

**REVOLUTIONIZING HISTORICAL RESEARCH: EXPLORING THE
POWER OF DIGITAL TOOLS**

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ABSTRACT

Over the past few decades, historical research has undergone a significant shift from traditional analogue methods to digital formats. Before the mid-1990s, researchers were limited to physical structures, printed books and magazines, historical sites, and institutions, and relied heavily on personal interaction (oral interviews) to obtain information. However, with the advent of the Internet and the world wide web, a vast corpus of information has become readily available to historians, researchers, and the wider public. Digital tools have become essential for historians to access and analyse digitised materials such as manuscripts, texts, maps, photographs, and newspapers. Popular digital tools for research include Google tools, digital libraries and archives, text analysis software, data visualisation tools, and GIS mapping software. These tools make it easier for historians to understand and analyse historical events, trends, and patterns. The study's methodology is a blend of quantitative and qualitative approaches, consulting digital sources on the websites of various online libraries, archives, and other digital tools. Findings indicate that while digital tools have significant advantages, they also have limitations. For instance, some historical materials are yet to be digitised, and some may be inaccessible due to copyright restrictions. Moreover, digital tools require specific skills and training to use effectively, and their interpretation necessitates critical analysis. Nonetheless, this research concludes that digital tools are a powerful aid to historians in accessing, analysing, interpreting, and reconstructing historical events, trends, and patterns. It further ensures that history is preserved for future generations. Notwithstanding, it is important to note that the intent of this paper is not to dismiss traditional methods but rather to propose a complete and inclusive approach.

Keywords: Digital tools, Digital history, Historical research.

INTRODUCTION

Before the last decade of the 20th century, Historical research was limited to engaging with physical structures, printed books, and magazines, historical sites, and institutions, e.g., museums and archives, and relied heavily on personal interaction (oral interviews) to obtain information. The last decade of the 20th century, specifically the mid-1990s witnessed the transformation of Historical research from analogue to digital arising from the introduction of the internet and the world wide web, making a large corpus of information readily available to researchers and the public at large. Roy Rosenzweig is known as the pioneer or father of Digital History and he was the first to establish the first digital history centre (Centre for History and New Media renamed Roy Rosenzweig Center for History and New Media RRCHNM) in 1994 at George Mason University, USA.¹ His aim was to “use digital media and information technology to democratise history; to incorporate multiple voices, reach diverse audiences and encourage popular

participation in presenting and preserving the past². His efforts paid off as this led to the establishment of more centres in the US³. The development of Digital History led to the growing importance of Digital tools for historical research. At this juncture, we will define Digital History before delving into what researchers can accomplish using Digital tools, kinds of digitised materials, the Names of some Digital tools and their importance in Historical reconstruction and shortcomings.

Digital History- Digital History can be defined as the use of digital technologies, such as computers, the internet, and digital archives, to study and understand history.⁴ This can involve creating digital collections of historical documents, using digital maps and images to learn about past events, and using digital tools to analyse and understand historical information. Digital History aims to make information available or reachable to more researchers who may want to obtain data in the form of statistics, articles, images, pictures, maps, audiobooks, audio recordings, financial records, e-books, and many others. The data collected are converted from their physical or analogue state to a digital state which can be processed, stored, and transmitted electronically.

What a Historian Can Achieve with Digital Tools- The importance of Digital tools to a Historian cannot be over-emphasised. The 21st century has transformed the way and manner researchers obtain data for their research. Academic research has become more interesting, in-depth, accessible, and comprehensive because of lots of information which the web and digital tools have made readily available to scholars in a few seconds. Obtaining materials for research spanning many centuries in past is no longer a difficult task as much information, some of which were in a physical state and on the verge of destruction has been transformed into digital states and preserved for posterity- all thanks to the various Digital tools that made them possible. Hence, **searching** for materials digitally would be one of the first accomplishments that a Historian can claim to make with digital tools. This is far easier than flipping a hardcopy book (page by page) to the end of a page to find a word, sentence, or an interesting/ important part of a book. Secondly, Historians can **read** as many e-books as possible online which can be invaluable to their research. These books are available and digitally stored for many years, unlike their hardcopies which may easily be defaced or destroyed after a few years. Thirdly, **Copying and pasting** an important part of a book or relevant information on a computer makes it easier and faster for the researcher to accomplish tasks instead of spending much time jotting down information with traditional paper and pen. Fourthly, analysis is one of the three components of research methods, the other two being to collate and interpret. Accordingly, one can **analyse** and compare various information from different texts more easily, especially by opening several tabs on the computer at the same time. Two or more different tabs can also be opened for other purposes, such as when one performs two different tasks. Fifthly, a Historian can choose to **build a personal collection** of information for posterity and immediate use (in the form of textual materials, images, audio etc.) Sixthly, **sharing information** has become very common among researchers

and the public, especially with the rise of social media platforms. Platforms like Meta, Twitter, WhatsApp, U-tube, and Instagram are very engaging with a lot of content. Some of the information shared on these platforms are not just for the public but are posted by researchers and professionals and can be useful sources of information for researchers.

In all, the internet is a reservoir of the ever-increasing Digital content in the form of texts, images, visuals, audio, artefacts, etc. Accessing, processing, and disseminating this large-scale information is free and faster as it reaches many people more quickly. This is where the traditional methods of processing largescale information have their shortcomings- it would require many hands and of course, many weeks to physically gather, arrange, and process works for dissemination to various locations. Similarly, imagine publishing this paper in a journal that is not visible online. This would mean only the people in my location would get to read it whereas publishing it online (digitally) would mean that many researchers would have access to my work. There is a whole lot that Historians can gain from using Digital tools in various research tasks as seen above. The next session examines the kinds of materials that can be digitised.

Kinds of Digitised Materials - Digitisation refers to the process of converting analogue information or physical objects into digital format, which can be processed, stored, and transmitted electronically. This can involve using computers or other electronic devices to "convert many different forms of information, such as text, images, audio, and video, into digital forms".⁵

In today's world, digitisation has become a crucial aspect as it makes it convenient and accessible to store and share large amounts of information efficiently. When one uses a smartphone to capture a picture or scan a document, the image is transformed into a digital format that can be effortlessly shared with others via email or social media. Moreover, digitisation has opened new avenues of communication like video conferencing and online learning, which were previously unattainable. Some examples of digitised materials include:

- text e.g., books, manuscripts, articles
- visual materials such as paintings and photographs
- temporal media like audio recordings, music, speeches, interviews
- videos such as movies, TV shows, and webcam footage
- spatial materials such as archaeological artefacts, museum objects, or sculptures.
- Data e.g., financial data, numerical data from sensors, and weather data.⁶

Definition and Names of Some Digital Tools and their uses

The definition of Digital tools is diverse and inclusive as stated on the website of IGI Global, renowned for publishing cutting-edge research. Some of these definitions include.

- Hardware such as laptops, tablets, and smartphones
- Tools characterised by electronic and especially computerised technologies.
- Applications, websites, or online platforms that support students and teachers to present, organise, communicate, and engage concepts.

- A program, app, or other software is available on a digital device (e.g., iPad, laptop, smartphone,) etc., including those that are language, audio, and visually-based.
- Internet-based programs and resources can be used to support, enhance, and facilitate online and technology-driven instruction.⁷

In other words, a digital tool is any software or application that is designed to perform specific tasks, such as searching for information, displaying images or maps, or accessing scholarly articles. These tools are typically accessed through digital devices like computers, smartphones, or tablets.

There are numerous Digital Tools that would facilitate historical research. Some of these are already very popular among researchers, while others are not so popular. Similarly, while some digital tools are free and open for researchers, some are accessible with paid subscriptions. One of the most common and popular Digital tools is the Google services consisting of the Google Search Engine, Google Images, Google Maps, and Google Scholar. There are also Digital Libraries, Digital Archives, and social networking websites for researchers. A few of these will be considered in this paper.

Google Search Engines- This search engine needs no introduction as it is a ready tool in the hands of researchers. Google Search is one of the most widely used search engines in the world, and its importance lies in its ability to provide users with fast and accurate relevant information based on their inquiries. Google Search allows users to access a vast amount of information on virtually any topic within seconds. This makes it an incredibly useful tool for research, education, and personal interest. Furthermore, researchers generally, and Historians, specifically, can quickly find the most relevant, accurate, and useful results for their research on Google. It is effective, saves time, and increases productivity. This search engine is also built to sieve out fake news, hence researchers can rely on it for trusted and reliable information. It is advisable to confirm some news that is posted on social media platforms by referring to the search engine. Google search is indeed a significant tool for scholars, professionals and literarily everyone.

Google Images- Launched in July 2001⁸ Google Images is a search tool provided by Google that allows users to search the web for images. It is a powerful tool that can be used to find images on a variety of topics, including people, animals, objects, places, and more. Historians should integrate visuals and images into their research to make it more engaging, captivating, and less monotonous, while also improving accessibility to past events. Visuals and images also convey information quicker than written texts while confirming historical data.⁹ Google Image is a valuable resource for locating images of civilizations, landmarks, artefacts, currencies, and economic activities, which can be employed to clarify the research. In effect, one of the typical applications of Google Images is for research and education, where it serves as a research tool to obtain images for academic papers, presentations, or reports. Aside from research and education, Google

images may also be used for personal reasons, for instance, to build up a collection of artworks, or designs, which can be used to update social media pages or build a reservoir of content. In all of these, it is best to tread with caution and seek permission or acknowledge the source when obtaining images.

Google Maps- Google Maps is a web mapping service and mobile app owned by Google. It provides users with a comprehensive mapping and locationbased information system, allowing them to explore and navigate the world with ease. Sometimes, when embarking on fieldwork, historians would need to travel to places, cities, and countries to gather data. Google Maps becomes a handy tool to locate areas easily. It is possible to search for and find specific addresses, and landmarks and get directions on how to arrive at a desired destination. Generally, Google maps can be used to navigate unknown areas and find tourist attractions, hotels, health facilities, shopping malls, markets, and entertainment centres, among others. Google Maps are also helpful to scholars in other disciplines like the social sciences (to examine the spatial distribution of social groups), environmental sciences, (to monitor and map environmental changes like deforestation), and health studies (to track new diseases and their spread).

Google Scholar-Many academics are familiar with Google Scholar, a free academic search engine that allows researchers and scholars to access academic literature, including peer-reviewed papers, theses, books, abstracts, and technical reports. It is designed to assist scholars access scholarly information on a particular topic. Launched in November 2004¹⁰, this search engine has made life easier for scholars. To use Google Scholar, you can simply enter your search inquiry in the search bar on the Google Scholar homepage. The search results will display a list of articles, books, or other scholarly works related to your inquiry. You can then click on the links to access the full-text articles, abstracts, or citations. Another way of accessing Google Scholar is by first entering the name of the author whose article you may want to view. The search results will display the author's name and all the books and/or articles that have been published by the author (that is if these works are online). Google Scholar also provides several features to help users refine their search results. It can inform the user about the citation of a work, the year such work was published, its relevance, the date of publication, the publishing company, and the year of publication. In all, Google Scholar is an efficient and effective tool for accessing academic literature and conducting research on a wide range of topics.

Digital Libraries- The New World Encyclopaedia defines a digital library as a library in which collections are stored in digital formats (as opposed to print, microform, or other media) and accessible by computers.¹¹ It may also be defined as a library collection of digital resources, such as books, articles, images, audio recordings, and videos, that are organised and made available for online access through computers, tablets, or other digital devices. Digital libraries provide users with access to a wealth of information and resources. Its advantages lie in the fact that “there are no physical limits

to information storage, materials can be accessed around the clock to multiple users, and they feature efficient information retrieval mechanisms".¹² Digital libraries may be managed by institutions, libraries, archives, museums, and universities and are easily accessible from different parts of the world. Many of them contain several thousand and millions of e-books and other materials which are invaluable sources of scholarly references. Some of the notable Digital libraries in the world are highlighted below:

World Digital Library- The World Digital Library (WDL) is an online platform that provides free access to digital versions of cultural treasures from around the world. It was created by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in partnership with the Library of Congress in the United States¹³.

The World Digital Library is not located in a physical location as it is an online resource that can be accessed from anywhere in the world with an internet connection. It was launched in 2009 and currently provides access to over 20,000 items, including manuscripts, maps, photographs, and other documents of cultural significance.¹⁴

The WDL aims to promote cultural diversity and understanding by making cultural heritage materials from different cultures available to everyone, regardless of their location or economic status. The original collections from the WDL were translated from English into six languages, such as, Arabic, Chinese, French, Portuguese, Russian, and Spanish.¹⁵

Users can browse the collection by place, time, topic, and type of item, and the site offers advanced search capabilities. Each item includes detailed descriptions, contextual information, and links to related resources. The WDL also provides educational resources for teachers and students, including lesson plans and online exhibits. The World Digital Library is a valuable resource for researchers, educators, and anyone interested in exploring the world's cultural heritage.

Project Gutenberg- Project Gutenberg is a digital library that offers over 60,000 free e-Books in various languages. It was founded in July 1971 by Michael S. Hart¹⁶ and is named after Johann Gutenberg, the inventor of the printing press¹⁷. The library which consists of a large collection of the world's greatest literary and cultural e-books is assessable to the public for free.¹⁸ The thousands of e-books in this digital library are said to be digitised by thousands of volunteers who also spend time proofreading them.¹⁹ The library consists of numerous fiction, and non-fiction, novels and audiobooks. The library aims to encourage the creation and distribution of e-Books and other digital resources in a format that is accessible to all. Beyond promoting literacy and education, Project Gutenberg aims to make literature and information available to anyone who has access to the internet, regardless of their financial situation, geographic location, or other barriers that might prevent them from accessing books in the traditional format. In addition to its free e-Book collection, Project Gutenberg also encourages the creation of new eBooks and provides resources and tools to help individuals create and distribute their own digital works.

Universal Digital Library- The Universal Digital Library is an initiative that was launched by Carnegie Mellon University in 1999 to provide a vast collection of books online, accessible for free. This project has now been taken over by the Internet Archive. The library boasts a wide array of books on diverse subjects, written in various languages, and emphasises those that are in the public domain. It is a global library, encompassing books from many countries and cultures. By visiting the library's website, users can easily search, browse, and read books online without any cost. The books are available in multiple formats, including PDF, EPUB, and Kindle, and tools for downloading and printing the books are provided as well. The Universal Digital Library is an asset for historians, scholars and anyone who desires to freely access a vast selection of books online. The purpose of this library is to make knowledge and information more assessable worldwide.

Forgottenbooks.com- This is a London-based book publisher specialising in the restoration of old books, both fiction, and non-fiction. In other words, it offers access to a collection of rare, out-of-print, and hard-to-find books both online and in print versions. It has both free and paid membership options, with the paid membership providing access to books in printed versions. The website aims to preserve and make accessible books that are no longer widely available, with a focus on works from the 19th and early 20th centuries. The collection includes books from a variety of subjects, including history, philosophy, literature, law, religion, and science. The website also offers tools for searching, browsing, and downloading books. There is a total of 1,294,206 books available for purchase, download or just reading.²⁰ Some examples of books historians could obtain from the website (with a focus on History books) include *Ancient Egypt Under the Pharaohs; Kings and Gods of Egypt; The Antiquities of Egypt; Liberia; The Growth of the British Empire; Ancient Chronology; and A History of the Colonization of Africa*, among others.

British Newspaper Archives- The British Newspaper Archives also referred to as the (BNA) is one of the largest collections of newspapers in the world with newspapers dating from the 1600s to the present day.²¹ A part of the British Library's collection, the BNA categorises digitised newspapers in the following manner;

- News articles (local and national)
- Family notices (births, marriages, deaths, engagements, anniversaries, and birthdays)
- Obituaries (life sketches of notable people who were recently deceased)
- Letters to the editor
- Advertisements²²

These archives contain a vast amount of information about the country's history, government, society, culture, and more. Here, you can find a wide variety of information including news about politics, war, economy, government information, stories, jokes, cartoons, opinions, historic maps, photographs, fashion and more. Researchers and historians may use this archive to study and understand various aspects of British history and culture.

Beyond information about the United Kingdom, the BNA also contain a wealth of historical materials related to British colonies, including Nigeria. News of political, economic, and social developments in the area can be found in the BNA. Since the British government was heavily involved in Nigerian affairs during the colonial period, and the Colonial Office was responsible for overseeing British policy in the region, the BNA contain news items related to Nigeria and parts of Africa. including correspondence, reports, and other documents that shed light on the administration of their colonies.

The BNA contains several personal contents such as letters, written by British officials, missionaries, and other individuals who lived and worked in Africa during the colonial period. These materials can provide valuable insights into the experiences of Europeans in Africa as well as the interactions between Africans and the British people. The BNA also contain photographs and maps related to local and international issues including images of people, places, and events from the UK and beyond. These materials can be particularly valuable for researchers studying the geography and culture of several societies. The BNA contain a wide range of official government publications related to the UK including reports, proclamations, and legal documents. These materials can provide insight into the political and legal structures of the country during different periods of its history.

Finally, the BNA also contain stories and news of prominent people including politicians, writers, and activists of both European and African origin. These materials can provide insight into the perspectives and experiences of Nigerians and Africans generally during different periods of their country's history. From a personal experience, the BNA was instrumental in the successful completion of our book, "Groundwork of Eniong Abatim History (1670-2020)".²³ The focus of this book was on the Eniong Abatim community located in the present-day Cross River state. A rich account of the Ndem Eno war fought between the Eniong and their Efik kin in Old Calabar was vividly captured in the Belfast Newsletter of 31st May 1890.²⁴ When searching for documents on the community, it was important to use the obsolete spelling of Eniong i.e Enyong by missionaries and colonialists. This approach towards obtaining information on Eniong was by typing in the name, Enyong in the search function on the BNA site. It is important to note that when searching for documents on African communities, one should be familiar with obsolete spellings of communities to facilitate the digital search. Examples of outdated or obsolete spellings found in old records and their current spellings include;

Ibo Calbongos/Callebar/Kalabar Ijaw Etoo Ika/Igabo/Ikabo	Igbo Calabar Ijo Itu Ika (an Igboid group in present-day Delta and Edo states).
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In order to effectively search for information from the BNA, it is recommended to enter specific details such as keywords, names, locations, dates, and titles. By doing so, the relevant information would appear on the screen.

Academia.edu is a social networking website for researchers, scholars, and academics. It allows them to create a profile, upload their academic papers, and connect with other academics in their field. It also provides analytics and metrics to help academics track the impact of their work, such as the number of views and downloads their papers have received.

OTHER DIGITAL RESOURCES

Several free open-source web applications perform various tasks such as content management, describing, and exhibiting artefacts, photographs, and other digital collections for public use. Some of these include Zotero, Omeka and Tropy. These three web applications were developed and maintained by the Roy Rosenzweig Center for History and New Media (RRCHNM), at George Mason University, Virginia. Text mining websites, History News Network (HNN), a platform where historians write articles about contemporary issues, 3D modelling and virtual reality tools, mapping, web scrapping and crawling tools, among others, serve as invaluable digital resources to historians and researchers in general.

THE IMPORTANCE OF DIGITAL TOOLS IN HISTORICAL RECONSTRUCTION

Digital tools are becoming more and more essential for historical research. These tools help historians to create detailed and precise representations of the past. By using digital tools, we can recreate buildings, landscapes, and artefacts from different periods, allowing us to gain a better understanding of what life was like in the past.

One of the most important advantages of digital tools is that they allow us to visualise and manipulate historical data in new and innovative ways. For example, 3D modelling software can be used to create digital versions of buildings and landscapes, based on historical records and archaeological findings. This enables researchers to explore how these spaces might have looked and functioned in the past hence, gaining a deeper understanding of history.

Digital tools also make it easier for researchers and institutions around the world to collaborate on projects. By sharing data and working together on projects, researchers

can combine their expertise and resources to create more comprehensive and accurate reconstructions of historical events and places. This helps to make sure that the knowledge gained from these projects is shared widely and is available to everyone.

Overall, digital tools are incredibly valuable for historical reconstruction because they allow us to gain a better understanding of the past. By using digital tools to create accurate and detailed representations of past historical events, we can learn more about the complexities of history and share that knowledge with others. This helps us to appreciate the rich and diverse history of our world and to preserve it for future generations.

CHALLENGES OF USING DIGITAL TOOLS IN HISTORICAL RESEARCH

Although digital tools have revolutionised the way historical research is conducted, they also present several challenges. Some of the challenges of using digital tools for historical research include:

Technical skills: Historians need to have technical skills to use digital tools effectively. Some historians may not have these skills, which can limit their ability to use digital tools.

Preserving historical materials in digital form is challenging due to the risk of data corruption, technology becoming obsolete, and loss from natural disasters.

Availability of resources: Although digital tools provide vast information, not all historical resources are available digitally. Therefore, access to physical archives and libraries is still crucial for historians.

When using digital resources, historians must consider copyright laws and restrictions. Sites, where information is obtained, should be acknowledged.

The quality of digital materials can vary widely, and in some cases, verifying the accuracy and authenticity of sources can be quite challenging. In this regard, the solution would be to crosscheck from two or more websites.

Digital tools are not immune to bias. Historians need to be aware of the potential biases in digital resources and tools and take steps to minimise their impact on research.

CONCLUSION

Undoubtedly, digital tools and resources have become essential research aid in the 21st century, significantly transforming the way historical research is carried out and preserving history for the future generation. However, despite the benefits, these tools pose unique challenges that must be addressed to guarantee the accuracy and dependability of research outcomes. Hence, historians need to stay updated and upgrade their knowledge of history by learning to adapt to the latest digital techniques and research methods. In all, the objective of this paper is not to disregard traditional research methods. Instead, it proposes a comprehensive approach to safeguarding culture that involves the integration of digital technology with conventional methods.

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