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# ADVANCING CYBERSECURITY EDUCATION THROUGH EVIDENCE-BASED PRACTICES THAT PROMOTE INCREASED “CYBER SAFETY” AMONG ADOLESCENT TECHNOLOGY USERS

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## ABSTRACT

Exposure to technology at a young age not only influences childhood experiences and development but increases their individual vulnerability to external threats and influences. It is essential for advancing cybersecurity education to both monitor and prepare adolescent technology users in mitigation strategies to eliminate potential threats, while simultaneously protecting our youth. Lazarov et al. (2023) emphasizes the need for cybersecurity awareness during the early-stages of education and proposes a novel methodology that targets high-school and college-age users to promote effective cybersecurity education and awareness through defined teaching strategies. Using evidence-based practices in early education will help foster improved information security maturity. Moreover, adaptation of this novel education model will prepare future cybersecurity workforce personnel to be better positioned in defensive cyber strategies necessary for protecting critical infrastructure and improving our national cyber workforce capabilities.

## EXTENDED ABSTRACT

The objective of this research study is to develop, implement, and measure the effectiveness of a new *Cyber Safe* training curriculum and education model for use by cybersecurity users. The proposed research project will build upon previous work identified through a comprehensive case study analysis and leveraging Lev Vygotsky's *Zone of Proximal Development* (ZPD). Lev's ZPD focuses on the zone where learning and development intersect by drawing upon 3 concepts: guidance received from a more knowledgeable person (MKO), teaching within ZPD, and utilization of pretend play. We will adapt this model while introducing our own novel cyber education approach for elementary and middle-school aged users. The goal of this research is to extrapolate the success of previous program initiatives (“Stranger Danger,” “Good Touch Bad Touch,” and “D.A.R.E.”) and cybersecurity training, while identifying the theoretical framework used within them. Once identified, we will execute an application-based approach to integrate the frameworks within the cybersecurity education domain. Surveys will be administered before and after the deployment of the Cyber Safe training to gauge its effectiveness and obtain feedback. Necessary adjustments will be conducted based off the feedback received and enter stage two of testing. The conceptual framework behind this learning initiative has found historic success in other disciplines and domains and is aligned to find success within the cyber as well. The digital environment is home to numerous threats including cyberbullying and online predators. Therefore, the broader impact this novel educational curriculum provides will focus on cyber security education, best practices, information security, privacy, social media, and social engineering to develop future cyber leaders capable of protecting themselves and our country.

## KEY WORDS

Cybersecurity Education, Cyberbullying, Evidence-Based Practices, Interactive Learning, Cybersecurity

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