

Technological Strategies to Mitigate Insecurity in Nigerian Schools: Implications for Educational Administrators

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Abstract: The paper discusses technological strategies to mitigate insecurity in Nigerian schools: implications for educational administrators. The paper observed that there is prevalence of insecurity at all levels of Nigerian educational system which poseS serious threats to human lives and properties. Though, several human efforts made to curb the ugly menace have been futile overtime, the 21st century which is driven by technological innovations has provided a paradigm shift from human to technological innovations in the ways of during things in all life endeavors. It is believed that effective utilization of technological devices will ameliorate the scourge in Nigeria as a third world country to provide a safe haven for implementation of policies and programmes in the education sector as obtainable in advanced countries of the world. The paper identified the use of technological devices like: CCTV surveillance, biometric identification, panic alarm system, metal detectors, GPS tracking, and cyber security measures as means to check the prevalence of insecurity in Nigerian schools. The paper therefore suggested that provision of these devices in schools and continuous professional development of security personnel on the use of the said devices will foster much hope to check the perverse insurgency in the educational sector in Nigeria.

Keywords: Insecurity, Technology, Mitigate, Schools, Administrators.

Introduction

Nigerian schools in recent times has been under siege of violent attacks that ranges from kidnapping staff and students as well as destruction of facilities to outright bombing which usually claim lives and properties. For instance, the operation of the Boko Haram sect in North Eastern Nigeria has left many scars of woes. In April 2014, 276 girls of Government Secondary School Chibok, Bornu State were abducted in their hostel, and kidnapping of five lecturers at the University of Abuja staff quarters on 2nd November, 2021 (Onyiri & Walson, 2021). This internationally well-published cases of school kidnapping brought a new dimension to Nigeria's insecurity challenge as many secondary schools and higher institutions attacks have been recorded thereafter. There are several cases of kidnapping and killing of students and teachers. It was reported that on February 17th 2020, 42 people including students, teachers and their families from Government Secondary School Jangebe, Zamfara State, were abducted (Eons, 2020); The Global Coalition to Protect Education from Attack (GCPEA, 2020) reported that on March 11th and 14th 2013, unidentified attackers set ablaze and burnt down Gwange I and III Primary School in Maiduguri City, Bornu State respectively; GCPEA (2020) also reported that on 23rd March, 2013, persons believed to be Boko Haram, burnt down three private schools in Biu town, Bornu State at night, while Iheamnoch (2015) reported that five secondary schools teachers were kidnapped in a school in Rivers State leaving the students and the people in the area in total fear and tension. These are serious threat instance in Nigerian schools.

Some schools are forced to close down, while others operate epileptic services because of fear for threat to life. Recent statistics showed that about 2,295 teachers have been killed and 19,000 others displaced in Bornu, Yobe and Adamawa States between 2009 to 2018, while an estimate of 1,500 schools had been destroyed since 2014, with over 1,280 casualties among teachers and students (Adesulu, 2019). The rate of school dropout increases on daily basis. In the light of recent insecurity challenges in Nigerian schools, the safety of both lecturers and teachers in universities is worrisome. The effects of these attacks have exacerbated the fragile school system which is antithetical to the sustainable national development. Several measures have been implemented to tackle this menace yet there are still frequent attacks being experienced in the school environment. Efforts made by government and educational stake holders to address this issue include deployment of security forces to schools and implementation of policies aimed at enhancing a safe school environment for teaching and learning to thrive. If these incessant attacks are not proactively dealt with, it will portend a longer-term danger to quality of labour force and human capital needed to drive a sustainable economy in Nigeria in the near future.

The need to place on red-alert by state actors to devote adequate attention on technologically innovative measures towards ameliorating this menace becomes imperative. This paper have highlighted the urgent need to adopt technology-mediated strategies as a promising solution to address the issue of insecurity in Nigerian schools to ensure that safety of staff, students, and properties is guaranteed. To properly discuss the issues in this paper, it will explore the concept of insecurity, technology, technological strategies, and implications of the use of technology mediated strategies to school administrators in Nigerian schools.

Conceptual Clarifications

Insecurity

Insecurity is a state of fear from danger or threat. Insecurity is absence from freedom and resilience to potential harm caused by others. Insecurity is synonymous with feelings of being unsafe, absence from freedom and susceptible to dangerous attacks and infliction of physical bodily harm. Manga (2019) described insecurity as a state of fear of impending danger and actual experience of harmful activities that are destructive to lives and properties. Insecurity does not provide a safe climate for people to work for high productivity. Insecurity is an antithesis of security. The Oxford Advanced Learner's Dictionary (2015) defined insecurity as "a state of fear against attack, and danger, etc." In the words of Paul (2015), insecurity is a state of being subject to danger or injury, anxiety, fear, worry, uncertainty, and unsureness. Insecurity is generally perceived as human insecurity. It is the state of emotional unrest which flows from the opinion every one forms about his unsafe state. In actual sense, insecurity could be seen as a great feeling of danger that something of value would be taken away from an individual, group or nation without their consent. Eugene (2001) also added that human insecurity involves such values as infringement of human rights, absence of good governance, inaccessibility to education and health care which limit individuals the opportunity and choice to meet their potentials. Those who suffer from insecurity may be persons and social groups, objects and institutions, ecosystems or any other entity or phenomenon vulnerable to unwanted threat to life. Insecurity infuses a situation where individuals are not safe or protected to carry their duties maximally. Therefore, in the conventional sense of the term, insecurity is a situation where a thing or a person is exposed to any danger, risk of physical or moral aggression, accident, theft or deterioration etc. in this context, insecurity is concerned with feelings of uncertainty, fear, anxiety, danger, injustice or threats to life which deter the implementation of policies and programmes in the education system.

The contrary is that the security of teachers and students would imply presence of factors in the environments that enhance peace and happiness so as to spur the teachers to effectively function in their duty posts. It therefore confirms that safe school environment rages peaceful co-existence, positive school climate, cordial interactions among leaders and teachers, teachers and principals, students and students, and teachers and students School security is a school

environment that guarantees the safety of lives and properties of stake holders in the school. It is an environment that ensures peace of mind to staff and students that would spur them to function effectively in the school. That was why Shuaibu (2015) submitted that a safe school is one that breeds peaceful, positive or cordial relationship among students, teachers and administration. School security is safe school environment which encourages peaceful co-existence, positive school climate, cordial interactions among teachers and teachers, teachers and principals, students and students, and teachers and students for the overall benefit of the school. The school environment in which teachers and students inhabit ought to be safe, friendly, calm and free from external and internal insecurity. It has been noted in Akintunde & Selzing-Musa (2016) that no matter the extent of efficiency and effectiveness in any administration, the school may not succeed in getting the cooperation of devoted teachers without security. Therefore, high teachers' productivity thrives in the atmosphere of peace, unity and security but in the environment of insecurity, teachers' productivity may be very low.

The situation in Nigerian schools of recent is characterized by insecurity where lives and properties are not protected and teachers and students work in fear of being harmed on daily basis. On a daily basis, the media has continued to highlight and discuss incessant cases of armed robbery, kidnapping, bombing, abductions, rape, cult activities in school environments which have become regular occurrences and have characterized life in our schools (Nwangwa, 2014). Instances abound where some states in the Northern part of Nigeria such as Yobe and Damaturu Metropolis have been invaded by Boko Haram – a terrorist Islamic group who refused to accept Western Education. Consequently, the activities of this group of terrorists have forced many children and teachers to flee from their schools and environments for safety in response to the law of nature which Peretemode (2001) argued that the school environment safety and security condition no doubt affects both teachers' and students' response to teaching and learning, as self-preservation is nature's first law. Every living thing has a tendency to preserve itself, as it responds to danger.

Insecurity makes people to work in an environment that is harmful and pose threat to lives. Insecurity is a threat to learning and the prevailing peace within and around the schools which often has ripple effects on effective teaching and learning and activities of such schools (Akintunde & Selzing-Musa, 2016). A state of insecurity is very disastrous and the effect it could have on the lives of individuals is appalling. When insecurity is experienced in the school environment, it leads to low teachers' productivity and consequently poor students' performances. Whenever people have a feeling of self-doubt, or feel vulnerable and susceptible to injury or harm particularly for a sustained period, insecurity is at work. An emerging or subsisting threat to one's comfort, physical, psychological, emotional wellbeing and related others tantamount to insecurity. Whenever and wherever people feel that they cannot be certain of not being harmed whether physically, psychologically or emotionally, there is insecurity.

Following the United Nation's Sustainable Development Goals (SDGs), government plans to invest in education to fill the skills gap in the economy by ensuring access to basic education for all, improve the quality of secondary and tertiary education, and encourage students to enroll in science and technology courses. However, the prevalence of school attacks in Nigeria reveals the dwindling capabilities of state actors to achieve sustainable development and national security (Okoli, 2013), however it is perceived that the use of technology mediated devices will ameliorate the scourge.

Technology

Technology refers to the tools, techniques, methods and systems that are developed through scientific and engineering knowledge to solve problems or improve existing processes in various fields. It encompasses a wide range of applications and tools, including hardware, software, and infrastructure, that are designed to enable the creation, processing, storing, and exchange of information or to perform specific tasks efficiently. According to the Chambers 21st Century Dictionary, Technology is the practical use of scientific knowledge in industry and everyday life.

According to Metiri (2019), technology the application of scientific knowledge to the practical aims of human life or, as it is sometimes phrased, to the change and manipulation of human environment. Therefore, technology is the way we apply scientific knowledge for practical purposes. It includes machines (like computers) but also techniques and processes (like the way we produce computer chips). It might seem like all technology is only electronic, but that's just most modern technology. Some common technologies include: smart phones, computers, robots, internet, medical equipment, projectors, and cameras etc. The use of technology has greatly impacted human life, shaping the way we work, communicate, learn and live. In this context, technology refers to the application of digital technologies and procedures to check security threats in the school system in Nigeria. In contemporary society, technological growth is taking over as a formative influence in school administration in teaching and learning, and proving security measures in school environments for peaceful co-existence. It is believed that the introduction of sophisticated security technologies would reduce the spate of insecurity in Nigerian schools.

Technological Strategies to Curb Insecurity in Schools

There are several technologies deployed to nip security threats in schools in advanced countries of the world. Acumba (2019) identified the following technological strategies to curb insecurity in Nigeria Schools. They are: use of CCTV camera, sensor network, biometric scanner, metal detectors, panic buttons, GPS tracking devices Access control system, Alarm system, and cyber security technologies like block chain, web security, and firewalls.

Close Circuit Television Video (CCTV): These are cameras used to monitor the premises of the school. They are placed at strategic locations around school premises and offices, hallways, entrance, and classrooms to monitor activities of people within the area. Daily coverage are saved and recorded for reference purpose in case of any eventuality. These cameras now either cover more area with a single camera or provide more detail within the traditional field of view. The increasing resolution, even with improved encoding efficiencies, requires more and more bandwidth and storage. New technology, called Region of Interest (ROI) Encoding has been developed to resolve this issue by providing the highest image quality on the areas or a scene or objects of most interest while reducing the quality level in uninteresting areas to provide the highest quality/lowest bandwidth results.

There are many surveillance situations where there is ROI and background information in the same scene. In this white paper, two types are presented, the manually enabled ROI and ROI triggered by intelligent analysis on the image.

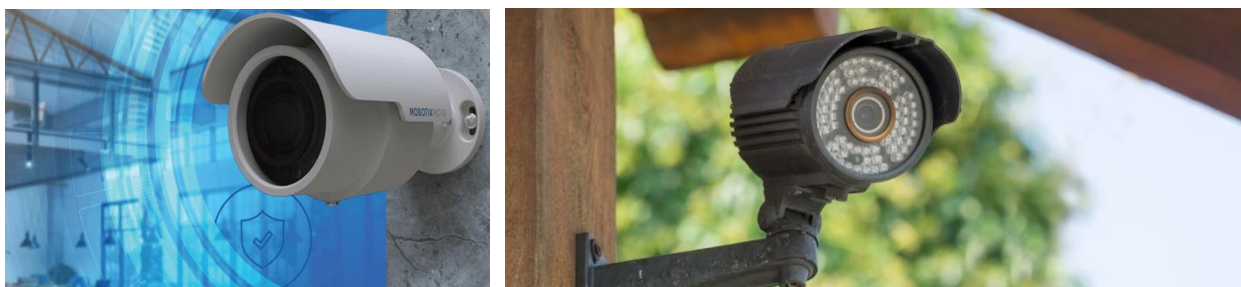


Fig 1: Hikvision DS-2CE15A2P(N)-IR day/night bullet IR CCTV camera with 700TVL horizontal resolution.

Creation of Sensor Network: This is a technology were a smart card is inserted into students' identification card. With this technology, student's activities are monitored within the school environment.

Biometric Scanner or Access Control System: Biometric scanner, such as fingerprint or facial recognition scanners can be used to control access to certain areas of the school such as the main entrance of school gate, computer laboratories or administrative offices. This technology can help to prevent unauthorized access to sensitive areas. For effective use of biometric scanner,

students and regular visitors' biometric information are collected for proper recognition by the scanner. Unidentified persons cannot gain access to the school premises as anyone entering the school must be identified. This technology prevents unauthorized access to sensitive areas, such as computer rooms, laboratories, and administrative offices.



Fig. 2: Facial Recognition Access Control (using biometric scanner) with 3 inch LCD touch screen; resolution 480×272, and With 2 MP wide-angle dual lens, white fill light, IR light

Metal Detectors: These are technologies that are used to detect weapons or other dangerous objects that may be brought into the school. These detectors can be placed at the entrance of the school or in other strategic locations around the premises. The use of these devices prevents students from entering to the school with guns and other dangerous weapons. The use of metal detectors in schools, particularly elementary schools, is still rare, according to the National Center for Education Statistics in West African Countries. During the 2019-2020 school year, less than 2% of public elementary schools performed random metal detector checks on students¹² January, 2023. In Los Angeles, California, schools the possession rate of weapons decreased 25% since the input of metal detectors (www.arc.org, "Research on violence"). Metal detectors, if put in schools, can prevent violence. In schools where gang violence occurs, metal detectors can help make them safer. Metal detectors, if used responsibly can prevent violence in schools by eliminating the possessions of weapons that can cause great harm. The use of metal detectors can alert a screener of the possession of weapons before they get into schools and other public places. If metal detectors can diminish school violence by stopping the possession of weapons they need to be installed in schools they can help prevent the use of bombs in schools and public places.

Panic Buttons: Panic buttons are emergency alert devices that can be installed in strategic locations such as classrooms, offices or other areas in the school to allow individuals to quickly and discreetly call for help in case of emergency. In the event of an emergency, such as a security breach, a student or staff member can press the panic button which sends an immediate alert to the school security team or law enforcement agency.

Cyber Security Technologies: These are technologies used to protect organizational data saved in websites, cloud, and emails from been destroyed or hacked. Some of these technologies are block chain, web security, and firewalls.

- i. **Block Chain:** This is a system of storing information in a way that is difficult to hack cheat of manipulate using classifies passwords.
- ii. **Web Security:** This is a mean of protecting people who use web channels. The internet is a mean of connecting with others for sharing information and files, however, internet user can become victims of cyber rimes if they are not well informed. Therefore protective measures and protocols must be adopted to protect the school from cyber criminals. With web security, data leakage to unauthorized persons or access in guaranteed.
- iii. **Firewalls:** These are network security devices which monitor incoming and outgoing network traffic to allow or block specific traffic according to set defined security rules. Firewalls can be software, hardware, or both.

GPS Tracking Devices: GPS tracking devices are used to track the movement of school buses and students. The devices can be installed in school buses or given to students as wearable devices. This helps to monitor the location of the students and school buses in real-time, which can be useful in the event of an emergency or security breach.

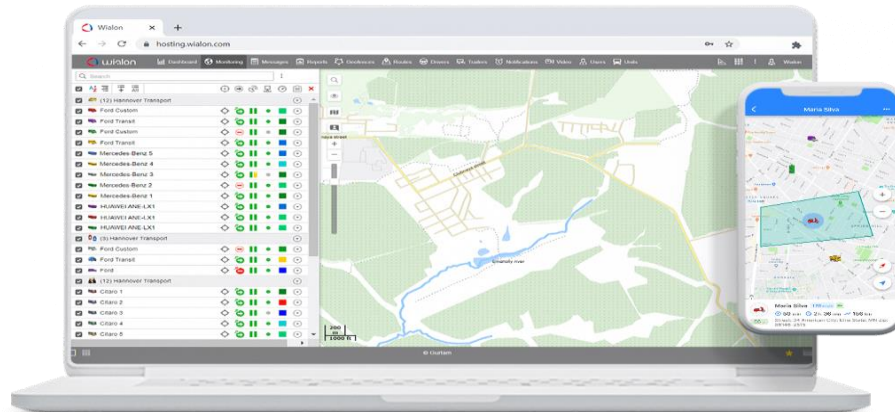


Fig. 4: GPS Wialon platform tracker

Implications of Technological Strategies to curb Insecurity on School Administrators in Nigerian schools

In contemporary times, the administration of schools in Nigeria is under threat because of high level of insecurity. Samuel and Chukuma (2015), noted that the 21st century school administrators face a lot of challenges in executing their administrative tasks due to insecurity. The task of school administrators such as providing leadership for curriculum development and instructional improvement, creating conducive environment for the realization of human potentials, influencing the behavior of staff, supervising instructional activities and controlling the financial management of the school needs has been severely hampered by insecurity. The use of technological devices in Nigerian schools as in developed countries of the world will perhaps ameliorate the stress on school administrators from emotional fear and give them a sense of relief as these technologies can provide detective measures which human efforts cannot guarantee to some extent. The following are some of the implication of using technological devices to curb insecurity on educational administrators in Nigerian schools.

1. It gives a sense of relief from emotional fear to educational administrators which human efforts cannot guarantee in the detective of threat situations.
2. Threat situations can be easily traced to the source through saved records from digitalized security technological devices.
3. Criminals can easily be apprehended and prosecuted in any case of security threat in the school system.
4. Weapons of warfare from students are easily checked and prevented to gain access to the school thereby provided an ambient environment in the school where lives and properties are secured.
5. Vandalization and outright destruction of school facilities due to insecurity that lead to closure of schools are reduced thereby facilitating the implementation of school policies and programmes.
6. The frustration of smooth educational process experienced due to insecurity will be minimized. The school calendar is might not be disrupted and schools goals will be attained within a frame of time.

Conclusion

The use of technological devices play a significant in the way we work by reducing stress and other contingencies. The use of technologies in curbing insecurity scourge as in other life endeavours have been effective in preventing loss of data, injuries, kidnapping, killing of students under the watch of school administrators. The provision, maintenance, and training of security personnel in the school system on the use of technologies devices become imperative in in school administration.

Suggestions

As a measure to ameliorate the effects of insecurity on educational administrators in Nigerian schools through the use of technological devices, the following suggestions are provided.

1. Procurement technological devices used to check insecurity should be given premium in the education sector.
2. Installation of Close Circuit Television (CCTV) in the nooks and crannies of the school premises to help catch all activities and fishy movements that happen on the school premises.
3. The use of metal detectors and biometric scanners should be heightened in schools.
4. Available technological security devices should be properly maintained.
5. School security personnel should be continually trained on the use of technological security devices.

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