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**A COMPARATIVE STUDY ON THE ROLE OF DIGITAL MEDIA AND PRINT MEDIA IN ENHANCING
LITERACY AND READING CULTURE IN AFRICA**

**A STUDY COMMISSIONED BY ADEA WORKING GROUP ON BOOKS AND LEARNING MATERIALS
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EXECUTIVE SUMMARY

This report was commissioned to examine the general context of literacy and reading culture in Africa while focusing on the contribution of printed books and digital materials. It explores their challenges and suggests interventions that optimize reading of printed books and digital content to improve literacy for a better reading culture in Africa both in international and national languages.

The research draws attention to the fact that as the number of printed books is expanding to reach a variety of audiences, with a range of topics and knowledge; electronic publishing (e-pub) is equally expanding rapidly. The two options are now available to publishers and the choice of a publisher will depend on a number of factors such as the cost, objectives and the prevailing circumstances. Numerous reports indicate that many pupils and students go through primary and secondary school without acquiring sufficient reading skills that can help them secure a good future in the world of work, which subsequently culminate into National Development.

According to UNESCO (2015), literacy is a fundamental human right and the foundation for lifelong learning. A literate community is a dynamic one that exchanges ideas and engages in debate as opposed to illiteracy which is an obstacle to a better quality of life, and can even breed exclusion and violence. Africa still experiences low literacy levels and poor reading culture despite the availability of printed books and digital content.

Since the year 2000, literacy rates for adults have improved; reaching 85% globally but sub-Saharan Africa and South and West Asia have the lowest rates. The global literacy rate for all males is 90 % and the rate for all females is 82.7 %. The rate varies throughout the world with developed nations having a rate of 99.2%, South and West Asia having 70.2% and Sub-Saharan Africa having 64% (UNESCO, 2015). Over 75% of the World's 781 Million illiterate adults are found in South Asia, West Asia and sub-Saharan Africa and women represent almost two thirds of all illiterate adults globally.

The report recommends that since technology will not replace reading in the near future, it is imperative to use the technology to enhance it. Reading on paper will always remain important and enjoyable and this means that the printed book will never lose its value and importance. It is fundamental that parents, teachers and other stakeholders come together to cultivate and nurture a love of reading especially among children and assist in making reading a lifetime habit. Publishing houses are encouraged to keep up with technological developments and produce content that meets the needs of readers, specifically addressing their ever-changing demands while harnessing the value of printed books.

ACCRONYMS

ABC	African Books Collective
ABPR	African Book Publishing Record
ADEA	Association for the Development of Education in Africa
APNET	African Publishing Network
APR	African Publishing Review
ASCII	American Standard Code for Information Interchange
BDC's	Book Development Councils
BPNN	Bellagio Publishing Network Newsletter
E-PUB	Electronic Publishing
ESL	English as a Second Language
HTML	Hypertext Markup Language
ICT	Information Communication Technology
KBC	Kenya Broadcasting Corporation
KCPE	Kenya Certificate of Primary Education
KCSE	Kenya Certificate of Secondary Education
MDGs	Millennium Development Goals
MLIT	Mobi-Literacy
NPA's	National Publishers Associations
OER	Open Education Resources
OLPC	One Laptop per Child Foundation
PDF	Portable Document Format
POD	Print On Demand
SDGs	Sustainable Development Goals
SSA	Sub-Saharan Africa
TESSA	Teacher Education for Sub-Saharan Africa
TTS	Text-to-Speech
TVET	Technical and Vocational Education and Training
ZIBF	Zimbabwe International Book Fair

TERMS OF REFERENCE

- 1) Analyze the general context of literacy and reading culture in Africa
- 2) Find out the extent of the contribution of printed books and digital materials to literacy and reading culture in Africa
- 3) Explore the challenges of printed reading materials and digital content in Africa
- 4) Suggest interventions that optimize reading of printed books and digital content to improve literacy for a better reading culture in Africa both in international and national languages

SCOPE

Literature was reviewed across Africa with examples from specific countries which give a representative summary of what the situation is like as far as usages of printed and digital materials are concerned. Opinions were sought from experts located in Kenya.

METHODOLOGY

Document review, Internet sources and short interviews with experts, especially those who have been involved in research, developing and disseminating using both print and digital materials were used to obtain information for the study. Successful experiences have been documented to assist stakeholders adopt the best practices of using both print and digital materials across Africa.

PROLOGUE

I'm excited for my reading challenge. I've found reading books very intellectually fulfilling. Books allow you to fully explore a topic and immerse yourself in a deeper way than most media today. I'm looking forward to shifting more of my media diet towards reading books.

- *Mark Zuckerberg, January 3, 2015*

This is the point. One technology doesn't replace another, it complements. Books are no more threatened by Kindle than stairs by elevators.

- *Stephen Fry March 11, 2009*

We are the children of a technological age. We have found streamlined ways of doing much of our routine work. Printing is no longer the only way of reproducing books. Reading them, however, has not changed.

- *Lawrence Clark Powell*

INTRODUCTION

This study compares print and digital publishing with a view to establishing the extent of contribution of each approach in enhancing literacy for a better reading culture in Africa. The digital versus print debate has been raging for a while. Before publishers choose which model to use between the print and digital, they should fully understand the pros and cons of each. Unfortunately, reading has not received much attention in many African countries. It is often emphasized at school levels, where children attend school in order to gain the three “Rs” (Reading, Writing & Arithmetic).

According to Kimanuka (2015), the biggest hurdle to establishing a reading culture in Africa is neither access nor infrastructure. Historically, the reading class has been an elite group associated with academia, religious or regime hierarchies. There is a challenge to create a culture of reading books by educating parents about the importance of reading books to their children. The same author points out that there is no doubt that reading is an essential tool for lifelong learning and that it is important for everyone to develop the rudiments of reading and the culture of reading regularly, so as to survive in our increasingly challenging world.

However, with technological developments, reading habits are changing as technology is slowly but surely taking a steady control over individual lives and reading habits are in serious jeopardy.

LITERACY IN AFRICA

UNESCO (2012) emphasizes that literacy has never been more necessary for development; it is key to communication and learning of all kinds and a fundamental condition of access to today’s knowledge societies. With socio-economic disparities increasing and global crises over food, water and energy, literacy is a survival tool in a fiercely competitive world. Literacy leads to empowerment, and the right to education includes the right to literacy – an essential requirement for lifelong learning and a vital means of human development and of achieving the Sustainable Development Goals (SDGs).

Kimanuka (2015) argues that there is a challenge to create a culture of reading books by educating parents about the importance of reading books to their children. The same author points out that there is no doubt that reading is an essential tool for lifelong learning and that it is important for everyone to develop the rudiments of reading and the culture of reading always so as to survive in our increasingly challenging world. Africa still experiences low literacy levels and poor reading culture despite the availability of printed books and digital content. But why does Africa experience these obstacles? According to Kimanuka (2015), the biggest hurdle to establishing a reading culture in Africa is neither access nor infrastructure. Historically, the reading class has been an elite group associated with academia, religious or regime hierarchies.

Literacy is so powerful that it may well be the most significant factor that determines successful participation in modern society (Headlam, 2005). Literacy is a critical component of the world development agenda. Moscardini (2015) explains Sustainable Development Goal number four by saying that it’s about delving further into associated educational issues and improving the quality of education with teacher training, providing educational materials, ensuring school children don’t go hungry and improving sanitation in schools. Literacy rates for 15-24 year olds as measured by the United Nations are a key indicator (UN Millennium Project, 2006). Reading achievement goals, especially the literacy indicators referenced by the MDG’s, are often measured in terms of reading comprehension (Pressley, 2006; Schwartz, 1984; Farr & Carey, 1986). Strategies for increasing reading comprehension, key to the advancement of literacy, have a broad base of scholarship in the United States (where government policies have sought to increase student reading capacity), and also across the world where scholars have sought to identify techniques and best practices for advancing literacy (International Reading Association, 2010). (Plonski: 2010)

According to UNESCO (2013), in 2011, the global adult literacy rate for the population aged 15 years and older was 84%. Two regions, Central and Eastern Europe and Central Asia, were at or near universal literacy, with adult literacy rates of 99% and 100%, respectively. North America and Western Europe is also assumed to be near universal adult literacy. In East Asia and the Pacific (adult literacy rate of 95%) and Latin America and the Caribbean (92%) at least nine out of ten adults were able to read and write. However, the average for Latin America and the Caribbean conceals lower literacy rates in the Caribbean, where the adult literacy rate was only 69% in 2011. Adult literacy rates were also below the global average in South and West Asia (63%) and sub-Saharan Africa (59%), where more than one-third of adults could not read and write.

The development of a reading culture ideally starts at an early stage of childhood and gets nurtured up to adulthood with the support of cultural tools. However, studies conducted in many African countries (eastern, southern and western Africa) demonstrate that the majority of children come from households where they hardly ever see adults reading and some of them are barely literate. Even within literate households, adults do not often practice reading for lack of reading materials (Rosenberg, 2003; Magara & Batambuze, 2005; Kachala, 2007; Commeyras & Mazile, 2011; Ruterana, 2012). According to Dempsey (2010), before making their children good readers, parents need to read themselves and set an example for their children. Indeed, it has been said that reading to a child even for 15 minutes each day is all they need to start off with a good foundation in their quest for literacy. Therefore, a reading culture assumes that reading is part of everyday life and that people practice reading at home and during their leisure time as a matter of course. Thus reading becomes a habit that will be hard to drop. 'Reading will be like eating peanuts, where you don't feel like stopping' (Dempsey, 2010).

CONTRIBUTION OF BOOKS, BOOK PUBLISHING AND LIBRARIES TO LITERACY AND DEVELOPMENT OF READING CULTURE IN AFRICA

Brief History of Print Publishing

According to Bastek (2012), the introduction of printing created a medium for communication like no other. "Until the advent of radio it was the great means of communication" (Chappell 3). As paper became more widely available in the thirteenth century, writing became more prominent. When the need to reproduce, texts became greater, Gutenberg's movable type came about followed by a variety of other printing processes. By 1500 somewhere around 12,000,000 books in 35,000 editions had been printed. The world's first newspaper was published in Germany in 1609 (Chappell 127). But with such volumes suddenly being distributed, regulations were made to prohibit unrestrained publishing in 1637 when England limited the number of print shops and foundries by decrees. "In the cradle years of printing, opposition came chiefly from organized calligraphers and illuminators whose livelihood was threatened. The content of manuscripts was seldom in question; most were classics or ecclesiastical writings and many were in Greek or Latin, which made them inaccessible to all but a few scholars and churchmen. But with the coming of the seventeenth century, printing was being viewed as a threat to established power, both religious and political" (Chappell 112-113). Though people like John Milton spoke out in favor of freedom of press and against requiring official censoring before publication of any text, governments' fear of political unrest kept even the first American newspaper from continuing after its first issue. Attempted by Benjamin Harris in 1690, the governor and council of the American colony declared the paper was not authorized and ended further production.

Book donations to African countries

Agenda 2063 of the Assembly of the African Union's Call for Action section 67 (b) states that for African states to catalyze an education and skills revolution and actively promote science, technology, research and innovation, to build knowledge, human resources, capabilities and skills for the African century, they should:

- Expand universal access to quality early childhood, primary and secondary education;
- Expand and consolidate gender parity in education,

Strengthen the Technical and Vocational Education and Training (TVET) through scaled up investments, the establishment of a pool of high-quality TVET centers across Africa, greater links with industry and alignment to labor markets, with a view to improve the skills profile, employability and entrepreneurship of especially youth and women, and closing the skills gap across the continent;

- Build and expand an African knowledge society through transformation and investments in universities, science, technology, research and innovation; and through the harmonization of education standards and mutual recognition of academic and professional qualifications. Establish an African Accreditation Agency to develop and monitor educational quality standards across the continent.
- Strengthen the Pan African University, build the Pan African Virtual University, and elevate Africa's role in global research, technology development and transfer innovation and knowledge production.

In an effort to address issues of global education and literacy, seven major donor organizations from the West, and a host of smaller organizations, provide millions of dollars in donated English-language text and library books annually to the African continent (Sources of Donated Books, 2005). To some, this is a reflection of colonialism and a misguided belief that English-language books and instruction are synonymous with education (Prah, 2003; Brock-Utne, 2001a, 2001b). To others, English-language textbooks are a cost-effective way for the West to assist African nations in meeting their educational goals (Books for Africa, 2010; Crystal, 2004).

Need for Text and Library Books in Africa

According to Plonski (2010), studies in Africa have confirmed the importance of textbooks on reading achievement. For example, the World Bank undertook two large-scale studies (1987, 2002) involving over 89 education projects across Africa. The findings confirmed the cost-effectiveness and importance of localized and customized reading materials in increasing literacy skills in school settings. According to one report there is a pressing need for textbooks of all types in Africa, where, next to a good teacher, "a good textbook is the most effective medium of instruction" (World Bank, 2002:5). Fehrler, Michaelowa, and Weber (2007) confirmed these findings in a different study of 22 Sub-Saharan African countries. This study confirmed the importance of textbooks and school libraries. Additionally, textbooks were shown to be extremely cost effective in the results of a complementary analysis of these same 22 Sub-Saharan African countries (Michaelowa & Wechtler, 2006). The analysis concluded that textbooks, teacher guides, and wall charts were relatively low-cost inputs with relatively high returns in terms of student achievement. Michaelowa and Wechtler (2006) found that by providing one textbook to every student in a classroom, literacy scores increased by 5-20 percent. A ten percent increase in literacy scores also occurred when a school or classroom library was present.

CONTRIBUTION OF INDIGENOUS PUBLISHING TO LITERACY AND READING HABITS IN AFRICA

According to Darko-Ampem (2000), African publishing industry can be said to have registered over 500% growth within the last three decades, judging by the increase in the number of book publishers on the scene. The same author observes that, in 1983, Africa was recorded to have 818 publishers both commercial and institutional but currently the figure is well beyond the range of 4000, of which 50% are commercial publishers (Makotsi, 1998:1). Faye (1998) observes that since 1987 we have witnessed spectacular growth in children's publishing, in both European and African languages. In Kenya, for example, the production of books for young people from one publisher leapt from five titles in 1988 to 127 in 1998. One study showed that in Kenya,

Uganda and Nigeria production has notably increased in the last ten years. At the same time as the growth in the number of titles, there is a significant increase in print-runs, on average 3000-5000 copies per title.

The same author also states that as a result of new thinking on indigenous publishing coupled with the need for new approaches to tackle the many problems facing African book industries, there is substantial increase in research and publications on African publishing. The 1984 volume of Zell and Lomer's bibliography on African publishing listed a total of 658 references compared to the volume of 1996 which listed over 2,200 citations. Developments that have contributed significantly to autonomous publishing in Africa are the Noma Award for Publishing in Africa; the first Zimbabwe International Book Fair (ZIBF) held in 1983; and the launching in 1989, of the Oxford-based African Books Collective (ABC). Others are the establishment of the Bellagio Publishing Network and the African Publishing Network (APNET) respectively in 1991 and 1992; and the publication of the African Publishing Review (APR), the Bellagio Publishing Network Newsletter (BPNN), alongside the quarterly African Book Publishing Record (ABPR). Book publishing is strategic in the development of the African continent. Without books, active literacy is near impossible. Illiteracy blocks education and lack of education stands in the way of development. Zell & Lomer (1996:1) assert that: publishing is closely linked to culture and to education and these are deeply rooted in national goals. It is simply not advisable to rely on imported books. The key concepts here are autonomy and indigenization.

Publishing efforts in Sub-Saharan African countries have been aimed at reducing illiteracy, improving the content of educational materials and enhancing the self-image of the region. In the face of countless problems facing the industry there has been significant growth during the last three decades. Among others, the notable strides made in development of African publishing and its contribution to improvement of literacy and reading culture are: the establishment of national book development councils in various African countries; the institution of book fairs; creation of national publishers' associations, the Noma Award, and the roles played by the African Books Collective and the African Publishing Network. Additionally, the activities of international organizations like the Bellagio Publishing Network, UNESCO, and the Book Aid International that support these efforts have added impetus to book and publishing development and increased literacy and reading habits in Africa especially in English-speaking Sub Saharan Africa over the last three decades. According to Darko-Ampem (2000), the great gains made so far need to be sustained and taken further through the establishment of National Book Policies (NBPs).

Darko-Ampem (2000) concludes that National Publishers' Associations (NPA's) and Book Development Councils (BDC's) must forge closer ties in order to facilitate a more efficiently coordinated literacy and information campaign. This is because the book industry is the bedrock in the promotion of literacy and education in African countries, and the book itself is central to education and development. Quoting Altbach (1992:23), Darko-Ampem (2000) reiterates that "the responsibility is considerable, the challenges are substantial, but the endeavor is worthwhile since publishing is at the centre of the intellectual and educational development of the Third World".

CHALLENGES OF READING PRINTED MATERIALS IN AFRICA

In efforts to address issues of global education and literacy, seven major donor organizations from the West, and a host of smaller organizations, provide millions of dollars in donated English-language text and library books annually to the African continent (Sources of Donated Books, 2005). To some, this is a reflection of colonialism and a misguided belief that English-language books and instruction are synonymous with education (Prah, 2003; Brock-Utne, 2001a, 2001b). To others, English-language textbooks are a cost-effective way for the West to assist African nations in meeting their educational goals (Books for Africa, 2010; Crystal,

2004). Plonski (2010) analyzed this topic and provides information regarding the extent to which English-language text and library book donation programs can potentially increase literacy levels in rural Africa.

Multinationals Dominate Book Publishing

Darko-Ampem (2000) states that multinationals are bitterly resented when they move into countries where the local publishing industry is struggling for viability. The multinationals are then accused of stifling the development of a genuinely national literature. This concern is captured thus: In Africa, concerns loom large about how local books are to be published in an environment in which the economic and political interests of multinational firms dominate. Multinationals enter a market to earn profits. They are basically unconcerned with ensuring that particular kinds of books are published, and they care little about local booksellers or authors. (Altbach & Teferra, 1998, in Darko-Ampem, 2000)

In South Africa, the small local publishers that sustained independent publishing during the apartheid years have had problems competing with the multinationals, and many have either been bought by the multinationals or have gone out of business. Rupert Murdoch made a business decision not to publish a book in Britain that would arouse the ire of China. If such decisions can be made in Britain, political interference in smaller and weaker markets, such as Africa, would cause Murdoch no worry. The opening of a Borders megastore in Singapore is another example of the role of multinationals in the book trade. Singapore, despite high per capita income and universal literacy, has not been well served by bookstores. Borders was an immediate success, and will very likely change the face of Singapore bookselling. (Altbach & Teferra, 1998, in Darko-Ampem, 2000).

Makotsi and Nyariki's (1997) study on African book trade potentials and problems, reported that where book imports are financed by external donors such as the World Bank, procurement preferences are often awarded to multinational companies whose titles are tailored to the needs and interests of their home countries. These examples tell us that book industries in Africa, as well as in other parts of the developing world, must constantly be aware of international trends. However, on a positive note, the same author notes that the multinationals also bring access to capital, easy distribution channels to other countries, and economies of scale into the equation. They have contributed to educational publishing and in some cases to the training of local staff.

Faye (1998) assigns various reasons to the progress made in African publishing. Among them the creativity of African publishers; increase in state purchase of books for schools and libraries; support to both publishing and book acquisition by development agencies. He is quick to add that there remain difficulties. The litany of problems facing the publishing industry in Africa is not peculiar to Africa. Success case histories exist in Asian and Latin American countries which had to start their publishing from scratch. It is to be seen whether Africa will exploit the many opportunities presented by illiteracy, book scarcity, suppressive environments, and poor reading habits among other factors. Notwithstanding, progress should be made within the international context of publishing which is dominated by multinationals, technology driven, and sustainable with less dependence on donor funding.

Piracy and other Violations of Copyright Law

Darko-Ampem (2000) states that issues relating to the piracy of knowledge products, including books, were at the heart of a highly visible trade dispute between China and the United States (Altbach, 1998:3). Copyright, for example, emerged in the seventeenth-century England as a means of protecting authors and publishers of books. The concept has broadened to include other knowledge products, including computer programs, films,

and others. It has remained evasive in the face of current new technologies, especially the Internet, and emerged as one of the most important means of regulating the international flow of ideas and knowledge-based products. The creation and ownership of knowledge products are of increasing importance because of the centrality of information and knowledge to postindustrial economies. According to the same author, books remain an important element of knowledge creation and ownership. Yet the publishing industry is characterized by considerable inequalities with much of the world and Africa being peripheral to the major centers of publishing found in Europe and North America. With the exception of Egypt, South Africa, and to a lesser extent Nigeria and Kenya, African nations produce few books, and their publishing industries are largely limited to textbooks for schools, which are more vulnerable to piracy and plagiarism than other publications. (Darko-Ampem, 2000)

Cheap Reprographic and Computing Technologies

The impact of new technologies--reprography and computing is huge. The costs of photocopying machines and of making copies have declined steadily since the 1970s. Reprographic technology has been harnessed for printing resulting in significant economies in printing costs, especially for limited print-runs. Recent reprographic advances, linked to computer composition, permit greater economies in the production of printed materials. Presses based on advanced photocopy technology can economically print small numbers of books very quickly and inexpensively. Using reprographic technology for printing has been a considerable advantage to publishers, and has permitted publishing to be done on a small scale. This has assisted publishers in countries and regions, and in languages, that have only small markets. (Darko-Ampem, 2000).

Wafawarowa (2007) adds to the challenges of book publishing in Africa by stating that compared to the developed world, the African and the developing world's book publishing industry is too dependent on textbook publishing and procurement by the state, the World Bank and donor agencies. The findings of the APNET/ADEA research of 2000, where more than 95% of all books published are textbooks still rings true today. The very little trade publishing that happens outside education publishing is often subsidized by education publishing and the procurement is through state institutions like public and school libraries. While education publishing has been prioritized because of the urgency of education after independence in many African countries, the shortcomings of education publishing are as follows (Wafawarowa: 2007):

- Too dependent on the state, the world bank and donor funding which are by their nature seasonal temporary and unsustainable
- Limits the creativity of authors and publishers due to the specificity of curricula
- Do not enhance the free flow of books between geographical and cultural boundaries due to the idiosyncrasies of curricula
- Do not enhance lifelong habits of reading due to the instructional and institutional nature of their content.
- Do not contribute significantly to the development of the book industry as a sustainable commercial and cultural sector
- Obsessed with differences in dialect and strict curriculum requirements.

The challenges facing general book publishing in Africa, according to Wafawarowa (2007) include: limited economies of scale that are a result of; linguistic fragmentation at national and continental level; little disposable income; low literacy levels; preference by African authors to be published outside the continent. The same author suggests that the reasonable economies of scale that are presented by a shared cultural heritage; shared languages; common socio-economic issues and a relatively large population are difficult to

exploit due to: vast discrepancies between national currencies; huge trade tariffs between countries; significant disparities between national production quality and production standards; inadequate general economic infrastructure; high distribution costs against the material value of books as dense cargo and; stifling VAT and tax on books in different countries. Wafawarowa advises that if Africa and the developing world are to create dialogue with the rest of the world along the UNESCO protocol on the Free Flow of books, explore greater creativity through books, engender a culture of reading among its population and develop and sustain the book sector, then it is imperative to develop the general publishing sub-sector. It is clear from the above that for the trade book publishing sector to be sustainable and for any publisher to survive in this industry there is critical need to harness innovative ways of tapping into the economies of scale and overcome the trade barriers. Developments in Information and Communication Technology (ICT) have played a critical role in overcoming some of the barriers. (Wafawarowa: 2007)

ADVANTAGES AND DISADVANTAGES OF PRINT PUBLISHING

Although technology has crept into our businesses and our homes, it has yet to take over our entire being. Bastek (2012) has the following arguments concerning advantages and disadvantages of print publishing:

Reaching your Audience

One of the significant advantages to print publishing exists in distribution. While printing, costs are significantly higher than those involved in publishing on-line because of actual paper and printing costs, the advantage of print publishing is actually placing text in the hands of your audience. In cases of on-line publications, one can only direct someone to a site. The chances of them sitting down in front of the computer, looking up the publication, and reading from it can only be motivated by the individual to find the publication or stumble across it while searching the Web. However, the time it takes to get print into the hands of your audience is also an important consideration. With the accessibility of information on the Web, something like a newspaper's current events can easily be updated and made readily available to the public at a moment's notice.

One final benefit is that printed books are actually better for doing research and taking notes. Printed books help long-term memory recall. Scientists, who experimented with students reading digital versus printed text, found that those who read digital text had to read and reread the material multiple times before understanding the material as well as the students who read the print text. With the click of a button, e-readers make it easy to get distracted and put your reading material down. The constant scrolling, and the inability to physically highlight the text does nothing to benefit your long-term memory (Riordan, 2013).

Marketing

Writing on her blog, Dana Lynn Smith, The Savvy Book Marketer, discusses a number of advantageous methods used in marketing printed books. She asserts that bookmarks are great for distributing at book fairs and events and to bookstores that stock your book. Posters may also be useful for events and bookstores. Libraries like to receive posters and bookmarks for children's books. If you do a lot of speaking or other events where you're selling books, consider having a retractable banner made. She argues that if you meet people at speaking engagements, networking events, or other venues, you will need business cards. Two-sided business cards cost a little more, but you can showcase your book on one side and your contact information on the other. If you need business cards only, occasionally, you might include your contact information on your bookmarks so they can double as business cards.

Postcards are especially effective for announcing the publication of a new book, but it is important to have a good mailing list before ordering them. You can send postcards to friends, family, and business contacts, and

you may also be able to rent mailing lists for your specific target market or exchange lists with a colleague. If you are a nonfiction author with other products and services to sell, you might benefit from using promotional items like custom printed pens or sticky notes.

If you sign on with a big or mid-sized publisher, you may expect to get far more exposure than you could ever get on your own without a herculean effort. Publishers are well connected and sometimes owned by the big media conglomerates. They can position you well to garner respected book reviews, media interviews, book signings, occasional tours, award nominations and wins, and other promotional opportunities. A big publisher can make sure your book is part of the library, bookstore, and general publishing infrastructure to place you in the most optimal position for public exposure. You will often be encouraged to have your own promotional website, to blog, and to do some of your own promotion using social media, but this may be restricted. (Prunkl, 2014)

Reader Capabilities

Printed publications have the advantage of creating a design based on whatever capabilities the publisher has with regard to fonts, layout, photos and overall size of the publication. Once a printed publication is in the hands of the reader, the only requirements remain are for readers to be able to see and to read. This is not necessarily so easy with on-line publications since they are restricted by technological limitations of the user's screen and memory capacity.

Editing

Print formats pose a problem in itself, with a text that must be finalized by the printing press on paper; the final product is relatively unchangeable. Deadlines are created, met and taken to press. Once the proof is approved, the machines do all the work without comprehending any possible major or minor errors in the text. When the press and bindery are done, there's no turning back. If you have overlooked any details, it is up to your readers to notice. But with on-line publishing, there is a much greater amount of ease in editing. If a date is wrong, a word misspelled or tense out of place, a simple correction can be made to the file and updated on the Web.

Time

Along the same line as editing, another disadvantage to print publishing is the time that it takes. Not only does the writing and editing take time, but time must also be allotted for the printer, for the one shot deal. Though online publications take quite a bit of time to edit and keep-up, they hold that option for change.

Standards

Though online publishing is growing in importance, publishing in print continues to maintain prestige as an authority and a viable source, because the idea remains that anyone can put anything on the Web, and print editors and publishers are held to a tighter standard and will only print what is worthwhile or valuable.

Submissions

For print publishers, receiving submissions varies depending on writers' knowledge of the publication. For many book publishers, they have too many submissions coming in.

Multi-Sensory Experience

On his LinkedIn page, Greg Krehbiel writes that the tactile sensation of the book in your hand gives you a lot more feedback than you think. The thickness of the pages you have read versus the thickness of the pages yet

to read; the position of the words on the page (left or right, top or bottom). Your mind makes a record of your location that is based on more than just what you are seeing.

Studies have shown that people retain more of what they read in print. This is probably because of this multi-sensory experience explained in above, including even the texture and smell of the paper. Memories are closely associated with other senses. If you want to review a book or blog about it, it is so much easier to highlight things, attach a sticky note, scribble in the margins, and it is very easy to find those notes later. The disadvantage, of course, is that you then have to type them.

CONTRIBUTIONS OF DIGITAL MATERIALS TO LITERACY IN AFRICA

Understanding the E-Book

The term e-book is used to describe many different kinds of digital books. A simple definition of an e-book is an electronic book or a book that is in a digital format that is read on an e-book reader or application (Clay, 2012). Unlike other forms of digital textual content, generally the e-book follows the same conventions as a printed book. Comparison of electronic and printed copies of the same publication reveals few, if any, differences. The structure and content is usually identical, with the same number of chapters and the same text. The main differences are in the formatting and the display of pictures and diagrams. Formats have largely evolved alongside the development of e-book readers. At the same time, application developers and publishers have employed different formats to operate on various platforms. From rudimentary ASCII to more advanced forms of HTML, PDF and EPUB, the increasing technical sophistication of e-books has produced an expanding range of formats.

HISTORICAL BACKGROUND OF E-BOOKS

Clay (2012) claims the history of e-books is disputed, though the start of Project Gutenberg in 1971 can be seen as the earliest beginnings of a collection of what we now know as e-books. The Sony Librié in 2004 was the first mainstream device to utilize electronic paper for e-books. Sony followed the Librié with other e-book readers and worked with publishers to ensure that consumers had access to online stores selling e-books. The vast majority of these e-books were popular titles and few academic texts. In 2007 there was a revolution in the use and delivery of e-books with Amazon's release of the Kindle in the United States. A different kind of e-book reader, Kindle was designed to work seamlessly with the Amazon Web site, allowing users to browse, buy and download e-books with this dedicated e-reader device. Along with a free lifetime 3G connection, the Kindle provided easy access to a large online book store without the need for a separate computer. A similar revolution occurred in 2010 with the release of Apple's iPad, which provided a device for accessing e-books using a variety of proprietary and Web-based apps. Apple released its own iBooks app and iBookstore to allow iPad users to buy and read e-books. In June 2012 Amazon went on to release a Kindle App for the iPad, allowing Kindle users to read their Kindle books on the iPad. This Kindle App also opened up the wealth of e-book content on the Amazon site to Windows, Mac, Android and iOS users.

Alongside the growth of the e-book reader, publishers have been developing platforms for academic and public libraries, where collections of e-books can be accessed both on-site and off. These platforms enable users to read e-books and they can also allow users to copy and even print excerpts as well. With some platforms, books can be transferred to mobile devices or to dedicated e-book readers (Clay, 2012).

APPLICATION OF ICT IN PROMOTING LITERACY IN AFRICA

According to a UNESCO report *Information and Communication Technology (ICT) in Education in Sub-Saharan Africa: A comparative analysis of basic e-readiness in schools* (2015), information and communication technology

(ICT) plays an ever-important role in increasing economic productivity through digital economies, enhancing the delivery of public and private services and achieving broad socio-economic goals in education, health care, employment and social development. As a result, countries are advancing ICT policies to underpin growth in a variety of socio-economic sectors and help steer development and competition. In the last few decades, several African governments are prioritizing the use of ICTs in education, in order to achieve critical strategic developmental objectives as well as enabling them to favorably compete with other countries on all fronts. The European Parliamentary Research Service (2015) adds that general literacy and digital skills across the population need to be improved in order for African countries to fully reap the benefits of the digitalization, and this is a more difficult challenge to tackle.

ICTs, especially mobile phones, have revolutionized communications in Africa. The explosive growth of mobile phones in Africa over the past decade demonstrates the appetite for change across the continent (Yonazi *et al*, 2012). They continue by stating that in the year 2000 there were fewer than 10 million fixed-line phones across Africa, a number that had accumulated slowly over a century, and a waiting list of a further 3.5 million. With a penetration rate of just over 1 per cent, phones were to be found only in offices and the richest households. But the coming of the mobile phone has transformed communications access. By the start of 2012, there were almost 650 million mobile subscriptions in Africa (A. T. Kearney, 2011), more than in the United States or the European Union, making Africa the second fastest growing region in the world, after South Asia. In some African countries, more people have access to a mobile phone than to clean water, a bank account or even electricity. Mobile phones are now being used as a platform to provide access to the internet, to applications and to government services (Yonazi *et al*, 2012).

Sub-Saharan Africa (SSA) has undergone a veritable mobile revolution in the past decade (European Union, 2015). It is a region with an often inexistent or unreliable electricity supply, with very few landlines and limited postal services, and where an important share of the population lives in remote and rural areas. Mobile communications have seen a huge boom there, with the region having one of the highest growth rates in the world. Mobile phones spread quickly, not only addressing the huge demand for communication, but also substituting for products like bank accounts, newspapers, entertainment, medical advice, business and trade information and training, to which many people previously had no access.

Currently there are 386 million unique subscribers to mobile telephony services in SSA, representing a penetration rate of 41%. However, given the large share of very young people in SSA's population, mobile usage among persons older than 15 years is actually much higher – around 70%. The percentage of the population having access to a mobile phone is already bigger than the share of population having access to electricity or sanitation facilities. The African continent as a whole ranks last among the regions of the world in terms of internet access and usage, with the penetration of fixed broadband subscriptions as low as 0.5%. Most internet access takes place on mobile phones. Across SSA, by mid-2015, 200 million individuals were accessing the internet through mobile devices, a figure that is expected to double by 2020. However, 60% of the population will still lack access to internet by that date. The rapid adoption of mobile internet will be encouraged by the extension of mobile broadband connections (from 24% of the connection base in 2015 to 57% in 2020) and by falling prices for mobile devices; in 2014, 47% of Sub-Saharan users considered mobile internet still too expensive, but prices have been decreasing, with some new products being targeted specifically at the region. As a result, smart phone use is expecting to increase considerably from 160 million users in 2015 to 540 million in 2020. Making mobile services more affordable and extending coverage to rural areas, where a significant share of the population lives, are challenges that still need to be tackled (European Union, 2015).

According to Yonazi *et al* (2012), increasingly, investment in ICT is being seen by education institutions as a necessary part of establishing their competitive advantage, because it is attractive to students and is also deemed essential by governments, parents, employers and funders of higher education. Benefit and impact, to the extent that they can be reliably measured, are more functions of how ICT is deployed than of what technologies are used. The growth of knowledge societies has placed increasing emphasis on the need to ensure that people are information-literate. ICT can facilitate a transition of the role of the teacher in the classroom into that of an instructional manager helping to guide students through individualized learning pathways, identifying relevant learning resources, creating collaborative learning opportunities, and providing insight and support both during formal class time and outside of contact time. At the same time, the emergence of the concept of Open Education Resources (OER) has led to growth in the collective generation and sharing of content by networked groups of people, and in the proliferation of technologies that enable cheap information-sharing and collaboration. ICT is reducing barriers to entry for potential competitors to traditional education institutions by reducing the importance of geographical distance, enabling potential new efficiencies in overheads and the logistical requirements of running education programs and research agencies, and expanding cheap access to information resources. As a result, there has been significant growth in the number of distance education programs in which teachers and students are physically separated, and in which teaching and learning take place by means of individual technologies or combinations of technologies. Mobile and personal technology platforms are increasingly seen as appropriate for services of all kinds. The capabilities of mobile and personal devices have grown, driven partly by the increasing availability of digital materials and applications.

OPPORTUNITIES IN USING ICT TO PROMOTE LITERACY IN AFRICA

Some of the opportunities in Africa, according to Yonazi *et al* (2012), include establishing an enabling policy environment, or reviewing what is in place to ensure sufficiency, where South Africa and Egypt are good examples of countries that have achieved significant progress in the integration of ICT in education through enabling policy environments, supported by appropriate institutional and regulatory structures. They illustrate that, where there has been significant scaling up of ICT integration into teaching and learning, implementation has been carried out through cross-sectoral collaboration between ministries of education and other sectors.

Widening access to ICT infrastructure and connectivity is another priority. It is important first to harness devices that teachers and learners already own. The proliferation of mobile phones has meant that more learners have access to ICT devices than ever before, offering opportunities in terms of sustainability and scalability (Yonazi *et al*, 2012). A number of pilot projects are testing the use of mobile phones to support educational activities and some, such as the Yoza and Math for Mobile projects in South Africa, are seeking to exploit this high level access to learning on an increasingly large scale. However, mobile phones may not be the most appropriate platform to address a particular educational need, and may present challenges of access, cost and usability. As technology costs decline further, other devices (such as laptops and tablets) are likely to become more affordable and accessible platforms for both teachers and learners. The ICT Integration in Primary Education (Digital Literacy project) in Kenya has been rolled out. The main aim of the project will be aligning integration of ICT into teaching and learning for standard one pupil in primary schools (KBCTV 2016).

Teacher, Student interaction

Today's students see and consume media in new ways. Their experiences outside school may differ markedly from those traditionally expected to promote learning, particularly where education is teacher and text book

centred. For example, it was noted that today's journalism and communication students are the "Google Generation" - a group of young people for whom the Internet has always been a reality (UNESCO 2008). Many do not accept that news and information should come from a daily newspaper or at set times from television and radio broadcasts. Rather, they expect to get information, news and entertainment when *they* want it and to share opinions, experiences and lifestyles through social networking sites. Their world is dynamic, exciting, and ease of use and access to the new media are highly motivating of participation. School students similarly engage with each other through social networks, often with little thought for possible consequences of publishing their activities in very public arenas.

According to Yonazi *et al* (2012), models of shared access to mobile devices, as well as those focused on teacher access, are more realistic from the perspectives of cost and support than one-to-one computer access. These devices can be moved around within schools, and can therefore be more easily integrated into classroom teaching. One-to-one computing strategies may be suitable for providing access to teachers. If they have laptops or notebooks, they can use these to engage in informal learning at their own pace, to source and develop materials, and to design and project lessons. This approach is being explored in countries including South Africa (Teacher Laptop Initiative) and Kenya (Laptops for Teachers Program). The increasing rollout of competitive fiber to Africa and within African countries and greater penetration of wireless and mobile platforms have expanded opportunities for connectivity and broadband access. South Africa and Kenya stand out as examples where a combination of sector liberalization and government investment in connectivity to education has worked.

The growth of Open Educational Resources (OER) and the communities around them provides a significant opportunity to improve access to and use of high quality educational materials, of which African governments and educators can take advantage. Developments include those, such as OER Africa and the Teacher Education for Sub-Saharan Africa (TESSA) Initiative, which are involved in promoting and supporting the creation and use of OER in Africa. The Thutong portal in South Africa, run by the Department of Basic Education, has resources on curriculum and examinations, teacher development, school administration and management. The Siyavula project in South Africa, founded in 2008, works with teachers to develop teaching and learning materials in collaboration and then share them through an open license agreement. Senegal has made considerable progress in developing digital learning resources. At the national level, the Ministry of Education has collaborated in the development of an education portal through which teachers can download learning resources and adapt them to local needs. The portal also provides a training space that allows teachers to take courses, participate in collaborative work and engage with peers and experts (Yonazi *et al*, 2012).

In the education sector, policymakers widely accept that access to ICT can help individuals to compete in a global economy by creating a skilled work force and facilitating social mobility (UNESCO 2015). They emphasize that ICT in education has a multiplier effect throughout the education system, by:

- Enhancing learning and providing students with new sets of skills;
- Reaching students with poor or no access (especially those in rural and remote regions);
- Facilitating and improving the training of teachers; and
- Minimizing costs associated with the delivery of traditional instruction.

The Mobile Revolution

With mobile devices increasing ubiquity in developing countries, Brown (2003) argues that it is timely to envision a future where the mobile devices play a pivotal role in education in developing countries. According

to Brown, while there are as many people using mobile technologies as there are opinions on how mobile technologies will impact on education; the majority agree that m-learning will play a major role in e-learning. Already, there are numerous applications for mobile technologies in education – from the ability to wirelessly transmit learning modules and administrative data, to enabling learners to communicate with lecturers and peers.

Donner (2009) in *Research Approaches to Mobile Use in the Developing World: A Review of the Literature* reviews 200 recent studies of mobile phone use in the developing world. He categorizes his research into three common themes, with one of them being Mobile Impact on Education. Donner states a good number of studies consider mobile devices as a resource for e-learning in Tanzania (Stone, Lynch, and Poole 2003) and Thailand (Whattananarong 2005). All argue that the mobile's portability, simplicity, and affordability make it a natural fit for education initiatives in places where PCs and internet connectivity may be scarce. Kumar *et al* (2010) argue that mobile devices like cell phones are a perfect vehicle for making educational opportunities accessible to rural children in places and times that are more convenient than formal schooling. They conducted a 26-week study to investigate the extent to which rural children will voluntarily make use of mobile devices like cell phones to access educational content. Their results show a reasonable level of academic learning and motivation. Koole (2009) emphasises that there is a tremendous scope for learning with mobile devices and establishes a framework to assist practitioners in designing activities appropriate for mobile learning.

According to Kam *et al* (2008) cell phones are increasingly adopted in the developing world, and an increasing fraction of these phones feature multimedia capabilities for gaming and photos. These devices are a promising vehicle for out-of-school learning to complement formal schooling. In particular, they believe that learning English as a Second Language (ESL) by playing games on cell phones present an opportunity to dramatically expand the reach of English learning, by making it possible to acquire ESL in out-of-school settings that can be more convenient than school (Gounder, 2011).

According to UNESCO (2015), given the proliferation of mobile phones in Uganda, MobiLiteracy Uganda (MLIT) was developed to see if text message prompting could bridge the gap between school and home to improve children's early literacy. Studies have documented how poor learning conditions in Ugandan schools result in children who cannot read after two to three years of schooling (Piper, 2010). Similarly, we know that school is not the only influence on learning; a child's home environment and having the opportunity to learn in and out of school can also make a difference. Overall, parents expressed satisfaction with MLIT and support its expansion through mobile phone or by paper Yonazi *et al*, 2012).

ExamPoa is a groundbreaking mobile revision application for learners at primary and secondary school levels. The Android-based app carries questions, answers and short revision notes that learners can access for a small fee. Once the content is purchased, the learner can work on the questions and receive feedback while offline (Mediamax, 2016). Oxford University Press East Africa unveiled the revision application for Kenya Certificate of Primary Education (KCPE) and Kenya Certificate of Secondary Education (KCSE) examinations candidates. The Android-based application can be accessed through phones and tablets and is downloadable from Safaricom, a mobile phone provider's App store.

Zell (2013) reveals that some of the new digital technology has been more fully embraced than others, particularly Print On Demand (POD), and African Books Collective (ABC) has played a pioneering role in this area, gradually working with African publishers to demonstrate to them the many advantages of POD production. Based on PDF files supplied by the publisher, it allows ABC to print any number of copies for a fixed unit cost, quickly and economically, and without publishers having to ship physical stocks of their books at great expense. It also means publishers can generate potentially higher sales through never being out of

stock. There is a caveat however, and ABC says that while this can work very well for scholarly titles, it is not so cost effective for lower-priced literature titles, while children's books can be problematic.

Africa is the fastest growing region for mobiles in the world, according to Zell (2013), and most observers seem to agree that mobile phone platforms are probably the most fertile ground for new approaches to book publishing on the continent, promoting books at relatively modest cost, to a much wider audience than was hitherto possible, and allowing new and innovative ways to deliver content to users. The concept of using mobile technology to support e-learning, especially for distance learners, is also gaining ground in a number of African countries.

Gliksman, (2011) also discusses the immediate future of mobile devices in education, and notes:

- The mobile apps market will mature and will move from single task, short session apps to more sophisticated offerings.
- The barrier to entry for creating and distributing e-Book content will become lower.
- Increasingly, teachers and communities will create their own e-Book content.
- Social reading is an imminent phenomenon that combines the reading of e-Books with social networking. When reading e-Books, users can connect to friends and other readers, asking questions and sharing notes or opinions. Apps such as Inkling are a bold first step in that direction to promote social collaboration.
- As mobile continues to expand we can expect a consolidation of desktop and mobile systems and browsers resulting in better mobile web editing, more collaboration tools and support for a wider range of web technologies that support the use of mobile devices in education.

In using mobile devices, Goundar (2011) states that education providers can expect improved student learning outcomes, satisfied teachers - with technology for support and assistance, and happy parents. There will be no need to have dedicated computer labs, specific computer desks, chairs and computer lab space – which also means no IT support required, no IT staff needed, no servicing, repairs and maintenance of computers required. All other associated costs like networking equipment, ISP connections, air conditioning and huge power bills will be saved.

DIGITAL SELF-PUBLISHING

In the words of Zell (2013), the rise in digital publishing, e-readers and tablets has also generated a blossoming of a huge number of African self-publishers, who previously were unable to reach a global market place without the intermediary of a publisher. Digital media now provides them with instant access to a wide international audience. Many authors who found their work rejected by mainstream publishers have gone ahead and self-published their books on e-book platforms, such as Amazon's Kindle, Kobo (who have recently launched in South Africa in partnership with Pick n' Pay hyper stores and supermarkets), Barnes and Noble's Nook, or Sony's Reader, as well as on e-reading apps for smart phones such as iPhone or iPad.

John Mwazemba, the Chief Executive Officer of Oxford University Press East Africa acknowledges that in self-publishing you are in control of the content whereas in traditional publishing your work can end up very different from the original draft due to style changes, concerns about libel etc. Sometimes what comes out is not what you wanted to write. The flip side, he adds is that most people don't take self-published works very seriously. This is partly because of quality issues. The steps that a manuscript goes through in traditional publishing (editing, proof reading, copy editing etc) help to catch errors. Self-published books can have many mistakes and things like typos which tend to irritate readers.

DIGITAL PUBLISHING INITIATIVES IN AFRICA

There have been noticeable initiatives in some African countries to try and bridge the so-called digital divide. Zell (2013) describes selected initiatives below:

The Worldreader project <http://www.worldreader.org/>, founded in 2008 by former Amazon senior executive David Risher (who headed Amazon's Kindle division) has focused on bringing e-reading devices to classrooms in Africa, primarily in three African countries at this time, Ghana, Kenya and Uganda, with the aim to create a new reading culture. Using these devices, it has reportedly brought over 200,000 e-books to children in these countries and which has included access, Worldreader reports, to about 500 African-published textbooks and story books. Worldreader says "using e-readers loaded with thousands of local and international e-books, we provide children with the books they want and need, so they can improve their lives." The Kindles used for the project can run for nearly a month on a single charge, and Worldreader says many of the students charge their Kindles at school, where power is usually available at least intermittently in the rural areas where it has distributed the devices. In Kenya, Worldreader partners with Longhorn Publishers. It provides schools, communities and partners with a list of textbooks and storybooks that are available in its programs. Based on their interests and needs, recipients then choose which books they want loaded onto the e-readers. Worldreader now plans to extend its activities into Malawi and Tanzania. Titles in African languages are now increasingly becoming available on the Worldreader platform, for example material in Twi in Ghana, and in Kiswahili, Luo, Kikuyu, and Luganda for its programs in Eastern Africa.

For the pilot project, participating Ghanaian publishers made content available for free in return for having their titles digitized and converted to e-Pub format. But when Worldreader subsequently realized the commercial potentials of the project, they negotiated contracts with the publishers, whereby Worldreader retains 30% of sales proceeds to cover some of their administrative costs, while the publisher is paid 70% in royalties, with regular sales reporting for all titles covered at this stage. One obvious question that arises is whether sales from e-books are likely to affect potential future sales of the corresponding print products. Interestingly, there are apparently no serious concerns about this. One of the participating publishers in the project, Woeli Dekutsey, believes that the activities of Worldreader in the digital area will actually complement rather than compete with, or erode local sales, for the print product; and that "the digital platform actually extends the market of our books, which first started their life as conventional paper-based creations." He adds "my belief is that for us in Africa, the paper medium will coexist with the digital platform for a long time to come."

One Laptop Per Child (OLPC) The mission of the Cambridge Massachusetts-based One Laptop per Child Foundation (OLPC) <http://one.laptop.org/> is "to empower the world's poorest children through education". It aims to provide each child with a rugged, low-cost, low-power, connected laptop. To this end, it designed hardware, content and software for collaborative, enjoyable, and self-empowered learning. OLPC hope that by providing children around the world – and especially those in developing countries – with these simple laptops they will open new opportunities to explore, experiment, and express themselves. Their belief is that with access to this type of tool, children will become more engaged in their own education, and actively learn, share, and create together. The little green laptops are generally sold to governments and issued to children by schools on the basis of one laptop per child. OLPC receives financial support from a number of organizations, and funds are also raised through grassroots donation efforts. OLPC says that for a \$199 donation it can give a laptop to a child in the developing world.

The laptops have wireless broadband that, among other features, allows children to work as an ad-hoc network: each laptop can 'talk' to its nearest neighbor's, creating a local area network even if there may be no routers nearby. The laptops are designed to be highly power efficient, enabling the use of various power

systems, conventional or solar power, generators, or wind or water power. The XO laptop is about the size of a textbook and lighter than a lunchbox. Thanks to its flexible design and inclusion of a transformer hinge mechanism, it can serve for standard laptop use, e-book reading, or playing games.

OLPC says that over 2.4 million children and teachers in numerous parts of the developing world, and elsewhere, now have XO laptops. In Africa, there are currently XOs in ten African countries, the largest number in Ethiopia and Nigeria, with over with 6,000 distributed in each country.

World Bank e-Book Pilot Initiative: Edutech (2011) reports about the World Bank's e-book pilot initiative in Nigeria (which could potentially be replicated in countries from Tanzania to the Philippines), which is looking at what it might take to deliver textbooks in digital formats for reading by secondary school students on dedicated e-readers, and what might happen as a result. Additionally, the project team was seeking to investigate the potential impact on educational achievement of making small libraries of digital books available to students on e-readers.

ExamPoa IT tool: According to CIO East Africa of April 21st 2016, Oxford University Press East Africa unveiled a new educational IT tool, *ExamPoa*, which is an interactive learning and revision tool for Kenyan school pupils to use on phones and tablets, and then compare scores.

James Ogolla, Sales and Marketing Manager Director at Oxford University Press East Africa says that the drive to make Kenya an ICT-enabled nation, and to drive forward digital education, requires engaging content and first class educational materials on every kind of ICT platform, which has been a key factor in driving the development of the new tool.

The Android-based *ExamPoa* application, which works on Android 4.2, is initially offering English and Science for the primary level for classes 7 and 8, and English, History and Biology for the secondary level form 3 and form 4 and is downloadable from the Safaricom Application store (CIO East Africa, April 21st 2016).

Digital Literacy Programme (Digischool): The Kenyan Government rolled out the Digital Literacy Program dubbed Digischool by delivering free digital learning devices to public primary schools (Eneza Education, May 2016). The devices distributed under this program include: Luminous green tablets for the pupils, Sky blue laptops for the teachers, Sky blue laptops for Special Learners to Special schools, Braille Embossers also for Special schools, Projectors, Digital Content servers and wireless routers.

Philip Kipkoech, a manager in charge of the program in Moi University explains that the devices are pre-loaded with content which include interactive digital content for Standard 1 and 2. This content is from five subjects which are Kiswahili, English, Mathematics, Science and Social studies. The teachers' laptops, server and wireless router in addition are pre-loaded with the teacher training curricula on ICT integration, teachers training manual on ICT and a resource kit for teachers.

BridgeIT Project: This project in Tanzania provides access to digital video content in classrooms 'ondemand' via cellular technology, teacher training and ongoing support, and learner-centered lesson plans and teacher's guides. It is a USAID funded 3 – year pilot project with significant leverage support from private and public sectors involving 150 schools in 17 districts from 7 regions in Tanzania. The BridgeIT Project aims to significantly increase educational quality and student achievement in mathematics, science and life skills through the innovative use of cellular and digital technology (Goundar, 2011).

ADVANTAGES AND DISADVANTAGES OF ONLINE PUBLISHING

According to Bastek (2012), while the information available online is staggering, even in our technological age, we cannot forget to mention the fact that not everyone in this day is ready to sit down at a computer screen

and read for any great deal of time. Curling up in front of the fire on a cold day with a book in hand can never be replaced by sitting in a cold chair staring at the words on computer screen. However, there are some obvious advantages of online publishing.

Using a mobile device and e-books means that students can carry a range of books with them and possibly have access to many more through an e-book platform. Various mobile devices are able to read e-books, either as native e-book devices, or as an app on an existing device. The increase in Smartphone ownership and the increasing popularity of tablets means that many more learners have devices capable of reading e-books. Many of these devices have wifi or 3G and, as a result of this remote connectivity, it has become easier to access e-book platforms and collections whilst on the move (Clay, 2012).

Nalder, (2011) argues that education providers using mobile devices may now be able to:

- a) Spend staff training time on improving pedagogy.
- b) Spend valuable student lesson time on using technology instead of wasting time learning to use technology first and then the lessons.
- c) Spend less money on supporting existing technology and more on supporting its use in classrooms.

Bastek (2012) discusses some of the merits and to some extent, demerits of online publishing below:

Costs

The costs of online desktop publishing are fairly low in consideration to those of print. The other positive about low costs for online publishing comes into play when distribution is considered. The distribution itself is free as well. There are no printing costs, which are usually print publishers' biggest expense, nor the waste of large amounts of paper that go along with printing. However, there are costs attached to some of the methods of marketing an online publication. Just because your publication is online, it does not mean anyone out there knows where it is or is reading it.

Profits

It remains difficult to make any money off of online publishing. Most publications online right now are free to readers and are merely charging for advertising space. However, some are attempting to require subscriptions.

Marketing

Although there are no or few distribution costs for online publishing, it does take a bit of marketing to get people to your site. You must register your publication with as many search engines as possible and, often, this entails a cost. However, if this isn't done, no one will be able to find your site. This process needs to be given regular attention as your description or focus changes and as new search engines are introduced. Also, other sites that have agreed to link to yours need to be regularly contacted to make sure that link will remain on their site. So, while marketing and distribution might be cheaper for the online publication, it is not without its costs especially in terms of labor and time.

Editing

Editing is another plus involved in online publishing. For the most part, editing should and does occur before the new issue goes online. However, we've all come across several typos in print documents of any kind that weren't caught before the publication was sent off to the printer. In online publishing, there is no "final" product.

Time

An online publication also requires constant upkeep even in-between issues. Links need to be tested regularly in order to avoid 'linkrot'. And because editing can be done at any time, there's a responsibility attached to make sure what needs to be fixed is. Meanwhile, with print, once it is printed, it is out of your hands. In addition, deadlines for online publication are merely self-imposed. For print, the editors have to take into consideration that the printing itself takes a certain amount of time as does distribution. Therefore, their deadlines are fairly rigid. However, for online publishing, deadlines are good to get the ball going, but the actual publishing can occur at any time without the dependence on the time-frame of another.

Audience

Audience is a category that can be considered both a pro and a con for online publishing. While your audience is not limited to only those hit in your distribution efforts, it is also not the dedicated group of readers that most print publications can count on (Bastek, 2012). So, while your publication may be more widely available, that doesn't mean that people are reading it. It is more difficult to determine your readership in online publications. First, you cannot know the demographics of your readers as easily as you might with print. Some people have attempted to stick with the subscription method to alleviate some of this problem, but then readership often goes down because readers can often get the same information elsewhere for free on the Internet. Counters help tell you how many have entered your site, but they cannot tell you if that person stayed long enough to read anything. While you might say the same of your subscribers in print publishing, the subscribers paid for your publication for a reason and are most likely continuing to read it as long as they're subscribed. Online, it's difficult to determine not just who your audience is, but how many readers you have.

Standards

Because online desktop publishing is a fairly new field, there are no set standards deemed a quality layout format. This can be seen as both a pro and a con. As an advantage, we can understand this to mean that there's more room for experimentation. However, as a disadvantage, there is been very little usability testing done on what readers like and dislike what keeps them there and what chases them away. So, while your content might be great, your layout could chase the readers away, and vice versa. It is still a volatile situation without any standards to rely on.

Submissions

Submissions are another tough area to tackle in online publishing. For example, from a literary journal standpoint, many authors are afraid to put their material online for fear of plagiarism as well as copyright problems that may arise later when attempting to publish their work elsewhere. Copyright laws for the Internet have not been firmly established yet, and because the Internet was created with the intention of sharing free information, they appear difficult not just to enact but to get users to abide by. Plagiarism, however, is a threat for publishing in any medium, print or otherwise. Authors seem to be slow to realize this. However, because of this wide-spread fear, many have deemed the work on the Internet to be poor and the authors published there to be unworthy of higher esteemed print publications. This stereotype also keeps submissions low.

Virality

According to the Huffington Post of October 2011, E-Publications benefit from virality because when you get something published online, it can be emailed, shared via social media, etc. With a little luck, it may go viral,

resulting in many unique visitors for your unique work! The author adds that E-book sales and online journal subscribers are unlimited because of low overhead costs to the publishers. At the same time, Google searches pick you up as writer, which is important for people conducting searches in certain areas. When you publish online, you can receive almost instant feedback via email or comments. When you respond, you build relationships with readers that might bring enjoyment, friendships, new ideas, helpful tips, constructive criticism and loyalty to your future work; in addition readers can click to find your past work as well.

Other advantages

The Director of Marketing Operations at *Kiplinger Washington Editors*, Greg Krehbiel adds the following advantages for digital publishing devices.

1. You can carry around hundreds of books in one device.
2. You can search the text of an eBook.
3. References in an eBook can link directly to the other information.
4. It is possible to include other media in an eBook, like sound and video.
5. eBooks do not clutter up your house, or the waste system.
6. You can read some eBooks in the dark.

Providing e-books can improve access to content through the use of text-to-speech (TTS) functionality for those with a visual impairment. Likewise, reflowable text allows users to increase the size of the font without causing too many problems with how the text and structure of the page will appear on the screen (Clay, 2012).

SPECIFIC CHALLENGES TO DIGITAL PUBLISHING IN AFRICA

Zell (2013) points out that one significant e-commerce barrier is the issue of secure payment on online platforms, and sometimes also a lack of understanding and practice with these still relatively new methods of payment. The payment platforms and an absence of localized payment mechanisms for the payment of e-books, as well as print books, remain a problem for many African publishers, and there being able to access proceeds from sales locally rather than via overseas accounts, such as for payments via PayPal. Additionally, some African publishers are probably still not sufficiently conversant with encryption tools, digital assets and rights management, and the access control technologies and security systems that could assist them – albeit with some caveats – to control access to their digital content, and prevent unauthorized uses.

Zell (2013) cautions that many self-published books are hugely flawed in their standards of writing, and hastily published without due care. When one purchases a book published conventionally by a publisher, one can reasonably expect that it would have been subject to some scrutiny, editing, re-writing, and proofreading, before it was released onto the world. That is not the case with many self-published books, where the author alone has decided on its merits and invariably thinks all the world will want to read it. There is another, often overlooked, disadvantage in self-publishing and by-passing conventional publishers: self-published books in Africa, unless distributed through specialist Africana vendors or the African Books Collective, rarely get picked up by the major bibliographic and book information services which libraries all over the world use as selection tools to purchase new publications. As a result, many self-published titles will probably escape the attention of African studies librarians, and so will not be acquired; nor will they get catalogued and subsequently appear in WorldCat, the world's largest network of library content, covering the collections more than 10,000 libraries worldwide.

According to Clay (2012), the main issue currently is one of compatibility: the variety of eBook formats available means that they cannot be read by all e-readers, or supported on all devices or platforms. Sometimes these limitations arise from technical reasons. Other limitations are generated directly by a decision of a publisher or company, which sometimes involves forcing users to choose a particular format or platform. It is not a simple process to convert different formats, and in some cases, it is technically impossible. Other challenges as noted by Clay, (2012) include:

Cultural resistance: In an academic culture that has used printed paper books for hundreds of years; the move towards the adoption of eBooks is a cultural challenge. Inevitably, users may show signs of cultural resistance and skepticism towards the use of eBooks. Some users may express a preference for printed books, ignoring some of the advantages offered by eBooks. As the JISC National eBooks 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; 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 from. In most cases, these reasons arise as a result of people thinking that using eBooks is about making a choice not to use a printed book.

Authentication and distribution: Technical issues in adopting eBooks depend on the platform and types of eBooks in use. The main technical issue that institutions face revolves around authentication and compatibility. In addition, many of the advanced technical features of eBooks may not even be used or known by users.

Licensing restrictions and withdrawals: A range of licensing models cover eBooks and how they can be used in reading, lending, copying, printing and transferring to mobile devices or e-readers. Users may often confuse “personal” licensing with “educational” licensing. With traditional books, it is very easy to make and share copies using a photocopier. As might be expected, users often want to do similar things with eBooks. Different eBook licenses allow users to undertake different kinds of copying, but there is an inconsistency in how these licenses work and whether the copying is for personal use or for use with learners. Some eBook licenses allow readers to make PDF copies of part of a book, which can then be distributed to others. However, some licenses only permit users to make PDF copies for personal use. Copying an entire eBook and transferring it to a mobile device (or another computer) is another activity that may be prohibited by the eBook license. Some eBooks can be transferred via a central service. Other eBooks can be downloaded to users’ computers and then copied and transferred to their mobile devices. In the words of Yonazi et al (2012), the opportunities for ICTs in education must be understood within a context of challenges and difficulties. These include: the absence of comprehensive policies which enable and support interventions and which are supported by clearly defined and resourced strategies for implementation at national level as well as at the level of educational institutions; lack of financing and prioritization of ICT investments; limited infrastructure of the kind required to support the use of ICT in education; lack of capacity at all levels to integrate and support the use of ICT in education effectively; lack of necessary ICT skills among teachers and of the specific training needed to be able to use ICT appropriately in the classroom; lack of appropriate content; lack of accurate, comprehensive, up to-date data on education; and the tendency of ICT to accentuate social, cultural and economic disparities.

WHICH WAY AFRICA?

Mix-Up Model

According to *Writersrelief.com* of 2011, mixing up online and print is a smart business model: Major and minor book publishers are releasing new titles as both digital and print works. Many online literary journals have

anthologized print editions, and many print journals have online editions. The author adds that as people who have made a life of being writer advocates, we feel that writers should have a good mix of online and print publications. Zell (2013) adds that the general consensus among some African publishers seems to be that digital and print formats will go hand in hand in the foreseeable future. Many observers also believe that, for the moment at least, the conventional book continues to have numerous practical advantages over the eBook, and that, as a format, the book remains flexible, accessible, and is still relatively cheap.

The book is not going to become extinct and disappear from our lives and our book shelves any time soon; nor will digital devices ever be able to match the pleasurable experience of browsing in a good bookshop. Accessing eBooks may be easy and quick, but when you buy a book for download on your e-reader you might well bear in mind that you have not actually bought it; unlike when you buy a print copy, you do not own it. All you have done is to buy a license to read it on your Kindle or other e-reading device. Furthermore, the conventional book requires very little support, unlike eBooks, which require electric power in some form or another.

Acclaimed British writer Jeanette Winterson asserts that eBooks are not an improvement but an addition. They cannot be used as an excuse to take books away from the everyday world and into the virtual world. We all know that browsing an index is nothing like being in a bookshop or a library. Libraries and publishers will come to an arrangement about eBook lending and that could work very well as a satellite service for library users, providing we keep Planet Library. For kids, in particular, eBooks are not the answer. Put six picture books in front of a child and she will soon find her own way. Give her a library shelf of books and she can pull them out all over the floor. Jeanette concludes that early reading involves the taste, smell, weight of books.

Attwell (2013), describing himself as a “textbook publisher turned technologist”, recounts his experiences, ultimately unsuccessful, of “trying to build fancy-tech products in South Africa”, and his belief that for as long as “we think ‘technology spreads’ quickly, we’ll be working on the wrong problems.” He argues that contrary to popular belief, and if we cut through all the hype pronounced in press releases and news stories, technology actually spreads slowly. He tells of his involvement in founding an e-book production company set up to take advantage of fast moving e-book technology, and based on an expectation that the eBook wave was about to sweep through South Africa. “We waited and waited for the imminent eBook revolution”, for four years, “but nothing happened”. The project was eventually shut down. Attwell says he realized that he had been working on tomorrow’s problems, but “hadn’t tackled the problems people had today”, and that today’s problems can present real obstacles to new technology. That compelled them to face “the reality that for most people, new technology spreads slowly. Yet the myth that new technology spreads quickly is so entrenched in our thinking that it’s almost impossible to escape. It’s such a common assumption that we don’t even question it.” There is nothing wrong with taking full advantage of impressive new technology, he says, but “we don’t need fancy technology to help people read, to teach, or to save mothers and babies. We need a humble kind of problem solving.”

Zell (2013) argues that African publishers’ thinking should not be dominated by technology, nor should they be unduly alarmed about the sometimes near-hysterical debate about the dramatic change of the publishing landscape and the growth, or threat, of eBooks. They should continue to concentrate on content and quality, not on the platform. eBooks may well flourish in the years ahead, new technologies may well be transforming the lives of people, new products, gadgets, apps, and exciting innovations will continue to be launched almost every day and some will be enthusiastically embraced by readers all over the world, but traditional books, in Africa as elsewhere, will continue to have enduring qualities that digital formats can simply never replace.

Maximizing on Digital Publishing

Yonazi *et al* (2012) suggest the following recommendations in maximizing on digital publishing:

1. Establish an enabling policy environment
2. Widen access to ICT infrastructure and connectivity
3. Harness ICT to improve management and administration
4. Harness digital learning resources
5. Build human capacity
6. Ensure funded projects contribute to national policies and objectives
7. Consider investment in the enabling policy environment
8. Consider investments to build capacity at a regional or continental level
9. Continue to fund pilot projects to test innovative technologies
10. Ensure that intellectual capital generated by funded projects is shared
11. Undertake an evaluation and impact assessment of regional initiatives

CONCLUSION

Zell (2013) believes that the question of suitable local content remains a key issue, but one could argue that it is not really a matter of print or digital, but simply access to books. The important thing is to get books into the hands of readers in Africa, whether adults or children; regardless whether it is the traditional print product, or to get content onto smart phones and mobile devices, or on to e-reading platforms and tablets.

We will need to remember that while access to books from indigenous African publishers, whether it is fiction or non-fiction, or children's books, can be said to have greatly improved over the last two decades, nowadays books, in Africa as elsewhere, have to compete with local newspapers, music and video sharing sites, online magazines, as well as a prolific output of home produced drama made for TV, or released by local movie industries. Additionally, the now relatively easy availability of computers, the rapid growth of the Internet, widespread use of affordable mobiles, together with the increasing popularity of social networks, have no doubt all played their part in creating what has become a diminishing reading culture in many countries in Africa. That is a worrying situation, which presents a huge challenge for Africa's book professionals.

By the end of the day, for the book to thrive in Africa, in whatever formats, it requires a stable infrastructure, and a stable and enlightened government to support real progress; a government that takes positive steps to support literacy development, writing and reading, provision of library services, and support for its indigenous book industries (Zell, 2013).

Parents must use the home environment to develop the foundations of literacy among children and stakeholders need to involve parents in reading initiatives which have a strong focus on engagement in their children's learning. Special sessions for parents should be held to highlight the importance of parents' roles as their children's first and greatest teachers, and to provide them with the skills and tips that enable them to fulfill this role.

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