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School Librarians and Technology Integration in Nigerian Schools

Abiola Bukola Elaturoti

Lead City University, Ibadan, Nigeria

Abstract

Technology has pervaded every area of human life, existence and experience including the field of education at all levels (primary and secondary levels inclusive); it is now a very important part of the modern-day world. Everything has changed with so many alterations still occurring even in education at the primary and secondary school levels due to the influx of technology. Nigerian schools, as well as school librarians, in the country are not left out. However, it is observable that the level of adoption, utilization and integration of these technologies in schools in Nigeria has been low compared to the developed world and even some other countries in Africa. School libraries are fundamental to the success of education and at the centre of these libraries are school librarians who are professionals whose roles have gone well beyond just the handling of books and other information materials to include technology integration in schools. Therefore, the ultimate aim of this article is to assess the role and relevance of school librarians in technology integration in schools in Nigeria.

Keywords: Technology integration, school librarians, instructional technology, information literacy, collaboration, leadership.

Introduction

The importance of technology in education in Nigeria and beyond has been discussed extensively in literature. According to Kalejaye, Fabunmi and Adeoye (2011), technology could be useful in the areas of curriculum, courses and instructional planning and development. Technology, specifically instructional technology, can be used to improve instruction, educate more people, learn about learning, reform the curriculum, improve the process, and articulate the system (Kalejaye, Fabunmi and Adeoye, 2011). School libraries are very important to the offering of quality basic education in schools; they offer teaching, advisory and guidance services in education (Johnson, 2017). Quoting Alokun (2004), Johnson (2017) stated that school libraries cater for students and teachers in primary and secondary schools in search of information for the purpose of doing assignments, project writing, to acquire new knowledge, for recreational purposes and other purposes; they also expand the learning process, assist with development tasks, encourage reading, and develop appreciation, attitude, value, learning skills and critical thinking.

Citing Idiegbeyan-Ose and Okoedion (2012), Oyetola and Adio (2020) also stated that the school library contributes to both teachers' and pupils' achievement of sound and quality education by all or any of the following: improving teaching by ensuring that the library stocks current textbooks and other materials which can aid the teachers in the preparation of their lessons; making information on current affairs available for teachers and pupils; providing additional reading for teachers, further enriching class work; serving as the laboratory where books on all disciplines encourage self-reliance, good use of leisure time, and arouses interest in reading. As specified in the International Federation of Library Associations and Institutions (IFLA) school library guidelines, the goal of all school libraries is to develop information literate students who will develop into responsible and decent participants in society. Information literate students are competent self-directed learners who are aware of their information needs and actively engage in the world of ideas. They display confidence in their ability to solve problems and know how to locate relevant and reliable information. They are able to manage technology tools to access information and to communicate what they have learned. They hold high

standards for their work and create quality products. Information literate students are flexible, able to adapt to change, and able to function both individually and in groups (IFLA, 2015).

The changing information landscape and highly technological environment of 21st-century schools has notably redefined the role of school librarians and as technology has become a vital part of teaching and learning, school librarians, being information specialists and educators, have the potential to lead through technology integration (Johnston, 2012). In contemporary world, technologies emerging day in and day out have changed how things are being done in every sphere of life including in school libraries; these technologies offer better and more efficient methods of carrying out objectives and proper and effective discharge of the duties and roles of the school librarian, which are also being redefined. School librarians have shifted from being only book or information checkers to being leaders in adoption and utilization of these technologies in the prompt and effective discharge of their duties and responsibilities towards the pupils and teachers whom they are supposed to serve by giving adequate support to the teaching and learning process. The pace of developments in technology is fast and the existence of these technologies is very dynamic and demanding, therefore, school librarians also need to keep themselves updated in their knowledge and workings to enable them introduce them to and also train others in their beneficial uses.

Furthermore, students in the classroom nowadays are considered to be part of the millennial generation, that is those born from about the year 1980 upwards because they have been born at a period when technology keeps evolving, personal computers, tablets and mobile phones as well as other latest and up to date technologies are easily accessible and, for most of their lives, the World Wide Web is just a click away coupled with the fact that their parents are more educated and more involved than those of any previous generation (Collins and Doll, 2012). These millennials want control over their surroundings and are socially connected, confident, collaborative, and technology-friendly (Lindbeck and Fodrey 2010 in Collins and Doll, 2012). They want to be challenged and given a choice. They are interested in things that apply directly to them and are very much in tune with their social and digital worlds. Millennials are more interested in technology than any previous generation and they do not just use technology, but they are also fascinated by interacting with it and creating content. Nigerian pupils are not left out of this drive towards and cravings for technology.

Therefore, school librarians in Nigeria (and the world at large) must be highly innovative and creative in order to ensure the proper discharge of their roles and responsibilities, which span both the curriculum and personal needs of the teachers and pupils. The influx of technology in today's world and information society is not only transforming access to information, but also the skills required to interact with information and use it appropriately. School librarians, themselves, must be familiar with these technologies; they must be vast in their deployment, maintenance and subsequent integration in schools in Nigeria. School librarians play a very important role in integrating technology in the teaching and learning process, in education generally; and also in assisting students develop 21st Century skills that will enhance their ability to use technology as a tool for learning and ensure their preparedness to succeed and participate in a digital society. The dependence on technology in order to be able to relate with and use information has risen (and is still rising) to such a level that it has put information literacy in a vanguard position in education and also made it possible for school librarians to occupy leadership roles within their schools through technology integration (Johnston, 2012).

Integration of education in Nigerian schools

The National Centre for Education Statistics (NCES, 2003) defines technology integration as "the incorporation of technology resources and technology-based practices into the daily

routines, work, and management of schools. Technology resources are computers and specialized software, network-based communication systems, and other equipment and infrastructure. Practices include collaborative work and communication, Internet-based research, remote access to instrumentation, network-based transmission and retrieval of data, and other methods." The next stage after the introduction of any technology and making it available and accessible is the integration of the technology and it is an ongoing process because technology is constantly evolving; also, students and teachers leave school for one reason or the other while others get enrolled at school. The process of technology integration involves continuous change, learning, and improvement. Cultivating a culture that advances technology is important to its successful integration, for example, correspondence by e-mail, or using electronic calendars to schedule meetings, encourage a culture that accepts technology as "natural" to the business of everyday work (NCES, 2003).

"Effective integration of technology is achieved when students are able to select technology tools to help them obtain information in a timely manner, analyze and synthesize the information, and present it professionally. The technology should become an integral part of how the classroom functions -- as accessible as all other classroom tools." -- National Educational Technology Standards for Students, International Society for Technology in Education (ISTE) in Edutopia, 2007. As noted by Edutopia (2007), when effectively integrated into the curriculum, technology tools can extend learning in powerful ways which can provide students and teachers with: access to up-to-date, primary source material; methods of collecting/recording data; ways to collaborate with students, teachers, and experts around the world; opportunities for expressing understanding via multimedia; learning that is relevant and assessment that is authentic; training for publishing and presenting their new knowledge.

Technology integration in education may be:

- 1. Sparse: Technology is rarely used or available. Students hardly ever use technology to complete assignments or projects.
- 2. Basic: Technology is used or available occasionally/often in a lab rather than the classroom. Students are comfortable with one or two tools and sometimes use them to create projects that show understanding of content.
- 3. Comfortable: Technology is used in the classroom on a fairly regular basis. Students are comfortable with a variety of tools and often use these tools to create projects that show understanding of content.
- 4. Seamless: Students employ technology daily in the classroom using a variety of tools to complete assignments and create projects that show a deep understanding of content. Further, Edutopia ((2007) notes that successful technology integration is said to have occurred when the use of technology is: routine and transparent; accessible and readily available for the task at hand; supporting the curricular goals, and helping the students to effectively reach their goals.

The term "technology integration" covers so many different tools and practices; thus, there are many ways in which technology can become an integral part of the learning process (Edutopia, 2007). While bearing in mind that new technology tools and ideas spring up daily, some examples of technology integration are online learning and blended classrooms (online learning is only virtual while blended classrooms is a combination of both online and face-to-face education); project-based activities incorporating technology; game-based learning and assessment; learning with mobile and handheld devices; instructional tools like interactive whiteboards and student response systems; web-based projects, explorations, and research; student-created media like podcasts, videos, or

slideshows; collaborative online tools like wikis or Google docs; and using social media to engage students.

School librarians need to undergo professional training and career development programmes at regular intervals so that they can be well equipped with the right knowledge and information skills to be an accomplished 21st Century school librarian. As noted by IFLA (2015), the core function of a school library is to provide physical and intellectual access to information and ideas. In order to meet the teaching and learning needs of a school community, it is essential to have a well-trained and highly motivated staff, in sufficient numbers according to the size of the school library and its unique needs. School librarians are at the centre of any worthwhile school library. Using technology in the school setting requires training (to develop the knowledge and skills to apply the tools) and professional development (to understand and apply the technology in instruction and school management). The technological tools available do not fit together until school librarians receive training and professional development and they, in turn, also pass on the knowledge to teachers and students in order to make the best use of them (NCES, 2003).

For any Nigerian child/student to secure a brighter future emphasis must be laid on the importance of information acquisition and use; these kick off in the school library and without qualified librarians aims, of the library cannot be achieved. A competent, effective and well-trained library staff boosts a good library service. A trained and highly knowledgeable school librarian can coordinate activities in the school library successfully. In addition, he or she will be able to select and produce materials, and become acquainted with the resources of the school library to educate teachers and students (Oyetola and Adio, 2020).

The school library is considered the nucleus of school learning and teaching programmes and the foundation store of any modern educational structure. A well-structured school library usually contains various books and other formats of information materials on all subjects of interest to the pupils and the teachers and should be maintained by a professionally trained teacher or school-Librarian (Jegede and Towolawi, 2010). The school librarian is a very important component of the school library because he/she is the administrator or coordinator of all the other components including the collections, which are prerequisites that support the teaching–learning process, and develop independent reading habits and skills in pupils thus improving their study skill and performance. The level of creativity, dedication and knowledge-ability of pupils will be determined by the extent of their access to and utilization of library facilities available in their schools, which in turn is determined by the level of innovativeness and creativity of their school librarian.

In discussing the school librarian and technology integration in Nigerian schools, some pertinent issues must be addressed, and these include: a definition of the role of the school librarian in technology integration in Nigerian schools, the problems militating against them in playing their roles in technology integration and how these problems can be overcome.

Roles of the school librarian in technology integration in Nigerian schools

The existence of school libraries (found in primary and secondary schools) is as important as the existence of the schools and this is so because they are established for the improvement of teaching-learning situations and the total upbringing of the pupils (Nwofor and Ilorah, 2006 quoting Nyam and Guraji, 1999:59). The school librarian's job is one of the most challenging in librarianship since the basis and foundation for information literacy and lifelong learning are being laid at this point; children begin to learn and acquire information skills at this stage. According to Wine (2016), the role of school librarians has a history of radical change.

The American Library Association (ALA) suggested that schools and colleges began integrating information literacy into students' learning on the advent of the Information Age in the middle of the 20th century and the subsequent development of personal computers and the Internet. In this 21st Century, school librarians are entering another period of radical change as they combine their information specialist roles with technology integration. The skills required of a school librarian include teaching and learning, curriculum and instructional design and delivery; development/design. management (planning, evaluation/improvement); collection development, storage, organization, retrieval; information processes and behaviours, information literacy, digital literacy; reading engagement; knowledge about children's and young adult literature; knowledge of disabilities that affect reading; communication and collaboration skills; digital and media skills; and ethics and social responsibility (IFLA, 2015). In addition to all these, the school librarian needs to possess creative and innovative skills to enable him satisfy the millenials, that is, the 21st Century learners effectively.

Three roles have been identified for school librarians in their schools: information specialists, teachers, and instructional consultants. Of interest here is their role as instructional consultants which includes their taking up leadership roles in the incorporation of technology in the school's instructional program as well as on the technology team and professional development of new instructional technologies, "instructing teachers and students in its (that is, technology's) optimal use" (AASL & AECT, 1988, in Wine 2016). To enable them play their roles effectively, it was suggested that school librarians needed to incorporate three broad concepts into school library programs; these are collaboration, leadership, and technology. Collaboration with teachers and pupils would facilitate genuine opportunities to integrate information literacy in learning through joint planning, teaching, and evaluation; leadership is promoted when school librarians "exert strong curriculum and instructional leadership" by encouraging information literacy and its importance in developing twenty-first century skills (AASL & AECT, 1998, p. 52 in Wine, 2016). Regarding the concept of technology, the school librarian is described as "a primary leader in the school's use of all kinds of technologies (both instructional and informational) to enhance learning" and acting as technologists to collaborate with teachers to integrate learning with technology. Technology is ubiquitous throughout today's schools and is a crucial tool in 21st century learning that is infused with numerous literacy requirements.

School librarians' competencies in the use of emerging technology are factors in their ability to take on the role of technology integration leaders. In essence, school librarians are saddled with the responsibility of getting up-to-date knowledge and information about latest technologies in education, understand their workings and get them integrated in their respective schools; sharing the technology competencies with the teachers and pupils in the school such that they also become competent in using such technologies. For instance, the mass shift from using blackboards (also known as chalkboards) in Nigerian schools to using marker boards and lately, electronic boards which have several features and are even Internet ready. Another example is the integration of Information and Communication Technology (ICT) into Nigerian schools' curriculum coupled with the provision of computer hardware and software and other accessories in some of the schools. Pupils are given assignments to solve online and especially, during the COVID-19 pandemic lockdown, classes were held online using different gadgets like computers, tablets, cell phones and so on. Furthermore, social media (WhatsApp, YouTube, Facebook, Telegram, Google Meet and others), radio and television were also adopted for online classes during the lockdown. Majority of public and private schools in Nigeria have since returned to the old system of physical classes in schools while only few private schools have been able to practice blended learning. It was quite noticeable that schools were not prepared for the COVID-19 pandemic situation at all; most public schools just barely managed to keep education alive

while only some of the private schools could actually adopt Information and Communication Technology (ICT) to a certain level.

Can one now conclude that school librarians in Nigeria are playing their role in technology integration in schools effectively? Response in the negative would take the greater percentage because many developing countries, especially in Africa, and including Nigeria, are still a long way from bridging the digital divide around integrating technology in education (Ajanma, 2016) and majority of schools in Nigeria have not embraced the use of technology in their classrooms especially before the pandemic, the magnitude of the effect of which no nation, individual or organisation was prepared for. As mentioned earlier, teaching and learning were done online, but for most public schools, education was via radio and television as majority of the pupils and teachers did not have computer or digital literacy and did not have appropriate gadgets to use Internet facilities while many private schools were still able to manage and cope with the adoption of online teaching. It is worthy to mention that even irrespective of the category of school (public or private), electricity supply still posed a major hurdle for many pupils and teachers; for the private schools, many teachers and students could not afford Internet data and the high cost of cell phones, tablets. Many also had to learn the use of these gadgets and required software applications impromptu on their own because of the situation. Majority of schools do not even have school libraries, not to talk of school librarians. The few schools that have school libraries have converted them into staffrooms for teachers or for other uses and may not even have professional school or teacher-librarians to manage them. Truly, after the lockdowns were lifted and schools reopened, nearly all schools quickly went back to physical classes with the chalkboard and textbooks continuing to dominate classroom activities (especially in public schools), since they lacked technologies for improved teaching-learning; school libraries; and the human, technology leader (that is, the school librarian) are also missing.

Factors militating against the effectiveness of school librarians as technology integrationists in Nigerian schools

There are many factors that serve as hindrances to school librarians' ability' to play their roles in integration of technology in Nigerian schools and Ajanma (2016) concluded that Nigeria had a very long way to go in the area of technology and its integration in her schools. There is no doubt that technology integration in schools will improve Nigeria's educational system and turn out better and skilled students; to face the challenges of the global economic environment, a competent and knowledgeable workforce with capability in the use of technology is essential. Some of the militating factors as they relate to the Nigerian situation are mentioned below:

- 1. Value placed on school librarians as professionals: Up till date, low value is placed on the role and position of school librarians (even librarianship as a profession), they are not considered a vital element in education. The important roles played by school librarians in ensuring a well-planned curriculum for the pupils and the turning out of information literate students from schools who will grow into responsible citizens are not deeply considered by the government at all levels, individuals and others. This area needs to be addressed as a matter of topmost urgency.
- 2. Perception of school librarians about themselves: School librarians must begin to see themselves as leaders in education and in the integration of emerging technologies in their respective schools; many are not willing to adopt or learn about technology and its importance to education and to librarianship generally and so their school libraries are not up to date at all. Teachers and the millennial generation whom they serve are so tech-savvy and have varied information needs to be met in formats other than just physical print materials; they want to be able to explore new realms of technology which actually meet and satisfy their needs faster and in a more interesting manner and this

- experience should begin from the school library, with the school librarian who is their starting point for lifelong learning and information literacy.
- 3. Professional training and development programmes for school librarians: School librarians need to learn, unlearn and relearn regularly because technology keeps evolving and newer improvements are springing up daily. They have to develop or improve their competence in the use of these technologies so that they can assist teachers and pupils to also use them confidently. As a result of this, librarians, particularly school librarians, must have access to adequate and relevant training programmes for their professional development because it is through these programmes that they get updated on latest events and developments in their field and education generally.
- 4. Infrastructure: This is also another major issue; infrastructure refers to those things or facilities which the entire citizenry should enjoy naturally as part of government responsibilities towards them such as electricity, potable water, good roads, healthcare and so on. However, in Nigeria, all these are luxuries as citizens do not access them just anyhow except the ones they generate by themselves, for instance using generators, solar inverter, digging wells and boreholes to access water and so on. Of particular interest in technology integration is electricity supply, which is highly irregular; whereas constant and adequate power supply is needed to be able to integrate technology in schools; computers, projectors, cell phones, tablets and so on all require electricity and electrical back-ups to function at all.
- 5. Cost: High cost of these technologies is another factor. Public schools are funded by the government while private schools have to source funds internally or from other sources to be able to meet financial responsibilities. Therefore, in order to meet up, most schools would always look for avenues of cutting costs and only address things they consider to be most pressing need(s) to them, many times at the expense of the acquisition of technology and training of school librarians, which are often not part of the top priority. Also, in most cases, government at whatever level in Nigeria (Federal or State) does not allocate enough budgets to education or even for the maintenance of these school libraries and their personnel.
- 6. Internet connectivity: There are inadequate or non-availability of internet access and limited bandwidth in schools (Ajanma, 2016). In developed countries, fast and regular Internet connectivity are part of the normal everyday life (as well as electricity and other infrastructures), but in Nigeria, apart from the high cost of data, which many are still not able to afford, the speed of connection is almost always an issue. When students need to go on the Internet to do assignments, projects and so on, and they get to the school library and they are not able to achieve much or even anything at all coupled with the fact that the school librarian is also incapacitated by this, they (that is, both the users and school librarians) get discouraged and in most cases abandon the use of technology.

Conclusion

Technology has a direct positive effect on Nigerian (and indeed global) students' learning and attitudes and teachers adopt its use to comprehend each student's needs as well as interests, and to raise the level and quality of mutual learning activities. Students use technology widely for research and writing coupled with instructional support in different subject areas. Technology has changed the way teachers work and for its adoption to be worthwhile or fruitful, it has to be integrated into schools. In conclusion, one can say (and research has shown) that school librarians in Nigeria are lagging far behind their contemporaries especially in the developed world and especially in the area of integration of technology into schools in the country. A competent, effective and well-trained library staff drives efficient, effective and prompt library

services. A well-trained and highly knowledgeable, innovative and creative school librarian can coordinate activities and ensure the proper integration of technology in the school library successfully because he/she would already have been familiar with such technology and understood its workings and therefore competent and confident to educate teachers and students. The role of school librarians in the integration of technology in Nigerian schools cannot be overemphasized; they are or should be the leaders in technology adoption and integration because they are the information specialists who are expected to inculcate information and digital literacies in the pupils and also ensure they are included in the curriculum by collaborating with the teachers in its planning and delivery.

Recommendations

- 1. To ensure the school librarian is able to play his/her part in integration of technology in schools effectively, the militating issues raised above must be urgently and properly addressed by the government, school owners (in the case of private schools, Non-governmental Organizations, the Nigerian Library Association (NLA), the Nigerian School Library Association (NSLA) and other relevant stakeholders. Of utmost importance is the fact that the government and all its agencies need to allocate more funds into the field of education since the government is the financial backbone of all the different sectors in the country. It must be ensured that school libraries employ professionals who are knowledgeable in the field and who will be able to discharge their duties professionally.
- 2. Along this line is ensuring that schools have well-equipped school libraries, computers and other relevant technological facilities for the school librarians to work with and also for students and other members of staff to explore. This initiative will also give the less privileged ones who ordinarily might not have been able to afford such technologies, to have access to and use them.
- 3. Regular and all-encompassing professional development opportunities on technology and integrating technology in Nigerian schools should be provided for school librarians and they should be encouraged to latch onto these opportunities in order to develop their critical thinking, innovation and technology skills (practical and functional knowledge of the computer, the internet and other relevant areas of Information and Communication Technology).
- 4. Additionally, library and information science educators should prepare future school librarians for their roles by integrating instructional technology into their programme, perhaps as part of a collaborative team with instructional technology specialists and relevant others.

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