

THE ROLE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY IN THE MANAGEMENT OF SECURITY ARCHITECTURE IN NIGERIAN SCHOOLS

Aba Archibong Emmanuel A. Phd, A'EMAPP, NAEAP
Federal Capital Territory Administration (FCTA)
emmarchis2015@gmail

ARTICLE INFO

Article No.: 0407

Accepted Date: 07/06/2026

Published Date: 30/06/2026

Type: Research

ABSTRACT

The deteriorating security situation in Nigerian schools has become a great concern to Nigerians in recent times, this calls for adoption of innovative approaches. Terrorism, kidnapping, banditry, cultism, communal violence among others threaten school safety. It also disrupts academic programmes and calendar. This study examined the role of Information and Communications Technology in the management of security architecture in Nigerian schools. The study explored how ICT enhances school security through biometric identification, surveillance systems, access control mechanism, artificial intelligence, communication network and emergency response. It also identified the specific technological tools involved and the challenges that must be addressed for effective implementation of ICT in Nigerian schools. Findings revealed that ICT based security system enhances monitoring, proactive threat detection, information management and emergency response capabilities. However, poor funding, infrastructure and power supply, insufficient technical expertise and concerns of privacy hinder effective implementation. The study recommended that schools and other education stakeholders should promote investment in digital security equipment and effective use of ICT infrastructure by providing funds, capacity building, policy development among others to enhance the security architecture of Nigerian schools, this will significantly mitigate security threats and foster safety in Nigerian schools.

Key Words: Information and Communications Technology, Management, Nigerian Schools, Security Architecture.

Introduction

One of the fundamental expectations of schools globally is to provide safe environments for knowledge acquisition, values and competencies required for societal progress and transformation. However, persistent rising cases of insecurity in schools have become a major source of concern for stakeholders including policy makers, school administrators, parents, security agencies and all well-meaning Nigerians recently, this is because heinous crimes such as banditry, kidnapping, terrorism/insurgency, rape, ethno-religious/communal violence, armed robbery, cultism, cyber-crime, drug abuse, vandalism, unauthorized intrusions and other threats of insecurity seem to be ravaging and compromising the safety of learners and educators in schools as well as physical facilities and impacting negatively on the education system (Mohammad et al., 2024). These persistent multi-faceted cases of security challenges threaten school safety and result to closure of schools, displaces learners, causes decline in school enrolment and attendance, increases the rates of out-of-school children, disrupts learning and undermine educational quality delivery, progress, development and stability.

Lately, Nigerian schools have been experiencing cases of kidnapping and at times killing of learners and teachers in states like Niger, Borno, Oyo, Osun, Adamawa, Benue, Ekiti, Kwara, Sokoto, Zamfara, Plateau, Kaduna, Katsina, Kebbi, Edo among others. Nigeria ranks top in Global Terrorism Index with terror related deaths of Forty-Six percent (46%) in a year and civilians including pupils/students and teachers in schools are the main victims and casualties of most of these heinous crimes (Mohammad et al., 2024). According to Omogbolagun (2024) in a report from the National Safe Schools Response Coordination Centre, approximately “Seventy percent (70%) of Nigerian schools are without adequate security measures,” leaving learners and teachers vulnerable to abductions and other forms of violent attacks. These statistics underscore the urgency of adopting innovative strategies that go beyond traditional security frameworks. While traditional security measures often focus on policing and physical barriers, strengthening the uses of Information and Communications Technology becomes central to such re-invention or innovation as a security architecture designed to protect lives, property and information within an organization. This encompasses surveillance systems, access control mechanism, communication networks, emergency response structures and cybersecurity measures. ICT integration taps into proactive technological means as a transformative tool in the design and management of security architecture, enabling institutions to proactively prevent threats, respond more effectively to incidents, and streamline security operations, therefore becoming a vital strategy for overcoming the limitations of government security agencies and the complexities of insecurity and enhancing school safety by fast tracking information gathering and sharing, and promoting a sustainable and contextually proactive and responsive approach to combating security threats in Nigerian schools. This study critically examines the role of Information and Communications Technology in the management of security architecture in Nigerian schools.

Literature Review

The emergence of Information and Communications Technology (ICT) tend to transform security management globally. A study conducted on the deployment of information and communications technology (ICT) for effective security management in Nigerian education system by Ogunode et al. (2022) confirmed that “Information and Communications Technology plays a very important role in the maintenance of security and national development”. According to Ogunode et al., it provides institutions with technological tools for monitoring and preventing security breaches. The integration of Information and

Communications Technology into school security management therefore represents a strategic response to the growing insecurity affecting Nigerian schools and agreeing with the findings of this study. Mohammed (2023) conducted a study on managing security issues in Nigerian secondary schools: The role of information and communication technology (ICT). The study identified CCTV as a critical ICT device for managing security issues in Nigerian secondary schools. The study concluded that CCTV systems improve situational awareness and strengthens preventive security measures thereby agreeing with the findings of this study. In another study conducted by Chime et al. (2025) on “The effectiveness of artificial intelligence in the promotion of school security management in public secondary schools in Anambra State,” the study discovered that Artificial Intelligence (AI) applications such as “threat detection analytics” and intelligent surveillance systems can contribute significantly to safer school environments when implemented responsibly. Their finding also agrees with the findings of this study.

It is fundamental that Nigerian schools operate effectively especially with the integration of Information and Communications Technology tools in security management and guaranteeing the safety of schools. This seems to be the paramount concern among education stakeholders due to their role in the management of security in schools. However, the study observed that Nigerian Schools may be having issues of insecurity arising from poor communication and ineffective security architecture. Observation also indicates that most times, schools get confused and helpless on how to avoid the resultant killings, closure of schools, displacement, psychological trauma and distortion of school programmes and academic calendar. Inadequate security measures seem to affect the management of security in the schools. Government and some schools seem to fail in their role to provide perimeter fencing, adequate trained security personnel and equipment. All these appear to affect security management in schools. Integrating Information and Communications Technology tend to help in the maintenance of security, safe learning environment and national development. It is based on these that this study critically examines the role of Information and Communications Technology in the management of security in Nigerian schools.

Information and Communications Technology (ICT): Information and Communications Technology refers to technological tools and resources used for creating, processing, storing, transmitting and managing information. These technologies include computers, internet facilities, telecommunications systems, surveillance devices, mobile applications, biometric systems and digital database. It is a relatively new field that combines the technology of computer with that of communication. According to Hartzel (2011), it is concerned with the gathering, recording, storage, processing and dissemination of information and represents the latest form of man-machine interface. Integration of Information and Communications Technology can move the boundary between planning and performance upward and improve security management in schools as it includes techniques for processing large amounts of information rapidly and it is epitomized by high speed computer.

Management: Management refers to the utilization of resources towards specific ends. According to Hartzel (2011), it refers to making the most effective use of available resources whether in form of machines, money or people. It includes directing, planning and running of an organization’s operations including security, for implementation of its policies and the attainment of its objectives. It is fundamental to ensure effective management of school security

Nigerian Schools: Nigerian Schools refer to the various educational institutions (public/private) where learners can acquire knowledge, values and competencies required for societal progress. They include properly established and equipped educational institutions such

as universities, colleges of education, polytechnics, mono-technics, secondary, primary and nursery schools.

Security Architecture: Security architecture refers to the structured design of security controls, technologies, and processes that work together to protect an organization's information systems against threats and vulnerabilities (Center for Internet Security 2021). Historically, physical security infrastructure like physical barriers such as fences and security guards dominated school security strategies and architecture. However, technological innovation has expanded this framework to include digital surveillance networks, access control systems, emergency communication systems, cybersecurity mechanisms and real-time monitoring systems, collectively forming an integrated security architecture that is both adaptive and resilient. In Nigeria, where incidents of insecurity have at times disrupted learning, the integration of Information and Communications Technology into school security architecture holds promise for enhancing safety and confidence in the educational environment. It concerns itself with a structured framework that combines technological, administrative and physical security measures to safeguard assets. Research by Akpam and Akoh (2025) highlights that digitalization in school security frameworks enhances the effective prevention, detection, and response to security threats on campuses.

Information and Communications Technology Tools in Management of School Security Architecture

Several technological solutions are central to security architecture in schools. These include:

Closed-Circuit Television (CCTV) Systems: This system provides continuous monitoring of school perimeters and interior spaces, helping to deter unauthorized entry and enabling rapid response to incidents. The CCTV camera is one of the most widely used ICT tools in security management, it facilitates continuous monitoring of school environments and the identification of suspicious activities. CCTV surveillance assists school administrators in detecting unauthorized access, monitoring peoples' movement and providing evidence during investigations. Mohammed (2023) identified CCTV as a critical ICT device for managing security issues in Nigerian secondary schools. CCTV systems improve situational awareness and strengthens preventive security measures. However, most Nigerian schools especially public schools lack this facility, few schools that have do not make effective use of it due to poor power supply, high maintenance costs and poor maintenance culture thereby leaving schools vulnerable to security threats.

Biometric Identification Systems/Access Control Gadget: This technology system uses unique physiological characteristics including fingerprint or facial recognition iris scanners to verify people's identities, limiting entry to authorized individuals, reducing the risk of intruders gaining access to school buildings. A careful look into education settings has shown that biometric systems significantly reduce unauthorized entry, improving safety outcomes for students and staff. In schools, biometric systems can be used for staff attendance management, student verification, visitor control and access restriction to sensitive areas. The deployment of biometric systems reduces impersonation and enhances accountability within educational institutions. Recent studies on Nigerian schools have highlighted biometric attendance and access control systems as emerging security technologies but these facility lacks in most Nigerian schools today. Where they are available, they are not used effectively due to poor commitment, maintenance culture and high maintenance costs. This also keeps school security technology on the path of slow growth.

Security Alert Gadgets: These include technological security gadgets that support emergency alert systems, in schools where these gadgets are used, they help in detecting unauthorized and dangerous items including weapons and broadcasting real-time warnings during crises. The goal of this is to nip any security threat at its early developmental stage but

most Nigerian schools especially the government owned schools lack these facilities. Where there have been investments in them, the life span is short-lived due to negligence and poor attitudinal behaviours of the members of staff. While it contributes heavily towards security checks, its inadequacy or lack makes the school community to remain vulnerable to insecurity.

Access Control Systems: Electronic access control systems regulate movement into and within school premises. Such systems include smart cards, digital locks, identity management platforms and automated gate systems. Access control technologies help to prevent unauthorized entry and improve monitoring of strangers within the school premises. A look at integration of Information and Communications Technology into school security management identifies entry metal detectors, access control devices and electronic identification systems as essential components of modern school security architecture. However, Government and relevant authorities have failed to invest in providing these kinds of facilities in Nigerian schools. In places where they are available, there seem to be inconsistency in the use. While these are very important security facilities, their lack in Nigerian schools expose the school community to security threats.

Global Positioning Systems (GPS): The Global Positioning System (GPS) technology can be used to track school vehicles, monitor transportation routes and ensure pupils/students and staff safety during transit. GPS-enabled systems provide real-time location information that assists administrators in responding quickly to emergencies involving school transportation. While the relevance of this cannot be underestimated, Nigerian schools lack the facility and commitment of the Government and relevant stakeholders due to costs. This also keeps the school security system under-developed.

Artificial Intelligence (AI) and Smart Surveillance System: Artificial Intelligence has improved traditional surveillance systems by enabling automated threat detection, facial recognition, behavioral analysis and predictive security monitoring (Thompson et al., 2025). AI-powered security systems can identify unusual activities and alert security personnel in real time. According to Chime et al. (2025), Artificial Intelligence (AI) applications such as “threat detection analytics” and intelligent surveillance systems can contribute significantly to safer school environments when implemented responsibly. However, Nigerian schools are yet to benefit from this great security technology because the Government and school authorities are yet to invest in the provision of these important security system due to the high cost and maintenance requirements.

Emergency Communications Systems: ICT-Based communication systems enable rapid dissemination of security alerts through mobile applications, SMS notifications, emails, public address systems and emergency hotlines. Such systems improve coordination among school administrators, security personnel, students and parents during crises. This is one of the most affordable ICT-based security communication means. However, most schools are yet to make provisions for them as a result of attitudinal behaviours and commitment of the people.

Automated Entry: These include infrastructures installed at entrances to automate them for recognition actionable platforms that will only allow access when duly approved that the person coming in can be recognized as harmless. These system helps to check for security threats and also restricts unauthorized entry. However, it is expensive to install and maintain. As a result, most Nigerian schools lack access to this system and so keep the school community in a state of vulnerability.

Body Scanner Stations: These include gadgets installed at entry and strategic passage points to help detect strange and harmful objects such as arms and ammunition. In schools where body scanners are installed, they help to identify unauthorized and or dangerous strange materials hidden in the body of criminal minded persons. While this is also a very important security device, most schools do not have access to it due to costs and attitudinal behaviours.

Where this gadget is afforded, poor maintenance culture affects its use thereby leaving the school communities in their vulnerable conditions.

Radio Messenger/Walkie Talkie: This refers to security gadget that interconnects experts in various locations for the purpose of disseminating security information and extracting information from security personnel in the field. This allows for proper and uniform coordination and enforcement of law and order. The provision of this communication gadget in Nigerian schools will be of immense benefit in terms of fast transmission and sharing of security information to nip security threats in the bud. However, most Nigerian schools are yet to tap into these benefits that lie in the use of the gadget.

Tracker: This is a technological security communication device which coordinates tracking of suspects and or items and locating them for the purpose of effecting arrest of suspected perpetrators of crimes. In schools where this gadget is installed criminals can easily be tracked and arrested. Stolen school items can also be tracked and recovered by the security agencies. While the benefits of this are many, most schools are yet to tap into the use of it. Where they are installed, poor connectivity is also a problem.

Telephones: These are communication devices that are used for calling, recording, taking photographs, making videos and sending messages. They are also used for accessing the internet and for storing information. This communication device can be used to checkmate security threats in Nigerian schools. It is a means to quickly reach out to security agents and even to extract evidential records. This is also one of the cheapest means of sharing security information with relevant security agencies for prompt and proper actions. While it is a very cheap and important means of sharing security information, poor connectivity in and around school community poses threat to its efficiency and effectiveness.

Computers: These are electronic gadgets that can be used to process, disseminate and store information on the internet for the purpose of a distant and wider audience and for prompt and effective actions. The computer can be used to trace and or report as well as analyze school activities. It can also be used to process biometric data of individuals. This is to say that security analysis can be done using the computer. It is a very efficient means of storing, securing security data and communicating information within and outside the school community. However, most Nigerian schools lack access to computers and where they are available, poor power supply and connectivity is a problem thereby rendering it useless in combating security threats in the schools.

Network Sensors and Internet of Things (IoT): More advanced implementations include networked sensors and the Internet of Things (IoT), which can monitor school environmental conditions (e.g., door sensors, movement detectors) and integrate with automated response protocols. Quresi et al. (2021) said, studies on “smart schools” have explored how IoT and advanced communication systems can strengthen alerting capabilities and rapid threat detection. However, most Nigerian schools do not have access to this very useful facility due to high costs, connectivity, maintenance requirements and the technical knowledge of its use. In schools where it is installed and put to used, it facilitates monitoring of the environment and detects security threats.

Role of Information and Communications Technology (ICT) in the Management of Security Architecture in Nigerian Schools

The role of Information and Communications Technology (ICT) in security management in Nigerian schools include:

Provision of Data Records, Bio-metric Access System and Data Driven Security Decision: Digital systems provide data records such as logs of access events or recorded footage that can support investigations and policy reviews. Information and Communications Technology (ICT) systems generate large volumes of security related data that can be analyzed to identify trends, vulnerabilities and emerging threats. School administrators can use such

information to make informed security decisions. According to Ojo (2025), Information and Communications Technology (ICT) in schools also helps to provide finger prints and facial recognition platforms where culprits can easily be identified. It helps in identity management and intelligent threat detection.

Enhanced Surveillance and Monitoring, Visibility and Oversight: Information and Communications Technology (ICT) enhances visibility and oversight functions, allowing security teams to monitor multiple locations simultaneously with minimal personnel. Facilities including CCTV, biometric systems, real-time communication platforms, and IoT-enabled devices provide powerful information and tools to detect, prevent, and respond to security threats. They provide continuous monitoring capabilities that exceed the limitations of traditional security approaches. According to Pinga and Okpe (2025), Real-time surveillance enables early detection of threats and reduces response time thereby preventing insecurity.

Prevention of Unauthorized Entry, Improved Access Management: Information and Communications Technology (ICT) gadgets can be used to prevent unauthorized entry into schools. Electronic access systems strengthen perimeter security and reduce unauthorized entry into school facilities. They also generate digital records useful for investigations and audits. This will in turn reduce security threats to learners and teachers in Nigerian schools.

Faster Emergency Response: Information and Communications Technology platforms enable rapid dissemination of information and response during emergencies. Quick communication using Information and Communications Technology (ICT) basic technological tools foster coordination among stakeholders and hence minimize security risks.

Provision of Tracking Platforms and Crime Control: Information and Communications Technology (ICT) can be used to track down criminal elements, this will help the security agencies to effectively make arrests and present them for prosecution. The presence of surveillance technologies acts as a deterrent to criminal behaviours. Potential offenders are less likely to engage in unlawful activities when they are aware that their actions are being monitored. These technologies such as CCTV, biometric systems, real-time communication platforms, and IoT-enabled devices provide powerful tools to prevent, detect, and respond to security threats.

Information Gathering and Sharing, Digital Platforms for Coordination: Integration of Information and Communications Technology (ICT) in the management of school security helps to facilitate prompt and effective information gathering and sharing among stakeholders. This enhances proactive actions that mitigate security threats to schools. It serves as digital platforms that allow administrators to coordinate with law enforcement agencies and communicate with parents quickly and efficiently. Recent studies examining integration of Information and Communications Technology (ICT) in Nigerian schools finds that although awareness of digital security tools is still growing, actual implementation remains inconsistent, underscoring both potential and gaps in current practice.

Challenges Facing Information and Communications Technology - based Security Architecture in Nigerian Schools.

The following are challenges facing Implementation of (ICT) - based security architecture in Nigerian schools:

- 1. Inadequate Funding:** In many schools, particularly public schools, inadequate funding limits the acquisition of modern Information and Communications Technology (ICT) infrastructure. There is poor budgeting and insufficient resources to procure, install and maintain sophisticated security communications technologies. These infrastructure requires substantial investment in equipment, software and maintenance. The inability of the government and relevant stakeholders to make provision for funding greatly impacts on the provision and use of ICT tools in most Nigerian public schools. The absence of these tools hampers improved communication and security management.

2. **Poor Power Supply:** Inadequate supply of electricity to schools especially in rural areas, tend to affect efficiency of Information and Communications Technology infrastructure. These tools aim at improving communication and security architecture. However, in Nigerian schools where there is lack of power supply, it affects the operation of surveillance cameras, servers, communications systems, and access control technologies and effective communication and or management of the security architecture within and around the schools.
3. **Low Technical Expertise:** The shortage of ICT professionals and trained security personnel limits the effective utilization of ICT tools for improved digital security systems in schools. Ogunode et al. (2022) observed that many educational institutions lack personnel capable of managing advanced ICT security facilities. Most Nigerian schools (both public and private, rural and urban) are experiencing inadequate trained IT personnel, this has greatly lead to inadequacies in the utilization of ICT tools for effective and efficient communication and security management in the schools. As a result, schools resort to the use of inappropriately trained personnel or even abandon the use of ICT tools in its entirety.
4. **Poor Internet Connectivity:** Many Nigerian schools especially those that are located in rural communities where there is no internet connectivity lack access to ICT tools for use. Lack or poor internet connectivity can undermine the reliability of digital systems. In a similar vein, schools that are located in urban areas and have access to internet connectivity, may also experience erratic situations due to factors such as over stretch, weather situation, policy framework, management issues, vandalism and corruption. When connectivity becomes erratic, communication through the internet is greatly distorted. This affects the efficiency of ICT tools in communication and security management in the schools.
5. **Cyber-Security Risks:** Nigerian schools which have access to ICT facilities also face threats. With the increasing trend of digitalized school system, the rate at which they become targets and face cyber threats such as hacking, data breaches, malware attacks and unauthorized access to institutional databases by internet fraudsters has also continued to rise. Effective cybersecurity measures must therefore accompany physical security technologies, where there are lapses in this regards, the schools' cyber data can be hacked into and this is an alarming security threat.
6. **Privacy and Ethical Concerns:** While some schools may be celebrating availability of ICT infrastructure and connectivity, there are challenges of privacy concerns. The deployment of surveillance systems and AI-powered monitoring tools raises concerns regarding privacy, data protection and ethical use of personal information. Recent observations reveal the need to emphasize on aligning school technologies with Nigerian data protection regulations and ethical standards, the inability of the government and relevant stakeholders to implement this poses threats to school cyber privacies.
7. **Poor Knowledge of Information and Communications Technology (ICT):** There is a huge lack of the knowledge of ICT among members of staff, this affects the relevance of an integrated ICT system in Nigerian schools. However, capacity building is essential, staff and administrators must be trained to use, maintain, and interpret technological tools effectively. Where there is dearth of the knowledge of ICT, there is abandonment of its implementation.
8. **Poor Policy Frameworks:** Poorly developed policy frameworks and implementation raises threats. Therefore, policy frameworks must be developed to protect privacy and govern data use responsibly, ensuring that security systems do not inadvertently compromise personal information. Where this is not taken seriously, schools are bound

to abandon the implementation of ICT programmes due to the threats that may come as a result of the absence of restrictions and protections.

- 9. Poor Maintenance Culture:** The attitude of the school population and stakeholders towards public infrastructure determine how Information and Communications Technology (ICT) equipment can be effectively maintained and used for their original purposes. It also determines how long they will last. Poor attitudinal behaviours and poor maintenance culture of the school populace towards ICT infrastructure affects efficiency and durability.

Strategies for Effective Integration of Information and Communications Technology (ICT) into the Nigerian Schools Security Architecture:

The following measures are recommended as strategies to maximize the benefits of Information and Communications Technology (ICT) in the management of school security architecture in Nigeria:

- 1. Improved Funding:** The Federal and State Ministries of Education should make provisions in annual budgets for adequate funding for the provision and maintenance of digital security infrastructures in Nigerian schools. Non-Governmental Organisations can also intervene in the funding of ICT infrastructure in Nigerian schools to improve security.
- 2. Deliberate Security Policies, Establishment of Workable Frameworks:** The Federal and State Ministries of Education and school managements should deliberately develop comprehensive school security policies aimed at improving the use of Information and Communications Technology (ICT) technological tools to improve security in Nigerian schools. Stakeholders should also ensure the establishment of cybersecurity frameworks and data protection policies.
- 3. Training and Awareness Campaigns:** The Federal and State Ministries of Education should make adequate provision and carry out regular training and re-training of school ICT-Personnel and security personnel. This will enhance the effective integration of ICT into the security architecture in Nigerian schools.
- 4. Addressing Power Provision Issues:** The Federal and State Governments should ensure the integration of renewable energy solutions to address power challenges in schools in order to ensure improved and stable electricity supply for effective use of ICT-infrastructure in schools.
- 5. Acquisition of Technology and Maintenance Policies:** The Federal and State Ministries of Education and Science, Technology and Innovation should establish strong bonded public-private partnerships for technology acquisition and maintenance in Nigerian schools.
- 6. Audits and Risk Assessment:** Government and other relevant stakeholders should carryout periodic security audits and risk assessments of the entire Nigerian schools' security architectures.

Conclusion

A secured learning environment supports educational progress and sustainable resource management. To ensure an improved security architecture in Nigerian schools, comprehensive approaches that integrate innovative and technology driven solutions using the Information and Communications Technology tools for surveillance, access control, emergency communication, identity management and intelligent threat detection must be employed. Technologies such as CCTV, biometric systems, real-time communication platforms, and IoT-enabled devices provide powerful tools to prevent, detect, and respond to security threats. While challenges of poor funding, shortage of expertise, infrastructural inadequacies and privacy concerns remain and continue to encourage the escalation of insecurity and further hamper the efforts of the government towards achieving inclusive and quality education for all,

strategic investments in infrastructure, personnel and policy interventions can enhance effective implementation of Information and Communications Technology. By addressing these challenges, schools can harness technology and prioritize the deployment based security systems as a fundamental component of school security architecture to create safer, more resilient school environments conducive to learning and growth.

References

- Akpam, G. O., & Edet, A. M. (2025). *School security architecture in an era of digitalization*. Scientific Journal of Educational Management, Research and Law, 3(1), 272-279. <https://journals.aemapp.org/index.php/SJEMRL/article/view/140>
- Center for Internet Security (2021). *CIS Controls Version 9.2*.
- Chime, G. O., Obiakor, M.I., & Chukwu, N. W. (2025). *The effectiveness of artificial intelligence in the promotion of school security management in public secondary schools in Anambra State*. UNIZIK Journal of Educational Management and Policy, 7(1), 128-142. <https://journals.unizik.edu.ng/index.php/ujoemp/article/view/7439>
- Hartzel, D. (2011). *Melrose Dictionary of Management*; Melrose Books and Publishing. Sango-Ota
- Quresi, K. N., Naveed, A., Kashif, Y., & Jeon, G. (2021). *Internet of Things for education: A smart and secure system for schools monitoring and alerting*. Computers & Electrical Engineering, 93, 107275. <http://doi.org/10.1016/j.compeleceng.2021.107275>
- Mohammed, H. (2023). *Managing security issues in Nigerian secondary schools: The role of information communication technology (ICT)*. University of Abuja Research Publication.
- Omogbolagun, T. (2024, April 21). *70% of schools lack security, vulnerable to kidnappings* - National Safe School Response Coordination Centre Commander. *Punch Nigeria*. *Punch Newspapers* article.
- Ogunode, N.J., Musa, A., Ohibime, E. O., & Okwelogu, I. S. (2022). *Deployment of information communication technology (ICT) for effective security management in Nigerian educational system*. Middle European Scientific Bulletin, 19, 137-145.
- Ojo, A. R. (2025). *Insurgency and Insecurity: The Role of ICT Integration in Combating Insecurity in South-West Nigerian Educational System*. International Journal of Research and Innovation in Social Science. (IJRISS), 9(3S), 6023-6032. <https://doi.org/10.47772/ijriss2025.903sedu0434>
- Pinga, M., & Okpe, J. (2025). *Integration of Security Technologies for Effective Management of Basic Education in Makurdi Metropolis of Benue State, Nigeria*. Scientific Journal of Educational Management, Research and Law, 3(1), 358-367. <https://journals.aemapp.org/index.php/SJEMRL/article/view/154>
- Mohammad, G., Archiga, A., & Paravincini, G. (2024, March 14). *Nigerian kidnappings break-up families, keep children out of school*. Reuters. <https://www.reuters.com/world/Africa/Nigeria-kidnaps-break-up-families-keep-children-out-school-2024-03-14/>
- Thompson, C. C., Okonkwo, S., & Obiekwe, K. K. (2025). *Ethics and bias in AI-driven education and security management in Nigerian schools*. UNIZIK Journal of Educational Management and Policy, 7(1), 85-97. <http://journal.unizik.edu.ng/ujoemp/article/view/7436>