



SCHOOL SECURITY ARCHITECTURE IN THE ERA OF DIGITALIZATION: IMPLICATIONS FOR SAFETY IN PUBLIC SECONDARY SCHOOLS IN AWKA SOUTH LGA OF ANAMBRA STATE.

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Abstract

The Nigerian nation has witnessed various dimensions of security challenges in recent times to the extent that some States are labelled hot zones including Anambra State. More often than not, schools are targeted, sequel to this, quest for safety in school places becomes imperative. The study is therefore aimed at examining the school personnel awareness and availability of the school security architecture in an era of digitalization in public secondary schools in Anambra State, Nigeria. The study was guided by two research questions. The study adopted descriptive survey research design. The population of the study comprised the entire public secondary schools in Awka South LGA with 19 principals and 495 teachers (34 males & 461 females) totalling 514. Simple random sampling technique was adopted to select 10 principals (50%) and 396 teachers (80%) as participants. The respondents are principals and teachers of selected schools numbering 406. The instrument for data collection was designed by the researchers and named "School Security Architecture in an Era of Digitalization Questionnaire" (SSAEDQ). Validation of the instrument was duly certified through scholarly reviews. The reliability of the instrument was ascertained through test re-test method and the results therefrom exposed to Pearson Moment Correlation which yielded an index value of 0.82 which was adjudged adequate for this study. Mean statistics was used to answer the research questions. The findings of the study among others revealed that there is total lack of school security architecture in an era of digitalization in public secondary schools in Anambra State, Nigeria. Based on the findings, it is recommended that the appropriate agency and/or education authority should expedite action to provide and install digitalized security outfit to safe guide the school players from impending insecurity challenges that have bedeviled the entire nation Nigeria and Anambra State in particular.

Keywords: Safety School, Security Architecture, Era of Digitalization and Public secondary school.

Introduction

The security situation in Nigeria has so much deteriorated to the extent that insecurity has become a daily occurrence in almost every nook and cranny of the country. It has gotten to the stage where the perpetrators operate in the people's homes and/or roads in the broad day light and go scot free. There is hardly a day that will pass without hearing one ugly news or another. This assertion was corroborated by German, Obiekwe, Ogbo, Mbonu and Chukwu (2021) who espoused that more than 300 students from Government Science Secondary School, Kankara in Katsina State were kidnapped by the bandits on the 11th December 2020, in the same way 136 students were abducted by gunmen from Bethel Baptist High School in Kaduna State between June and July 2021. Kidnapping of five pupils, three teachers and a driver of Apostolic Faith School from their school bus in Ekiti State on 4th February 2024 and on March 7th, 2024 more than 130 students were abducted by armed bandits from LEA primary and secondary school in Kuriga village in Kaduna's Chikun district though they were all later released but the trauma has been internalized.

This is what prompted Yusuff (2020) to reiterate that people are no longer free moving about without being at the risk of being kidnapped or attacked by bandits. The scholar further affirmed that virtually every part



of the country is currently experiencing one form of insecurity or the other. There is no doubt that every nation of the world witnessed insecurity challenges but the rate at which it has spread in Nigeria is alarming. The security institutions are not left out as they are attacked, kidnapped, killed and most of the time the entire premises set ablaze. The incident of the killing of 16 soldiers in Okuoma community of Ugheli South local government of Delta on 14th March, 2024 speaks volume. These military personnel were deployed to the community for peace keeping when they met their untimely death at the hands of the hoodlums. Manga (2015) averred that security issues in schools include but not limited to; shooting, bombing, threats, kidnapping, abduction of the school actors, vandalism and raping. Udosen (2015) was not oblivious of the essence of school safety thus outlined them as under stated; it improves students' performance and attendance, creates friendly environment for learning which makes teaching and learning experience pleasurable.

The exacerbated insecurity in the country has thrown everyone in jeopardy. It becomes worrisome that the traditional security measures such as burglary proof, perimeter fence, security personnel and the use of dogs have been rendered inactive. There is need to explore other security measures such as the use of digital security architect that is capable of being hidden in secluded places to maintain surveillance. This is to allow security officers enough evidence to carry on with their investigation at the crime scene particularly in the school organization for safety school place. When this is achieved, the insecurity rate in the schools could be drastically minimized as the school children are usually beleaguered. In the light of the above declarations, Henry and Abang (2019) posited that the use of information and communication technology (ICT) could reduce to the barest minimum the security challenges facing school places while maintaining that schools where digital school security devices are used schools are free from insurgency unlike schools where they are not in use.

The theoretical framework for the study is Abraham Maslow's needs hierarchy.

This theory believes that human needs appear in a pyramid form starting from the most essential ones. Sequel to this are classified into two broad heading namely; the lower order needs and higher order needs. The lower order needs contains the ones pertaining to the necessities of life such as air, water, food, clothing, safety, shelter etc. while the higher order needs involves self-esteem and self-actualization. According to Maslow, these needs pop up in sequence as one must be satisfied before the next one crops up. From his narratives, having relatively satisfied the physiological needs, safety or security needs pops up. Safety needs include; personal, financial, health, wellness, safety against accidents and injury among others. It also involves need to be free from danger or harm. The individual seeks to live in a safe place with good neighbours, stable means of livelihood. It also involves freedom from fear, anxiety etc. safety and security needs act as motivators as soon as the physiological needs are relatively settled.

Security is an essential human need that requires satisfaction for one to be ready for studies. Educational delivery process extols in an atmosphere of peace and tranquillity which insecurity cannot provide. When students and teachers are threatened by the ravaging insecurity in the country, teaching and learning behaviour would be hampered leading to irregular attendance, missing school and summarily withdrawal thus mirrors poor enrolment profile. Of course no parent would want to sacrifice the ward on the altar of schooling. Insecurity could cripple education or even lead to closure of schools. This is the reason it is very crucial that the school security architecture in the digital era should equally be digitalized for safe school places not just in Anambra State but in the entire country as a whole.

This theory is related to the present study in that it involves the state of being safe/free from any form of danger, threat or hazardous environment which requires digital security architect that ensures that school environment is conducive for teaching/learning encounter. It brings safer environment when the security architect is digitalized in line with the global heightened technological advancement. There is no gain saying that digitalization of school security architecture could definitely result to safe school places when adequately installed for better teaching/learning outcomes. It is premised on this that the Maslow's theory of needs is considered relevant for the study.

A school is a building or buildings purposely erected for the main aim of inculcation of relevant knowledge, skills, morals and values to the learners so as to make them not only useful to themselves but to the larger society in due course. This is the reason the school should be free from any form of danger, threat or hazard so as to be able to achieve the set educational objectives. Secondary school in Nigerian context is the



intermediary education level between the primary and tertiary levels of education. It is a preparatory education level that prepares students for tertiary education. Secondary education is said to be public when it is established, managed, owned and funded by the government. The school as an academic institution requires very comfy, serene and tranquil environment to excel.

The school environment is safe when it is free from dangerous factors that pose threat to the life and properties of the school as an establishment. When the school is void of such perilous elements, it is said to be safe school place where teaching and learning flourish. Safe school place therefore refers to the type of school where the learners and facilitators move about freely without fear of attack, robbery and kidnap and or used for ritual purposes. It is a place where parents feel free to send their children without nursing any fear of any form of insecurity. It is a place where school children desire to go without being afraid of being faced with security challenge prevalent in the country. Team Varthana (2024) laid weight on the afore-mentioned assertion thus posited that general safety in a school is the provision of an environment that is safe from threats and dangers. UNICEF (2019) saw the essence of safe school places thus echoed that for quality education to be achieved, learning environment should be safe, healthy and stimulating.

In view of the above narrative, safe school place is the school with serene environment that is free from hazard and threat to life and property thereby promotes teaching and learning effectiveness. In corroboration with the above view point, UNICEF (2016) defined safe school place as the environment that ensures that all the school human elements feel safe, supported and secured while going to and back from school. The scholar went ahead to explain that safe school place includes that school place with adequate resistance and pliability to steer clear of disasters or to recover from them. Apparently, plans should be made and security outfit put in place before time to prevent security breaches and/or ameliorate the incidences of security challenges.

Security is the act of being free from threat, danger and/or enjoyment of freedom. Insecurity on the other hand is the act of being unsafe which implies insecurity. It is the state of being exposed to danger. The implication is that people are living in fear of the unknown. Afraid of being attacked, robbed, killed, kidnapped and maimed. It follows that under this insecurity circumstances, there is anger, acrimony, rancour and chaos which negates progress and development. Inversely, security situation breeds joy, peace and harmony under which progress and development prevail. In support of the above expression, Anebi and Igwebu (2018) identified security as an indispensable condition for the survival of man echoed that the Federal Republic of Nigeria is very much aware of the above fact thus enshrined in her constitution section 14(1) sub section (b) that she is obliged to take security and welfare of her citizens to be the primary function of the government. Considering the various dimension the insecurity in Nigeria has taken, Alamika (2016) however, contended that the government has fallen short of this ultimate obligation.

The attacks by these hoodlums are mostly targeted at educational institutions as has been the case in so many schools, where students, teachers and other school actors have been massively kidnapped. In most cases many do not come back alive. This has led to closure of such schools which is a bottle-neck in achieving educational objectives. It is premised on this that Ibrahim and Mohammed (2019) advocated that safe school environment is safety from physical or psychological harm. It is only when safety is guaranteed in schools that educational objectives could be maximally attained. There is therefore, utter need to ensure that strategies for reducing insurgent attacks and/or kidnapping in educational institutions are put in place if and if educational objectives must be achieved. Most Nigerian schools have set up traditional security architecture of various magnitudes to secure the life and property of the human elements in the school especially the innocent children. Apart from traditional security provisions such as perimeter fence, installation of burglary proof and employment of security men, all of which have proved abortive. There is also the need to improve the school security architecture in an era of digitalization in public secondary schools.

Digitalization is the process of moving from the analogue system to the digital system which was brought about by the spatial rise in the technological advancement globally. It is an innovation that is digitally manifested in different works of life which insecurity is one. Security architect in the digital era is the period that witnessed massive use of digital security devices which among others include: closed circuit television (CCTV), Scan Cards, Buzzer system, surveillance camera, vape detector, tracking device, intercom and computer (Ibrahim and Mohammed, 2019). In alignment with the above elucidations, Henry and Abang (2019) affirmed that e-security is the kind of security outfit that is electronically based. Continuing, Akpabio and



Ogiriki, (2017); Henry, Echa and Alfred, (2017) gave examples of electronic security device to include: security camera, biometric machine, electric fence, computer system and audio device which are utilized by the security personnel to monitor and safe guide environment.

Obiekwe and Uwaezuoke (2023) opined that security device has to do with technological security measures which deal with the application of digital devices to further prevent or rather reduce incidences of insecurity thereby promote security and safety in school places. The scholars gave examples of digital devices to include; protective lighting, alarm system such as motion sensor alarm, vibration detector, a sensor alarm on a door or via infrared and motion detectors in schools. Other digital devices are thermal imaging technology, facial recognition software, gunshot detection devices, and automatic gate control system among others

Going further, Team Varthana (2024) aptly affirmed that strong security measures could ensure safe school places. The scholar while exploring some fundamental precautionary school security architecture for safety of all the school players in the school premises listed the following;

1. Access control systems; just as the name suggests dictates who should have access and who should not. Access control is a digital device that controls who comes in and out of the school compound. It is the first point school security. It is an advanced technology that provides key card entry systems and biometric authentications. This makes it possible for access to be granted only to authorize persons thereby denying access to unauthorized individuals into the school premises. This system is gradually replacing lock-and-key systems.
2. Surveillance systems; this is a situation where surveillance cameras are placed in crucial areas to assist in minimizing cases of threat and providing evidence during occurrences. These surveillance cameras are installed on decisive areas such as access point, corridors or parking lots.

Similarly, Hassard (2013) posited that to achieve safety in school places, video camera and other ICT devices should be installed in the classrooms as well as the entire school premises. Henry et al (2017) while corroborating with Jack stressed that the use of biometric has also been identified as a tool to providing adequate security in school places. Andrew (2016) added that Internet of Things (IoT) could also foster safety in school places through its monitoring and tracking capacities which is ICT based. Global System Mobile (GSM) this is the process of making emergency calls, messages, voice notes, video calls or audio to security personnel alerting them of the security challenges on ground for quick intervention.

School being the buildings and environment meant for teaching and learning requires every atom of tranquillity and chill which is void of fear, threat or tension. This is to ensure that teaching and learning encounter triumph and the educational goals achieved. Going by the prevailing circumstances as it relates to accelerated insecurity problems in the country and Anambra State in particular which has become daily occurrence. Anambra State being one of the hot zones in the country should ensure there is digitalization of school security devices in the public secondary schools. There is absolute need to ensure that schooling do not go into extinction for reason of exposing their children to dangers of kidnapping, bombing, other forms of torture and shooting which many schools in Nigeria have been exposed to. If nothing is being done about guaranteeing the safety of school places, there would be poor school attendance leading to poor enrolment rate and summary withdrawal of students. The reason is explicit because no parent would want to lose the child under the altar of schooling.

Another plaguing issue as identified by Uwaezuoke (2020) is the challenges facing educational planners which include but not limited to unfair interference by political big-wigs who make educational planning appointment based on political affiliation. The scholar emphasized that these set of politicians when appointed are incompetent and do not know the processes and procedures to achieve a better plan. In this regard, the school heads should direct and pressure them on critical areas of the school needs such as the school security architecture in this digital period. This implies that the public school administrators should be knowledgeable on the school digital devices so as to make requisitions for their provision for safety school places that promotes classroom behaviours.

There is speculation that some of the school personnel which the school administrators belong, do not place demand for the installation of these essential devices since they are not aware of some of their existence so as to include them in their budget. The researchers are worried that insecurity when left unchecked could consume the entire populace. There is need to device a more advanced medium of tackling security challenges



hence the need to ascertain if principals and teachers are awareness of the digital security outfits and be able to identify them. This would enable them to request for the installation of e-security devices and ensure that what they bargained is given to them for safety school places.

Purpose of the Study

The study is aimed at determining the school personnel’s awareness and availability of security architecture in the era of digitalization in public secondary schools in Awka South LGA of Anambra State. Specifically, the study is determined to;

1. Ascertain the personnel level of awareness of various digital security devices by the school personnel in public secondly school in Awka South LGA of Anambra State.
2. Identify the availability of digital school security architecture in the era of digitalization by school personnel in public secondary schools in Awka South LGA of Anambra State.

Research Questions

The following research questions were raised to guide the study;

1. What is the school personnel level of awareness of the various school digital security devices in public secondary schools in Awka South LGA of Anambra State?
2. What is the availability of digital school security architecture in the era of digitalization by school personnel in public secondary schools in Awka South LGA of Anambra State?

Methods

The study adopted descriptive survey research design. The population of the study comprised the entire public secondary schools in Awka South LGA with 19 principals and 495 teachers totaling 514. Simple random sampling technique was adopted to select 10 principals (50%) and 396 teachers (80%) as participants. The respondents are principals and teachers of selected schools numbering 406. The instrument for data collection was designed by the researchers and named “School Security Architecture in an Era of Digitalization Questionnaire” (SSAEDQ). Validation of the instrument was duly certified through scholarly reviews. The reliability of the instrument was ascertained through test re-test method and the results therefrom exposed to Pearson Moment Correlation which yielded an index value of 0.82 which was adjudged adequate for this study. Four point weighting scale of Fully Aware [FA=4], Aware [A=3], Not Aware [NA=2] and Not Fully Aware =[NFA=1]. The criterion mean= $4+3+1= 10/4= 2.5$. it stands to reason that any mean score of 2.5 is regarded as Aware[A] while anything short of 2.5 is taken as Not Aware[NA] for table 1 in like manner, table 2 employed ‘Available’ and ‘Not Available’ with Percentages. The bench mark is 50% . Fill-on-the-spot technique was adopted coupled with frequent visit to the schools thus all the copies of questionnaire distributed were retrieve giving 100% return rate.

Results

1. What is the school personnel level of awareness of the various school digital security devices in public secondary schools in Awka South LGA of Anambra State?

Table 1:Mean Scores of the Principals’ and Teachers’ on the level of awareness of the various digital security devices.

S/N	Item statement:	FA	A	NA	NFA	Mean	Rmk
	What is your level of awareness of the following school digital security devices?						
1	Video camera	38	49	136	183	1.85	NA
2	Surveillance camera	164	106	50	86	2.85	A
3	Electric fence	128	103	86	89	2.66	A
4	Intruder alarm	88	82	150	86	2.05	NA
5	Biometrics	71	90	155	90	2.34	NA



6	Tracking device	74	101	125	106	2.35	NA
7	Access control system	89	83	138	96	2.40	NA
8	Scan cards	90	77	132	106	2.36	NA
	Grand mean					2.10	NA

Table 1 presents school personnel level of awareness of the digital security devices in public secondary schools in Anambra State as shown on items with serial numbers 2 and 3 (awareness of surveillance and electric fence) having their mean scores above the criterion mean of 2.5. However, items with serial numbers 1, 4-8 were not aware of video camera, intruder alarms, biometrics, tracking device, access control system and scan card as digital school security devices with all their mean scores fallen below the criterion mean of 2.5. The grand mean yielded 2.10.

2. What is the digital school security architecture in the era of digitalization available in public secondary schools in Awka South LGA Anambra State?

Table 2: Mean scores of the Principals and Teachers on the availability of school digital security architecture in the era of digitalization in public secondary schools in Anambra State.

S/N	Item Statement: what is the availability of the following school digital security devices in your school?	Available	Not Available	%	Remark
1	Video camera	Nil	406	100	Not Available
2	Surveillance camera	Nil	406	100	Not Available
3	Electric fence	Nil	406	100	Not Available
4	Intruder alarm	Nil	406	100	Not Available
5	Biometrics	Nil	406	100	Not Available
6	Tracking device	Nil	406	100	Not Available
7	Access control system	Nil	406	100	Not Available
8	Scan cards	Nil	406	100	Not available

Table 2 indicates that none of the school digital security architecture exists in the public secondary schools in Anambra State in this digital period. This is shown in items with serial numbers 1 to 8 with the percentages of 100% which is clearly above the bench mark of 50%.

Discussions

Following the data analysis, the first finding of the study revealed that most of the school personnel are not aware of the various digital school security devices for safety school places in Awka South LGA of Anambra State. Being aware of the digital school security devices is a gate way towards being security conscious. This is imperative because sound educational delivery process and its concomitant goal achievement can only be attained in a serene and danger free school environment. This is why Team Varthana (2024) laid weight on the afore-mentioned assertion thus posited that general safety in a school is the provision of an environment that is safe from threats and dangers. UNICEF (2019) saw the essence of safe school places thus echoed that for quality education to be achieved; learning environment should be safe, healthy and stimulating.

The second finding revealed that none of the school digital security is available in the public secondary schools in Anambra State. The alarming increase and dimensions of insecurity in the entire State warrants digitalized security devices that could assist in curbing the insecurity ravaging the populace with school places not an exception. The need for availability of school digital security outfit is what compelled the likes of Hassard (2013) who posited that to achieve safety in school places, video camera and other ICT devices should be installed in the classrooms as well as the entire school premises. Based on the development, Henry, Echa and Alfred (2017) stressed that the use of biometric has also been identified as a tool to providing adequate security



in school places. Andrew (2016) added that Internet of Things (IoT) could also foster safety in school places through its monitoring and tracking capacities which is ICT based.

Conclusion

Stemming from the findings, it is concluded that most school personnel are not aware of the digital school devices in this digital era which resulted in non-availability of this essential tool in combating insecurity in the school places in the area under study.

Recommendations

In view of the findings of the study, the following recommendations were made:

1. The relevant education authority should mount an intensive awareness campaign on the various digital school security devices for safety schools so as to imbue with the school players the spirit of security consciousness.
2. The school agencies responsible for procurement and distribution of school facilities should deem it very crucial and as a matter of necessity ensure that digital school security outfit be quickly installed in public schools in Anambra State to foster safety school places.

References

- Akpabio, M.E. and Ogiriki, I.B. (2017). Teachers use of information and communication technology (ICT) in teaching English language in senior secondary schools in Akwalbom State. *Equatorial Journal of Education and Curriculum Studies*, 2(2); 28-33.
- Andrew, M. (2016). How IoT in education is changing the way we learn. www.businessinsider.com.
- Anebi, J.N.P. and Igwebuikwe, F.K. (2018). Security challenges and management strategies in public secondary schools in Aba Education zone of Abia State. *Journal of Economics and Environmental Education (JEEE)*, 3(1); 95-106 ISSN: 2315-6821
- Alamika, W.E.O. (2016). Security challenges and university system in Nigeria. <https://www.university-of-josinstitutional-repository.org/2/9/2017>
- Henry, E.B. and Abang, U.A. (2019). An assessment of implementation of e-security in Nigerian school environment: The case of some selected States in the North East Nigeria. *Equatorial Journal of Education and Curriculum Studies*, 3(1); 23-27.
- German, I.O., Obiekwe, K.K., Ogbo, R.N., Mbonu, O.A., and Chukwu, R.N. (2021). Extending e-administration capabilities for safe school management using ICT peripheral devices in secondary schools in Ebonyi State, Nigeria. *European Journal of Education Studies*, 8(5) 357-374.
- Henry, E.B., Echa, E.A. and Alfred, M.A. (2017). The importance and challenges of biometric machine in school supervision. *Equatorial Journal of Education and Curriculum Studies*, 2(2); 34-39.
- Ibrahim, M. And Mohammed, G.I. (2019). Application of modern security devices in senior secondary schools: A tool for addressing safety schools management under insurgency. *International Journal of Trend in Scientific Research and Development (IJTSRD)*, 3(2); 1052-1062. ISSN: 2456-6470.
- Jack, H. (2013). Camera in the classroom. A good idea? [Nepc.colorado.edu/...](http://Nepc.colorado.edu/)
- Manga, S.D. (2015). Safety and security consideration in school plant construction in West Africa: Implication for research and Development. A paper presented during the tenth international conference and development, held at Sale Audio Visuelle University of AborneyCalavi, Cotonou, Republic of Benin on the theme: Research for sustainable development: strategies and procedures for developing nation from may 12-13.
- Team Varthana (2024). Top 10 essential security measures for schools to implement. ww.varthana.com
- Udosen, N.P. (2015). Importance of school safety to teaching and learning process. <http://amse.wardress.com>
- Uwaezuoke, M. I. (2020). Planning and administration: Panacea for effective educational management in Nigeria. *Multidisciplinary Research Reports from Africa*, 86-91
- UNICEF (2016). Introducing the safe school's place initiative in Nigeria. UK: UNICEF.
- UNESCO (2019). Apply law and ethics in professional practice. <http://www.vvo.org/education>
- Yusuff, A.E. (2020). Educational planning: A tool for promoting security in Nigeria. *Studies in Educational Planning and Administration*, 8(3); 39-46.