Role of school media centres in technology integration in Nigerian schools: an exploration

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The study examines the role of School Media Centres (SMC) in technology integration in Nigerian schools. The historical research method or what some refer as historical inquiry was adopted for the study. It found that the School Media Centres have an indispensable role to play in this regard. However, several factors were discovered to militate against the realization of the centre’s full potentials. These factors include poor implementation of ICT in schools, lack of teachers’ confidence and teachers’ computer anxiety, lack of teachers’ competency due to lack of time for training, lack of access to resources, infrastructural challenges such as erratic power supply, and lack of technical support. If these militating factors are not addressed, the Centres may never be able to contribute meaningfully to technology integration in Nigerian schools. The study, therefore, recommends that a change in government attitude to technology acquisition, integration, and use; formulation of a sound ICT integration policy distinct from the general ICT policy; and improved funding among others are required.

Introduction

The School Media Centre (SMC) variously referred to as School Library Media Centre (SLMC), Instructional Resource Centre (IRC), School Resource Centre (SRC) and Educational Technology Centre (CET) is more than a place where students go to read. The school academic activities are supposed to be built around the centre. Govender1 refers to the centre as a centre of curriculum and learning development. According to the author, resource centre as centre of curriculum and learning development have a vital role within the school system in developing and sustaining teaching and learning. He argues that the role and functions of school resource centres are fundamental in promoting and enhancing the quality of teaching and learning in schools. Therefore, he opines that resource centres are not luxuries school systems can ill afford.

The centre is not just the place for reading; it is also a place for “research, study, preparation, production, and presentation”. It is invaluable in the achievement of the school’s goal. Of overwhelming importance to the School Media Centre in particular and the school project in general is technology. If the school is to achieve its set goals, it must appropriate necessary technologies. If the technologies are to be useful to all – teachers, learners, administrators etc - then, it must be integrated into the school system. But the questions that readily come to mind here are: What is role of the School Media Centre in technology integration in Nigerian schools? What are the problems militating against technology in Nigerian schools? And how can these factors be overcome?

Review of literature

The review here was done in two phases. The first phase focused on empirical review while the second phase laid a theoretical framework/foundation for the study.

Empirical review

The importance of technology in education in Nigeria and beyond has been well documented in literature (Imogie2, Ukeje1, Wilson & Peterson4, Amoo and others5, Ajelabi6, Yusuf7, Edutopia8, Etubi9, and Ali and others10). According to Ukeje11 technology could be useful in the areas of curriculum, courses and instructional planning and development. Technology,
instructional technology, in this case, can be used to improve instruction (qualitative), educate more people (quantitative), learn about learning (research), reform the curriculum (substance), improve the process (method), and articulate the system (structure).

However, for the full potential of education to be realized, technology would have to be fully and effectively integrated into it. Wilson & Peterson in their study, “Successful technology integration in an elementary school: A case study”, examined the impact of the technology on the school community. The study employed a variety of data collection instruments (classroom observation, surveys, and interviews of school personnel and students). It found “consistent evidence that technology plays an essential role in facilitating the school’s goals. It also found that, technology, when effectively integrated into the school system, positively affected students’ learning and teachers’ work and leads to “greater productivity.”

The study identified five phases of technology integration. These are: Entry phase, Adoption phase, Adaptation phase, Appropriation phase, and Invention phase. Certain factors that the researchers found to be “key elements” of successful implementation of technology integration in Peakview Elementary School, Progress Circle, Aurora (VS) were highlighted. The elements are:

- Computers abundantly available in the classroom,
- Shared commitment and vision of school reform with technology as an essential component,
- A supportive district and principal,
- A strong computer coordinator,
- Early and thorough teacher training,
- Taking computers home, and
- User-friendly systems.

Yusuf noted that “policy initiatives since 1988 have been targeted at ensuring the integration of information and communication technology (ICT) in the Nigerian school system. It found that the 2001 National Policy on Information Technology (Use IT) was defective and called for its review.

It also found that despite all the “policies” and “noise” on ICT integration in Nigeria, level of computer use in schools is still low, reasonable computer studies are yet to start in Nigerian secondary schools, the computer-student ratio is small, funding by government has not been encouraging, computer education syllabus is unpopular among students and parents and thus hardly implemented, teachers are inadequate to implement computer education, and teachers are not competent in basic computer operation. The study identifies basic factors militating against effective technology (ICT) integration in Nigerian schools and recommended solutions.

Yusuf submitted that all policy initiatives to encourage the use of information and communication technologies in Nigerian schools since 1988 have not yielded the needed results of improving teaching and learning and serving as a catalyst for change in Nigerian schools. He is of the view that ICT potentials for real change are great and realizable if certain steps are taken.

Ali and others examine “the conditions and level of ICT integration in Malaysian Smart Schools.” According to the authors the qualitative study attempts to describe the conditions that facilitated the implementation of Information Communication Technology (ICT) integration in the Malaysian Smart School and the problems that emerge during the process of integration are explained. They identify conditions essential for effective ICT integration. These conditions they classify into two, the essential conditions and the supporting conditions. The study finds that teachers in this study employed four levels of approaches in integrating ICT in the schools. Time, course content, and technical malfunction were found to be the main problems that the teachers faced during this process of technology integration.

Theoretical framework for the study

The study cut across several theoretical modes in sociology, anthropology, education, educational technology, ICT and communication. Of particular interest to the study are the innovation diffusion theory, system theory and technological determinism theory.

Particularly germane to the study is the innovation diffusion theory or what some refer to as Diffusion of Innovation theory. The theory focuses on how, why, and at what rate new ideas and technology spread through societies. The theory, according to Baran and Davis explains how innovations are introduced and adopted by various communities. According to them,
“when new technological innovations are introduced, they will pass through a series of stages before being widely adopted.” They described the process as below:

First, most people will become aware of them, often through information from mass media. Second, the innovations will be adopted by a very small group of innovators, or early adopters. Third, opinion leaders learn from the early adopters and try the innovations themselves. Fourth, if opinion leaders find the innovation useful, they encourage their friends – the opinion followers. Finally, after most people have adopted the innovation, a group of laggards or late adopters make the change.

The theory, they argue, assigns a very limited role to mass media in the innovation diffusion process. The media mainly create awareness of new innovations. It is only the early adopters that are directly influenced by media content while others adopt innovation only after being influenced by others. The theory recommended that diffusion efforts be lead by change agents. In the case of integration of technology in Nigerian schools, the School Library Media Specialists (SLMS) can act as a change agent. S/He can also help create awareness for the technology’s availability and its importance to the school.

It is the duty and responsibility of the SLMS to search for technologies that will be useful to the school. S/he should also be in a position to design and develop a technology plan as well as implement the plan. To do that s/he would have to mobilize and persuade the opinion leaders – the various tiers of government, school administrators, community leaders, industry leaders, celebrities, teachers etc – to support the effort.

However, the theory has its own drawbacks. First, the theory assumes that there are bodies (governmental or non-governmental) that are ready to support, fund, and advance the diffusion of the innovation. This is not always so. In Nigeria, there are quite a number of notable technological innovations that could promote learning but nobody is willing to fund their acquisition and use. For instance, the “magical board” could be a veritable tool for learning. As at the time of this study, only few private secondary schools such as British Lekki International Schools, Lekki; CTC, Ikeja; Pampers, Surulere/Lekki; and Green Spring Lekki/Anthony have the board. To the best of knowledge of these researchers, no public university has it.

Even when the government funds the diffusion of innovations in education in Nigeria, its agencies are usually not enthusiastic about promoting their integration and use. A good point in case are several equipment worth millions, if not, billions of Naira imported for the implementation of the 6 – 3 – 3 – 4 education programme are rotting away in several stores and warehouses across the country.

Another major drawback of the theory stems from its application. Baran and Davis pointed out that the theory facilitated the adoption of innovations that were sometimes not well understood or even desired by adopters. According to them, a campaign to get Georgia farm wives to canned vegetables was initially judged a great success until it was found that very few women were using the vegetables. They mounted the glass jars on the walls of their living rooms as status symbols. Most didn’t know any recipes for cooking canned vegetables meal and those who tried using canned vegetables found that family members didn’t like the taste.

From the foregoing, we cannot but agree with Baran and Davis that “mere diffusion of innovations didn’t guarantee long-term success”. In other words, it is not enough to diffuse innovations in education; the innovations must be properly integrated into the school system.

This is where the School Media Specialist comes in. That too is not enough; the School Library Media Specialist(s) must constantly follow-up to make sure that the integration around the technology work well. If not the result will not be too far from the case of India where “farmers adopted complex raw machinery only to have it breakdown and stand idle after change agents left” (Baran & Davis).

Objective of the study

- To find out the roles of a School Media Centre in technology integration in Nigerian schools.

Methodology

The study adopted the historical research method or what some refer to as historical inquiry. Historical inquiry, according to Amin17, is a systematic collection and evaluation of data related to past
occurrences for the purpose of describing causes, effects or trends of those events. It seeks to understand the past by studying documents, relics and interviews.” Documents employed in the study include books, journals, and internet based materials. The historical method was the most appropriate for the study because of its qualitative nature.

School Library Media Centre and technology integration in Nigerian schools

Technology is pervasive. It touches every part and every aspect of our lives; our works and recreation, our schools and even our homes. Despite the importance, whether at work or at play or in school, most schools seem to lag far behind when it comes to integrating technology into learning in Nigeria.

However, it should be pointed out that this is not peculiar to Nigeria; it is just that the Nigerian situation is much more pathetic. According to Edutopia18 “most schools (in America) lag far behind when it comes to integrating technology into classroom learning”. Yet, technology must be integrated into schools whether in Nigeria or elsewhere. This is where the school media centre comes in. According to Govender19 the school resource centre (or school media centre) is central in supporting the application of technology in education (hardware, software) and technology of education (teaching strategies, learning theories, teaching methods, etc). The primary role of the resource centre is to provide the expertise and facilitate the adoption of both technology in education and technology of education.

However, it should be noted that integrating technology into schools means “more than teaching basic computer skills and software programmes in a separate computer class. Effective technology integration must happen across the curriculum in ways that research shows deepen and enhance the learning process”20.

According to Edutopia21 effective technology integration must support four key components of learning. These are: active management, participation in groups, frequent interaction and feedback, and connection to real-world experts.

In other words, “effective technology integration is achieved when the use of technology is routine and transparent and when technology supports curricular goals.” The question that readily comes to mind here is what role or roles does/do School Media Centre play or should play in technology integration in Nigerian schools?

The School Media Centre has a significant role to play in technology integration in Nigeria schools. One of the major functions of the School Media Centre in technology integration in Nigerian schools is planning. The centre is expected to develop sound technology plan and technology integration. This plan will go a long way to guide successful technology integration.

According to Ajelabi22 and Imogie23 some of the functions of the School Media Centre especially at the university level is planning and carrying out research activities in the field of educational technology. Every planning effort must be preceded by research. A thorough technology audit will help the School Media specialist to determine the technology needs of the school and how best to satisfy the need.

Another function of School Media Centre in the technology integration is to serve as “a centre for the adoption, diffusion, and dissemination of instructional innovations” (technologies in this case). In addition, the centre has to collaborate with other educational media related centres and agencies within and outside Nigeria24, 25.

As far as technology integration is concerned, the School Media Centre is expected to help out in the area of design. Design according to Amoo, Ayodele and Egbowon26 is a careful selection of learning experiences, activities, media and method of instruction.

It is also the duty of the centre to implement that which has been planned and designed. However, this is usually done in collaboration with the teachers and other stakeholders especially the learners. It is very important to get all committed to the integration project especially the teachers. As Fullan (cited in Ali, Nor and Alwi27) put it, “teachers’ ability to cope with the school demands and their commitment to change are crucial in sustaining implementation” of technological integration plan. Implementation also involves the presentation of learning experiences to the learner in the classroom situation (Amoo, Ayodele and Egbowon28) by the centre so that the teachers can see the practicability and usability of the technology. “Seeing”, they say, “is believing”. The teachers would
have to be convinced and assured that the technologies will work, and that they are good for them and their students.

Closely related to the above is the training role of the School Media Centre in technology integration in Nigerian schools. If teachers are to use technologies provided, they have to be trained. According to Ajelabi and Imogie, the centre provides training workshops, orientation and seminars in the use of educational media for personnel in the universities and public schools. To underscore the importance of training in the integration of technology in Nigerian schools and to kick-start the implementation of the National Policy on computer education in 1988, a training programme was conducted for 197 teachers from across the country (Yusuf). But the question is what impact will 197 teachers make in a country with over 5000 secondary schools?

The School Media Centre would have to lobby, mobilize, and persuade all stakeholders to support the technology integration project in Nigeria. The various tiers of government (federal, state and local government) would have to be lobbied to make fund available to purchase the equipment and facilities or make them available. The support of all stakeholders is necessary to enhance successful and effective technology integration. According to Ajelabi, since these centres are the agents between the society and the university (including schools) they would have a task of developing public relations for better human relations with the society.

In addition, the centre should be fully involved in the mobilization of resources for the technology integration. It should “acquire and circulate educational materials”; and also “provide learners and teachers accessibility to equipment and multi-media for individual and group instructions” (Ajelabi). For successful technology integration, there must be infusion of the necessary technology such as networked micro-computers, computers, and related technology and software (Wilson and Peterson). As part of preparation for the take-off of the National Policy on computer education in 1988, computer systems were introduced into the Federal Unity Schools and Armed Forces Secondary Schools (Yusuf).

Impediments to successful technology integration in Nigerian Schools

The importance of technology in education cannot be overemphasized. Technology plays an essential role in facilitating the school’s goals (Wilson & Peterson). In addition, as they posit, technology is positively student learning and attitudes. Teachers are using technology to adapt to individual students’ needs and interests, and to increase the amount and quality of cooperative learning activities. Students use the technology extensively for research and writing activities, as well as for instructional support in a variety of subject areas. Technology has changed the way teachers work.

Despite the importance of technology in education, several schools in Nigeria still lag behind in the integration of technology. Several factors account for this situation. Soremekun (1979) cited in Ukeje identified five of such factors, especially as they affect the universities in Nigeria. These factors are organisational structures; infrastructural constraints; professional attitudes; university enrolment; and government policy.

In the same vein, Taiwo identified funding, equipment, lack of time and knowledge as some of the factors militating against effective integration of technology in Nigerian schools.

Yusuf listed the following as obstacles or barriers to technology (ICT) integration in Nigerian schools;

- Poor implementation of ICT in African school,
- Lack of teacher’s confidence and teacher’s computer anxiety,
- Lack of teacher’s competency due to lack of time for training,
- Lack of access to resources,
- Lack of time to use ICT as a result of school time table,
- Lack of technical support,
- Infrastructural challenges such as erratic power supply,
- Lack of or ineffective technological leadership in schools,
- Lack of clear vision,
• Lack of incentives for teachers,
• Exclusion of teachers in the planning for ICT integration, and
• Teacher’s technology beliefs are yet another obstacle.

Other barriers to effective technology integration in Nigerian schools include government indifference to technology acquisition, endemic corruption and natural resistance to change (from teachers, students, parents, community, government, and even from School Media Specialties).

Achieving effective technology integration in Nigerian schools: way forward

For technology to be useful to Nigerian schools, it must be effectively integrated into every facet of the school life. To achieve effective integration, we hereby make the following recommendations:

1. There should be a change in government’s attitude towards technology generally and educational technology in particular. Government (at all levels) should be fully committed to technology integration at all levels of our education. The School Library media specialist has a role to play here.

2. Government change of attitude should lead to improved, transparent and accountable funding for technology acquisition, integration and utilization in Nigerian schools. However, it should be pointed out that government alone may not be able to carry the financial burden. So, other stakeholders – private sector players, communities, religious organizations, international donor agencies, etc., should be encouraged to offer a helping hand in the funding.

3. A technology integration policy should be put in place distinct from the National Policy on Computer Education and ICT. The policy should provide a sound framework for technology integration in the country. It will help check haphazard technology acquisition and utilization in Nigerian schools. It will also align specific duty to specific organization/individual. The School Library Media Specialist should be in the forefront of the struggle for the formulation of this policy and its implementation.

4. More School Media Centres should be established across the country. If practicable, every school should have a standard, well-equipped, and well-manned media centre. Existing media centres should be up-graded to acceptable standard.

5. Adequate infrastructural support should be provided for the School Media Centre. There should be constant power supply to power the centres. Alternate power source such as solar, wind, etc., should be harnessed to power the centres.

6. Qualified and experienced School Media Specialists should be recruited to manage the School Media Centres. The specialists should be motivated and encouraged to keep abreast of latest developments on the field. They should be sponsored to attend regular training, seminars, workshops, and conferences where they should regularly upgrade their knowledge and skills. The teachers should not be left behind.

7. In addition, the School Media Specialists should be trained as change agents, mobilizes, fundraisers”, and public relations practitioners. This will enhance their capacity to perform effectively.

8. Concerted efforts should be made to domestic educational technologies. Well equipped and manned School Media Centres should be in a position to help in this regard.

9. School administrators should be involved at every stage of the technology integration project. They should be made to get committed and dedicated to the success of effective technology integration in Nigerian schools. They should be made to see themselves as partners – in – progress with the School Media Specialists.

10. All stakeholders – government, schools, industry, international agencies, non-governmental organisations (NGOs), religious organisations, Community Development Associations, schools’ host communities etc – should be mobilised to be fully involved in the technology integration project. No one should be left out.

11. Teachers should be mobilized to participate fully from conception to implementation and own the
technology integration project. They should be well motivated to adopt and use available technology in their daily activities.

12. Students should not be left out in the technology integration process. Since they are supposed to be ultimate beneficiaries, they should be made part of the process from the outset.

Conclusion

Technology has an indispensable role to play in the achievement of the school’s goals. It enhances the teacher’s productivity and makes learning more meaningful for the learners. It also makes the job of the school administrators easier.

However, if technology is to play its essential/vital role in Nigerian schools, it must be integrated into the school system. Recognizing the importance of technology to education, at least in theory, successive Nigerian governments formulate policies to integrate technology into Nigerian schools. School Media Centres were established in selected schools across the country. But not much has been achieved in this regard.

Several factors were identified as militating against effective technology integration in Nigerian schools. If these militating factors are not addressed, the full potentials of technology in education may never be realized.

To achieve the above, it is, therefore, recommended that there should be a change in government’s attitude towards technology acquisition, integration, and use; a sound ICT Integration Policy distinct from the general ICT policy should be formulated; and funding should be improved upon, among other solutions to the militating factors identified.

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