School of Cyber Security
Entrepreneurship in Cybersecurity
Rahil Patel
012082535

Topic: Official Cybersecurity Curriculum for High School Students

The importance of cybersecurity has significant increased because of heavy dependence on digital programs and devices to human lives. Cybersecurity is derived as protecting criminal activities, preventing unauthorized access, and punishing bad actors of the digital infrastructure. nowadays, children are operating electronic devices before they begin the education, and most devices are actively connected to internet and retrieving the content. Cybercrime has become a serious concern for children at the global level, and it brings threats to the connected networks and devices. Therefore, Researchers have put significant importance on cybersecurity awareness to all the citizens of a nation, and it is essential to develop an official cybersecurity curriculum for high school students. The official curriculum can educate all high school students without any exceptions of different majors. Curriculum could be presented in the form of modules and create the modules for a new topic. Modules can educate high school students and make them aware of cyber activities over the network. Quizzes could be implemented at the end of modules to check the readiness of high school students in preventing cyber-attacks.

Keywords: Cyber-attacks, Cybersecurity awareness, Vulnerabilities, High school students, Cybercrimes

What is the problem you are addressing? (problem)

The lack of cybersecurity knowledge among students in schools possessing biggest threats to the community. The pandemic has boosted the use of technology across all sectors. Now, almost every person in the United States rely on the internet for work, entertainment, and data storage. Students are spending half of their daily time on the internet to entertain and educate themselves. Many students use online platforms to collaborate for group studies and entertainment. Online gaming sectors has skyrocketed since the pandemic, and it offers to collaborate while playing games. The entertainment platforms allow the advertising companies to use their platform for marketing. In many cases, hackers tend to create a website that looks like a legitimate website and find a way to create an advertisement on gaming platforms. The attraction of advertisement may excite students and encourage them to open advertisements. It may lead them to unknown websites where students will authorize an access to a third party to enter the device. The authorized access can steal sensitive information, lock students access, or stay active in the background. Now, exploited students brings the risk factor to users, which are connected on the same network. The recovery cost can be enormous, or it could destroy the sensible information. The cyber-attacks can be prevented when high school students have awareness and knowledge of cybersecurity (Zhang-Kennedy & Chiasson, 2022).

How do you know it's a problem? (context)

The lack of awareness in cybersecurity education opens vulnerabilities. Cybersecurity does not have its own curriculum for high school students. It will not be long that the high school education needs to consider the cybersecurity curriculum as a core course. The lack of education

can make an impact on the internet usage. Personal information can be stored on online platforms in unsecure ways. Online credentials might not to the required standard, and it could be visible in the plaintext methods. Lack of awareness may lead to surfing illegitimate websites, and students may provide the access of their devices to third parties. Moreover, bigger consequences come from social media websites, where many profiles are publicly visible. High school students often become victims of honeypot because lack of skills in identifying fake profiles. Cyberbullying is associated with social media websites, where mostly children are targeted. The target becomes easy as now kids have their social media accounts from birth, and they are created by their parents. Social network allows to connect family, friends, and work, but it possesses threats to the community as many users does not have a strong security of accounts. Eventually, accounts become vulnerable and get exploited (AlShabibi & Al-Suqri, 2021).

What are going to do about the problem? (solution)

Cybersecurity awareness is a problem across the nation, and digital infrastructure is increasing more challenges to cybersecurity sector. Developing an official curriculum for high school students can help students to get the necessary education of cybersecurity field. The initiative is designed for Hampton Roads Schools to educate high school students with cybersecurity awareness. The content will be delivered in module, and at the end of each module there will be an assessment quiz. Modules will provide the skills of how to set a strong password, securing social media platforms, device security, point of contact during cyber-attacks, and necessary steps to keep malwares and spywares away. Incentives will be offered with a successful completion of cyber awareness program. The modules will be updated according to new changes in cybersecurity and technology sectors. Successful implementation will reduce the number of cyber-attacks (Peker, Ray, & Silva, 2018).

What barriers do you expect to confront? (barriers)

An official curriculum for cybersecurity students is under the development, and it is yet to approve by the school board. The permission of all schools and education board to unite for the betterment of future will be tough task. Moreover, it is a new curriculum, so higher level information cannot be implemented in the curriculum. The curriculum may content lower-level information, and higher-level information can be presented to students after success in lower level. The development of an App and a website for the integration of modules will be a challenging task along with the development of curriculum. Therefore, the integration may need to be divided in phases with timeframes to accomplish the task. The app and website development cost may be high depending on the user management capabilities. It would require a continuous maintenance to keep updated from unauthorized access. Securing all vulnerabilities of implemented system to prevent cyber-attacks. Visual representation of awareness for students with disabilities would be difficult in the beginning. Nonetheless, all barriers can be addressed with integration of phases (Peker, Ray, & Silva, 2018).

How will you know if you are successful? (assessment)

The integration of modules will have assessment quizzes at the end of each module. The quizzes will help to determine awareness of students, and it will have unlimited attempts to complete. If students would not be able to understand concepts, multiple attempts implication would help to get the detailed concept. Incentives will be offered to students, who will accomplish tasks in one attempt. Eventually, all students will achieve the task, and they would be careful before sharing

the sensitive information, surfing the illegitimate websites, and authorizing third party access. The successful accomplishment of the official cybersecurity curriculum for high school students will prevent many cyber-attacks, cybercrimes, cyberbullying, and cyber thefts in the future.

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