ENHANCING ELEMENTARY STUDENT'S KNOWLEDGE THROUGH WEB SECURITY FUNDAMENTALS COUNSELING

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ABSTRACT

Abstract: This Community Service Program (PkM) focuses on delivering fundamental web security concepts tailored to the age-specific needs of young learners. Collaborative efforts among teachers, and parents, ensure a cohesive implementation of web security measures within the school environment. This PkM activity aims to enhance elementary school student's knowledge about the importance of web security. The method used is by giving lectures and interactive discussions to PkM participants. The total number of participants involved in this PkM is around 25 people, consisting of teachers and students. Evaluation of this PkM activities based on questionnaire feedback from PkM participants. According to feedback from participants, there has been a noticeable improvement in understanding the significance of web security. Before engaging in PkM activities, only approximately 5 percent of students possessed knowledge regarding the importance of web security. However, post-PkM activities, approximately 90 percent of students affirmed their awareness of the significance of web security.

Keywords: Web security; Counseling; Elementary School Student.

A. INTRODUCTION

The title of this PkM activities encapsulates the core objective of bolstering the understanding of web security principles among elementary school students. Enhancing underscores the intention to improve and uplift the existing state of knowledge, focusing on the young learners classified as elementary students (Anderson et al., 2021; Oke & Fernandes, 2020; Tao & Gao, 2022). The term knowledge pertains to the awareness and comprehension these students possess, specifically in the realm of web security fundamentals, which encompasses the foundational concepts essential for safeguarding information and navigating the internet securely (Gandikota et al., 2023; Kadebu et al., 2023; Yasin et al., 2024). Counseling suggests an interactive and guidance-oriented approach to education, emphasizing the role of insightful sessions aimed at imparting knowledge and promoting a deeper understanding of web security fundamentals among elementary students (Hulsman & Van Der Vloodt, 2015; Oti & Pitt, 2021; Roshid & Ibna Seraj, 2023).

In previous PkM activities, we conveyed the importance of using computer-based systems, including web-based systems for learning digital illustrations for elementary school students in Palembang City (Puspasari et al., 2023; Sanmorino, 2021). One of the connections with the PkM activities that will be carried out now is that when students search for content for digital illustrations they will be more careful because they already know the concept of web security. Students will not be easily fooled by fake digital content or advertising spam asking for money. Recognizing the increasing exposure of elementary students to digital platforms and the internet, there is a pressing need to equip them with essential knowledge regarding web security (Aljabri & Mohammad, 2023; Figueira & Oliveira, 2017). The prevalence of cyber threats and the potential risks associated with online activities necessitate proactive measures to instill a foundational understanding of web security fundamentals among young learners (Aldhaheri et al., 2024; Noor et al., 2023; Wang et al., 2023). This activity emerges as a response to the gap in elementary students' awareness of online safety, aiming to enhance their knowledge through targeted counseling sessions.

The primary objective of the PkM (Community Service Program) activity is to significantly elevate the understanding of elementary school students concerning the crucial significance of web security. In a world increasingly reliant on digital technologies, where young learners are exposed to various online platforms, the need for a comprehensive grasp of web security fundamentals becomes imperative. This initiative seeks to bridge the existing gap in awareness among elementary students, who may not fully comprehend the potential risks and threats associated with online activities. By incorporating targeted educational strategies and counseling sessions, the aim is to instill a robust understanding of the importance of web security. The

ultimate goal is to empower these students with the knowledge and skills necessary to navigate the digital landscape safely, fostering a sense of responsibility and digital literacy from an early age.

B. METHODS

In this section, we would like to convey several things related to the implementation of PkM activities, namely the time and place of PkM activities, the methods, the targets, the participants, and the last, activity steps. A detailed explanation is given in the next subsection.

1. Time and Place of the PkM Activities

This PkM activity was carried out on November 29, 2023. The place was in Zaadul Ma'ad Boarding School. Zaadul Ma'ad Boarding School is located in Talang Jambe Ward, Sukarame District, Palembang City. Currently, Zaadul Ma'ad Boarding School accepts students from senior high school, junior high school, and elementary school. Students come from various regions in South Sumatra Province. Especially at elementary school level, the majority of students come from within the city of Palembang. Elementary school students at Zaadul Ma'ad Boarding School are familiar with web technology such as surfing via web browsing, but still have minimal knowledge regarding web security issues.

2. PkM Activity Method

In carrying out this community service activity (PkM), we used lectures and discussion as a method. This series of methods consists of short lectures for a common understanding of the importance of web security for elementary school children. Discussion with PkM participants stimulates the creativity of PkM participants by providing space to ask questions about the material that has been presented.

3. Activity Targets

The target to be achieved from this PkM activity is to increase elementary school student's knowledge and understanding of the importance of web security.

4. Activity Participants

The participants of this community service activity (PkM) are elementary school students at Zaadul Ma'ad Boarding School. The total number of participants involved in this PkM is around 25 people, consisting of teachers and students. With this PkM activity, it is hoped that it can increase the knowledge and understanding of elementary school students about the importance of web security.

5. Activity Steps

The steps for this PkM activity can be systematically seen in Table 1 below:

Table 1. PkM Activity Plan

No	PkM Activity Plan
1	The PkM team submitted a proposal to carry out PkM activities
2	Determine the time and place for PkM activities to be carried out
3	PkM activities begin with an opening and continue with a lecture on shared perceptions about the goals and direction of PkM activities
4	Lecture on basic web security for early childhood (elementary school students)
5	Discussion and creativity of PkM activity participants
6	Evaluation (Questionaire & Feedback)
7	Closing of PkM activities by PkM Team

First, the PkM team submitted a proposal to carry out PkM activities. The proposal outlines the objectives, scope, and key elements of the planned activities aimed at enhancing elementary students' knowledge of web security fundamentals. In the next step, the PkM team determines the time and place for PkM activities to be carried out. Once the proposal is accepted or approved, the team needs to plan the logistics. This includes deciding on the appropriate time and location for the PkM activities to take place. Considerations may include school schedules, available facilities, and other logistical details.

In the third step, the commencement of the activities involves an opening session, to set the tone and introduce participants to the goals and direction of the program. This might include a lecture to establish shared perceptions and understanding among participants about what they aim to achieve through the activities. Next, the core of PkM activities involves delivering lectures specifically tailored for elementary school students. The focus is on imparting fundamental knowledge about web security, tailored to the age group's comprehension level and needs. Then, participant engagement (Discussion and Creativity of PkM activity participants), to enhance learning, the program includes interactive elements such as discussions and creative activities. This step encourages active participation and engagement among the students, fostering a deeper understanding of web security concepts.

After the lecture and discussion, there is an evaluation phase. This may involve the distribution of questionnaires to gauge the participants' understanding and soliciting feedback. Assessments help measure the effectiveness of the program and identify areas for improvement. The conclusion of the activities involves a closing session led by the PkM team. This may include summarizing key takeaways, expressing gratitude to participants, and providing any additional information or resources. It serves as a formal conclusion to the program. The materials and tools needed for this PkM activity are shown in Table 2.

Table 2. Materials and tools

Materials/ Tools	Usage
White board	To create a conceptual
PkM Modul (Papers)	Provide understanding to participants in PkM activities
Stationery	Record questions/feedback from PkM activity participants
Smartphone	Toolkit for web security demo

C. RESULT AND DISCUSSION

The Zaadul Ma'ad Boarding School teachers agreed to the proposed PkM proposal. The Zaadul Ma'ad Boarding School teachers welcomed this PkM activity. PkM activities are carried out according to the planned schedule, on November 29 2023 in the Zaadul Ma'ad Boarding School classroom. The participants in PkM were very active in listening to the presentation and also reading the handouts given by the PkM team as seen in Figure 1.

Figure 1. The atmosphere of PkM activities

Handouts contain explanations of the content presented by the PkM team. An explanation of the importance of web security starts from how to browse the web safely, the characteristics of malicious programs, viruses, or spam that must be avoided as well as solutions so that devices (laptops/smartphones) are protected from malicious programs. Participants (primary school students) are reading PkM material provided by the PkM team.

Figure 2. Students fill in feedback after participating in PkM activities

Figure 2 shows students enthusiastically filling in the feedback given after the PkM team delivered presentation about basic web security. The feedback form contains multiple choice questions regarding participants' understanding of the presentation on web security that the PkM team has delivered. The distribution of this feedback is in the context of evaluating PkM activities, namely to find out the extent to which elementary school student's knowledge and understanding of the importance of web security has increased. As the evaluation, we present the percentage of feedback resulting from PkM activities (Figure 3).
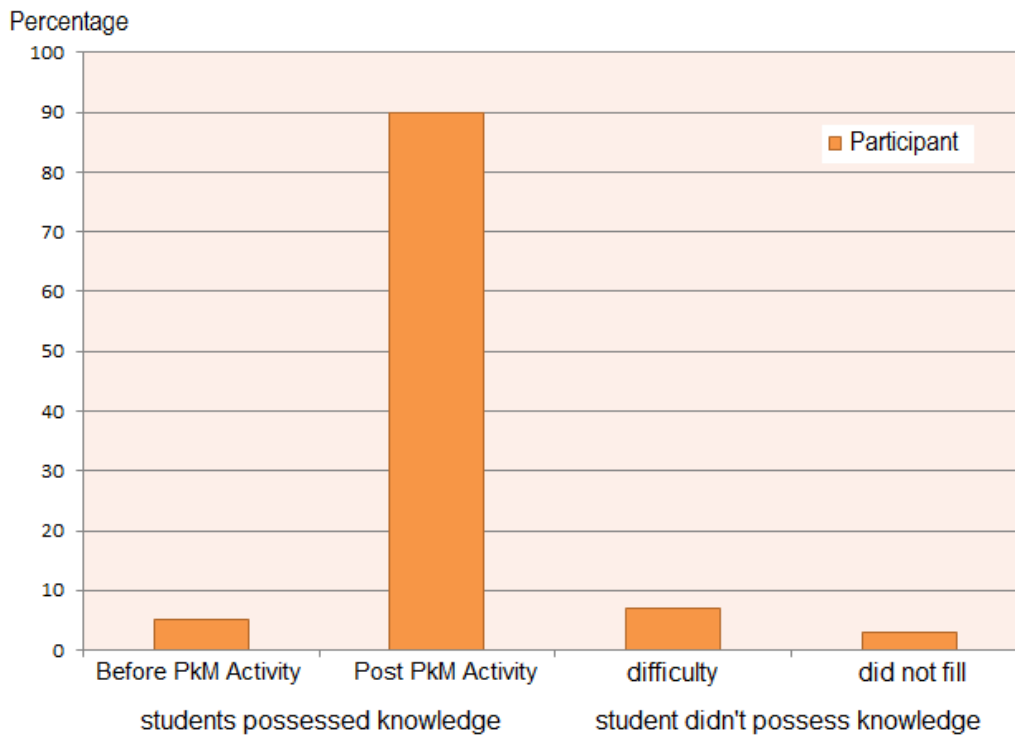

Figure 3. The percentage of students who know about
the importance of web security

Based on feedback from PkM participants, the number of students who stated that they knew and understood the importance of web security was around 90 percent, even though before the lecture was given the number of students who knew about web security was only around 5 percent of the total students who participated in this PkM activity. Furthermore, 7 percent of participants still had difficulty understanding the presentation about the importance of web security. The remaining 3 percent of participants stated that they did not know or did not fill in the feedback that was distributed after the PkM activity.

D. CONCLUSION AND SUGGESTION

The PkM activity with the title Enhancing Elementary Student's Knowledge through Web Security Fundamentals Counseling which was attended by elementary school students at Zaadul Ma'ad Boarding School ran smoothly and successfully. This is measured based on the achievement of targets or goals that have been set at the beginning. Based on feedback from PkM participants, there was an increase in the number of students who knew or understood the importance of web security, from 5 percent to 90 percent. There was an increase of around 85 percent from the total number of participants in PkM activities. As a suggestion, similar PkM activities should be carried out continuously for every level of education, starting from elementary school, junior high school, and senior high school. This needs to be done to increase students' knowledge and understanding of the importance of web security.

ACKNOWLEDGMENT

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