.dlib.org/dlib/july01/snowhill/07snowhill.html
- Snowhill, L. (2001). E-books and their future in academic libraries. *D-Lib Magazine*. 7(7/8). Available at <http://www.dlib.org/dlib/july01/snowhill/07snowjill.html>
Some reflections on their apparent potential and actual development. *Springer Science &*
- Spring, T. (2010). E-book piracy: Is your download legitimate? *PC World*, 28(3), 23-25.
- Sulli, J.D. (2004), "Choose your eBook readers", *Writers-Publish: the information for new writers and publishers*, available at: www.writers-publish.com/ebook-readers.html
- Swan, K. (2003). Learning effectiveness: What the research tells us. In J. Bourne & J. Moore
- Tedd, L.A. (2004), "Ebook development in UK higher education: an overview", *Unesco Interactive Workshop on Ebooks, Hotel Atria, Bangalore, September 16, 2004: a report*, available at: www.vidyanidhi.org.in/ebook/html/report.pdf.
- Tomlinson, B. (2003) *Materials Evaluation*. In Tomlinson, B. (ed) (2003) *Developing Materials for Language Teaching*. London and New York: Continuum. too). *Colorado Libraries*, 27(3):46-48.
- Towle, G., Dearnley, J. A., & McKnight, C. (2007). Electronic books in the 2003-2005 period: Some reflections on their apparent potential and actual development. *Springer Science & Business Media*, 23(1), 95-104. University project. *Collection Building*, 28(4), 146-149.

- Towle, G., Dearnley, J. A., & McKnight, C. (2007). Electronic books in the 2003-2005 period:
- Urs, S.R. (2004), "Unesco Interactive Workshop on Ebooks", Hotel Atria, Bangalore, September 16, 2004: a report, available at: www.vidyanidhi.org.in/ebook/html/report.pdf.
- Williams, E. (2011). Copyright, e-books and the unpredictable future. *Publishers*
- Woody, W. D., Daniel, D. B., Baker, C. (2010, in press). E-books or textbooks: Students prefer textbooks, *Computers & Education*. doi:10.1016/j.compedu.2010.04.005
- Zell, H. M. (2013). Print vs. electronic, and the 'digital revolution' in Africa. *The African Book Publishing Record*, 39(1), 1-19.

- ii. An electronic device that has books loaded unto it. []
- iii. A book-length publication in digital form, readable on computers or other electronic devices. []

8. Do you read e-books? Yes [] No []

9. If no state reason(s)

- i. Interested but do not have time to read it. []
- ii. interested but do not have a device to access it []
- iii. interested but I am not permitted to use an e-book /related reading devices []
- iv. others (specify)-----

10. If yes, what kind of e-books do you read?

Fiction (novels) [] Textbooks [] Religious books []
 Biography [] Supplementary readers []

11. Origin of e-book you have read

- i. Western []
- ii. Produced in Africa []
- iii. Produced locally in Ghana []

12. Are they readily available to you? Yes [] No []

13. If yes, how do you get them?

I buy on internet [] I download free on internet []

They are already installed on the reading device I use []

I borrow and read from others []

14. If you buy, how do you pay for them? Cash [] Credit Card []

Mobile Money [] Money Transfer [] Other (please specify).....

15. Where do students have access to e-books?

At home [] During school session [] After school [] At internet cafes []

Other (please specify)

16. How often do you read e books?

Everyday [] Weekly [] Monthly [] Fortnightly []

17. Where or from what institutions do you buy from?

.....
.....

18. Why do you read e-books? For education [] for information []

For inspiration [] For entertainment [] for academic work []

For personal development [] Other (please specified)

19. What device do you use to read the e- books?

Kindle [] Ipad [] Desktop [] Laptop [] Smart
phones [] Other (please specify).....

20. Do you own the reading device? Yes [] No []

21. If yes, was the device: Expensive [] Affordable []

Expensive Gift []

22. What influenced your choice of your reading device? (Tick as many options that represent your choice)

Cost [] Portability [] Brand [] Prestige/Image []

Storage capacity [] Other (please specify).....

23. Does your school have a library? Yes [] No []

24. If yes, does it have internet connectivity to enhance access and use of e-books?

Yes [] No []

25. Do you use this facility? Yes [] No []

26. If you do, can you please state what you use it for?

.....
.....

27. If no, give reason(s)?

.....
.....

28. What do you prefer? E-books [] printed books [] both []

29. Give reason (s) for your choice.

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.....

30. In what way would you want or can you suggest ways to make e-books more

a. Available

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b. Accessible

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Affordable.....

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