

CYBERSECURITY EDUCATION IN NIGERIA: A PRE-REQUISITE FOR THE LIFE-LONG LEARNER IN THE 21ST CENTURY.

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Abstract

Teaching and learning in the 21st century have metamorphosed tremendously towards the digitalization of learning as a result of the outbreak of the COVID- 19 pandemic. Instructors and learners deliver and receive instructions respectively using technology. Though technology has been used in the past for teaching and learning, the awareness it has gotten in the recent years after the COVID pandemic- which resulted to a total lockdown of organizations and institutions of learning, is mind blowing. This paper seeks to propose the need for cyber security education to be included in the Nigerian curriculum so as to avail the learners the prerequisite knowledge on how to stay safe while using technology and the internet for learning and other purposes.

Keywords: *Cyber education, cyber security, cyber space, life-long learner, pandemic*

Introduction

The use of the internet/ technology has become a part of our everyday lives in this 21st century; and for everything that has an advantage, there is also a down side to it. Staying long hours on the internet have positively impacted some individuals in different ways while it has left some others mourning their losses. Cyber security is defined as the application of technologies, processes and controls to protect systems, networks, programs, devices and data from cyber-attacks. Its aim is to reduce the risk of cyber-attacks and protect against the unauthorized exploitation of systems, networks and technologies (Bolaji et al., 2015). Education according to Oxford Languages online dictionary is defined as the process of receiving or giving systematic instruction, especially at a school or University.

Simply put, Cyber security education is the process of receiving or giving systematic instruction at a school or university or online on the proper use of technologies, processes and networks and data from cyber-attacks. It is the awareness given users of the internet through a formal approach (teaching) on how to secure their devices, data and networks etc. from cyber-attacks.

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Research and education has metamorphosed drastically in this era and this has led to more people staying long hours on the internet giving and receiving instructions, conducting scholarly research and also expressing their social skills on different social media platforms. Therefore, the need to include cyber security education in our curriculum is very important because every individual who is connected to the internet can become vulnerable at different times and these vulnerabilities are the target of cyber criminals/ cyber attackers. As more students and instructors have their presence in the cyber space, so also do the cybercriminals. Cybercriminals are increasingly multiplying their effect and presence on the internet and this has become a reason to educate instructors and learners on the need to stay safe in the cyberspace. Understanding how to stay safe on the internet is pivotal to enjoying the dividends and enormous resources it provides.

According to Eluwah (2021), Cyber awareness and education remain a key defense in the protection of people, systems and networks. Kevin (2022) opined that “Cyber security is an important subject for everyone, not just corporations. It’s also vital for our children to understand how to stay safe online, and the need to be aware of any dangers that might come their way” while Rahman et al., (2020) explains that “Cybercrime against children and adolescents is certainly a concern for parents, as they sometimes do not realize their child is a victim of cybercrime.”

Awareness and alertness should be the watch word of every parent, instructor and learner when it comes to the use of the cyber world because cyber criminals/ cyber bullies are lurking for unsuspecting victims to take advantage of them and their systems. Awareness is birthed from the point of knowledge and knowledge is gained from being educated. It is when an individual is aware of the pros and cons of the internet/ cyber world that is when he / she will stay alert while surfing the net. These two skills (awareness and alertness) should form the guiding principles of the life-long learner in the 21st century. Bolaji et al., (2015) opined that the use of the internet exposes children to wide range of risks which they may not have enough skills and knowledge to manage. The online risks according to the EU kids online network is classified as content, contact, and conduct risks (Hasebrink et al., 2008). These risks can be managed through the training and retraining of students on the proper use of the internet. Rahman et al., (2020) advocated that early exposure and training for students at schools should be promoted through cyber security symposiums. They further stated that “the people who are exposed to and trained on cyber security are expected to be the country’s future source of cyber defense.”

According to the National Policy on Education (2013), the success of education is hinged on proper planning framework, efficient administration and adequate financing. Although Bolaji et al developed five stages framework on cyber security education for Primary and secondary school students, the implementation of this framework (efficient administration and adequate financing) which are also key components in achieving success in education should be given the attention it deserves. A combination of framework, efficient administration and adequate financing of cyber security education will go a long way in ensuring that the students are equipped with the required knowledge as regards cyber threats and cyber safety.

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The National Institute for Educational Planning and administration should organize capacity building programs for all stakeholders in the education sector to plan a way towards the inclusion of cyber security education in primary, secondary and tertiary levels of education.

Types of Cybersecurity threats to Education

According to Kevin (2022), “the major types of [cyber security threats in education institutions](#) include phishing, malware, ransom ware, spam, social engineering and Denial of Service (DoS) attacks. He further explained that cybercriminals are using these means to target educational institutions for financial gain and phishing is the most common form of cyber-attack used by cybercriminals to hack into the systems of educational institutions.”

Components of Cybersecurity Education

There are various components of cyber security education. These are:

- 1) **Privacy and compliance training:** This is the training mandated by regulation, legislation or institution policy that is given to instructors and learners on the use of cyberspace.
- 2) **Phishing awareness training:** The training given to users on what phishing is all about, how to identify phishing mails/activities and the right action to take in an event of encountering a phishing attempt by a cybercriminal.
- 3) **Data security:** This is the act of protecting data from unauthorized access and data corruption throughout its lifecycle.
- 4) **Ransom ware:** This is software (malicious) designed by the cybercriminal in order to block access to a computer system until a sum of money/ransom is paid. The attacker encrypts all the files on a system and will only decrypt it when an agreed amount (ransom) is paid.
- 5) **Cyber hygiene:** Are the set of practices that organizations and individuals perform regularly to maintain the health and security of users, devices, networks and data.

Conclusion

The need for the inclusion of cyber security education in the Nigerian Curriculum cannot be overemphasized. The Generation X, Millenials and Generation Z are tech savvy by default and cyber security should also be a major component of their daily activities. This generational make-up has become a reason to address the issue of cyber security education with a sense of urgency. Cyber security education should be treated as an urgent national issue because there is no better time to include it in the curriculum than now.

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Recommendations

Cyber security education is a basic knowledge/skill that every lifelong learner in the 21st century and beyond should desire to acquire. This feat can be made possible if the government, curriculum planners and all stakeholders in education put all the necessary apparatus in place in achieving this goal. The implementation of a well-structured framework on cyber security education will be a right step in the right direction in the 21st century. Equipping teachers with the technological tools that will enable them transfer the needed knowledge to the students is also very important in achieving cyber safety of users, appliances and data.

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