Effectiveness of e-law© student's understanding of offences crime through mobile applications

Nurfarhana Mohamad Sapiee1[1], Aiman Hakim Mohd Rozali[1], Mastang Tanra[1], Norhana Arsad[1]* Siti Norul Huda Skeikh Abdullah [2], Azmin Sham Rambely[3] & Abdul Rahim Bin Mohidin[4]

[1]Department of Electrical, Electronic and Systems Engineering, Faculty of Engineering & Built Environment, Universiti Kebangsaan Malaysia, Bangi Malaysia
[2]Faculty of Science and Technology, Universiti Kebangsaan Malaysia, Bangi Malaysia
[3]Faculty of Information Science & Technology, Universiti Kebangsaan Malaysia, Bangi Malaysia
*Corresponding Author: noa@ukm.edu.my

Abstract: This study discusses the effectiveness of mobile e-Law© applications in exposing students to criminal acts. This application was developed to find out the level of understanding of the students on the criminal offense This app is a medium of learning and to find out the level of student's knowledge of the criminal offense. This application called e-Law© is built based on media learning concepts and online application technology approaches. This app helps students understand the types of offenses and the penalties for each offence in detail in an attractive and easy to understand. Students can also test their understanding by answering a quiz by watching animations and illustrations related to the act and punishment for the crime. This application has been tested and analyzed for usability. A total of 77 respondents from primary, secondary and university students took part in using e-Law©. The results showed that 90% of respondents love learning such apps. Whereas 94.7 % of respondents wanted to know more about the criminal offences in Malaysia through this application and 94.7 % were able to understand the penalties imposed for the offence.

Keywords: *Mobile device applications, act, teaching and learning, crime*

1. Introduction

Violent crime and property crime recorded a high number of up to 26,779 cases as per the date of the investigation paper from 1 January 2018 to 31 December 2018 based on Malaysia Open Data Portal. Among the types of crimes convicted are wounding, stealing, stealing automobiles and stealing motorcycles. Statistics show offences involving 10 states in Malaysia covering all ages. Therefore, from this point of view, the introduction of criminal acts is essential to provide awareness at an earlier stage, i.e. at the school level. Criminal offences among school students showed significant and alarming improvement. Hence, understanding crime should begin at the school level as prevention is better than combating illegal activities. Motorcycle theft cases were the highest in 26,779 cases.

Meanwhile, the crime of unarmed police officers recorded the lowest number of cases (6,543 cases) compared to unarmed, injured, stolen and stolen motorcycles. 7 states recorded more than 1000 stolen car and motorcycle theft cases showing that stolen cases are the most common cases in Malaysia.

As it is known, teachers find it difficult to assess students' understanding of criminal offense acts other than through questionnaires or quizzes. However, in that way, students will also be inclined to memorize the acts and not try to understand the acts in depth. This makes the assessment of students on criminal offenses inaccurate. As an adult individual, it is also quite difficult to understand the terms used in defining every act available in our country. This is also one of the causes of an individual's dislike and

Corresponding Author: Norhana Arsad, Department of Electrical, Electronic and Systems Engineering, Faculty of Engineering & Built Environment, Universiti Kebangsaan Malaysia, Bangi Malaysia. Email: noa@ukm.edu.my

lack of interest in studying the types of criminal offense acts. In addition, access to information related to limited criminal acts contributes to the decrease in students' interest in studying criminal offense acts. Students should refer to any rule book according to the types of relevant acts used by lawyers or related individuals to obtain the relevant information. The announcement was also less effective. For example, school counseling will organize a day of student discipline involving police officers in schools. Counseling teachers will invite police officers to give briefings as well as preliminary exposure on the types of crimes or factors to their cause of involvement in criminal conduct. However, children of today's generation are less interested and easily lose focus if their learning involves only oral lessons.

Figure 1. Types of law books

Figure 1 is among the types of legal books that have been published in Malaysia. In a court case, most of these guidelines, acts, and penal codes will be referred to. Writing this book is organized and requires experts to explain the contents of this book more thoroughly. This will make it difficult for school students to understand the actions and punishments that will be imposed if a crime is committed.

In line with the country's development, digital technology is also increasingly important in disseminating information and at the same time becoming a reference point for the public in seeking information. The use of the internet, especially social media, influences school students' thinking and encourages them to try something new and indirectly causes them to commit crimes in their consciousness or not, as well as the bad influence of school friends and acquaintances outside the school.

Among the initiatives undertaken by the Malaysian Crime Prevention Foundation (MCPF) is the establishment of crime prevention clubs in primary schools and schools throughout the country. Not only that, but some parties are also involved in programs implemented in the school to combat this symptom and among the parties that also cooperate are the Royal Malaysian Police (PDRM), The Malaysian Crime Prevention Foundation (MCFPF) and the Department of Crime Prevention and Community Security (JPJKK). Such programs are a good step in giving students early exposure so that they do not get caught up in any criminal acts or fall victim to crime.

a. Mobile Device Usage

Mobile technology or mobile devices are widely used in a variety of contexts, including entertainment, commercial applications, and even education [1],[2], entrepreneurship [3], health [4]. On the other hand, today's generation of school students whether at the lower or secondary levels have a solid attraction for technology. In the context of education, mobile devices offer new norms in support of teaching and learning [5],[2]while using mobile devices in classroom teaching can provide diversity for teachers and students [5]. Integrating mobile device technology into teaching can transform the learning process more student-driven, thus enabling teachers to spend more time with students individually and act as a guide to them [6]. Therefore, this environment will encourage one to learn on their own and be self-reliant, learn by doing, sharing and evaluating peers, which makes teaching more effective [7] [8]. Moreover, many studies show how planning materials and activities while using mobile devices for the environment [9],[10],[11],[12]. However, an optimal environment cannot be built in a short time and will only be achieved if mobile devices are successfully introduced in the classroom and integrated into teaching continuously.

In most cases, the use of mobile devices in support of teaching and learning is determined by school management which may include a number of teachers [13]. Responsible school management usually consists of principals, vice-principals and ICT coordinators developing the school's communications and technology, resources, and information policies [14],[13]. In addition, those who play an essential role but sometimes receive less attention in the scope of implementation of the school's ICT policy are teachers who are responsible for using mobile devices in teaching in the classroom. Teacher confidence, attitude and anxiety are three critical factors that influence teacher success in integrating new technologies into the school [15] [14]. Teachers' beliefs and attitudes towards flexible learning are the main factors influencing the success of mobile learning integration and related devices [16],[17] [18]. Therefore, continuous training programs and professional development for school teachers should be prepared to help them understand how to use new technologies effectively.

The use of mobile devices as a teaching and learning tool is arguably new in most schools. However, the covid-19 pandemic spread, making teaching and learning digitally and virtually a new norm after the Movement Control Order

(MCO) period was implemented. Teachers need to be proficient in the use of digital technology in teaching and learning, not to mention the COVID-19 vaccine has not yet been discovered. While some may have experience using digital technology in education, they may still find it awkward when it comes to using mobile device technology in their classroom teaching. Teachers' beliefs, attitudes and initial levels of anxiety can affect the effective use of mobile devices in the classroom but will likely change once the device is adopted[9] in online teaching and learning. Understanding this change of trust and attitude will help the school to plan, implement and maintain successful mobile technology integration.

b. The Importance of Technology in Teaching and Learning

The range of information and communication technology tools is proliferating to meet current needs. Researchers have often associated with the term digital natives. The younger generation is naturally attracted to technology because technology such as mobile devices has been exposed to them since childhood [19]. Therefore, the way the current generation learns thinks, plays, communicates and performs tasks have changed and improved to a new phase. Past learning methods are no longer relevant to be applied and need improvements as well as involve the use of technology. This new generation will feel less productive if their daily learning does not have the help of digital and internet equipment).

Physical books such as rule books have been put aside as they tend to use digital books for literacy learning. This causes them to frequently break the rules because they do not read the rules that have been set. Oral learning is also less effective because they are less focused on their teachers' explanations because they need digital learning aids that can appeal to them. Indirectly, the knowledge they want to be exposed to can be absorbed little by little. In the United States, mobile devices have been used to create interactive learning in schools. Some studies have found that learning using mobile devices facilitates students and positively affects school students and improves their time quality [20]. This also increases the motivation of students to continue to increase their knowledge [21]. Digital learning is also able to stimulate the creative thinking of school students [22]. In addition, lateral thinking should also be emphasized in emphasizing the diversity of learning [23],[24].

There are changes to the teaching processes that model cognitive apprenticeship training. The model of cognitive apprenticeship training is not only based on knowledge delivery but needs to be honed in understanding through certain processes. Therefore, this application has been developed as a preventive effort to address the matter accordingly. Empirical research analysis of the use of mobile devices as a tool in educational interventions published in peer-reviewed journals has revealed that the overall effect of mobile device use in education is better than when using a computer or not using a mobile device as an intervention [9],[25]

Thus, a mobile application was designed to test students' understanding of criminal offenses called e-Law©. This app is also intended to expand access online and online. Indirectly, the application is able to vary the method of announcement through downloading installations on mobile application platforms such as "Google Play" and "AppStore".

2. Methodology

This section describes the research methods carried out where the development of this application has been through several phases, namely interviews, application design and also questionnaires as follows:

a. Interviews

The early stages of application development involved several interviews in five schools. Some of the affected areas are in Bangi, Subang Jaya, and the Federal Territory. The interview was conducted for the purpose of i) to obtain ready-made techniques for the disclosure of criminal offenses act on school students ii) types of offenses frequently committed by students iii) the effectiveness of exposure through motivational camps and iv) materials and syllabuses referred to as encumbering materials on criminal offenses act. Based on the information obtained from the interview results, several literature studies were conducted which included the use of mobile devices in teaching and the importance of technology in teaching and learning.

b. design

In order to achieve high effectiveness in teaching and learning, the virtual learning platform is used to attract students to learn the lessons more deeply and understand each content of the learning. Therefore, a mobile application has been developed. The application developed has criteria that are able to attract the interest of students where this application provides an illustration example for each act introduced that distinguishes this application from a physical book. To achieve these objectives multimedia features such as graphics, videos, animations and text are used to help users understand every content of the application in a short time. The video selection is also considered as a suitable context for children as early as 5 years of age.
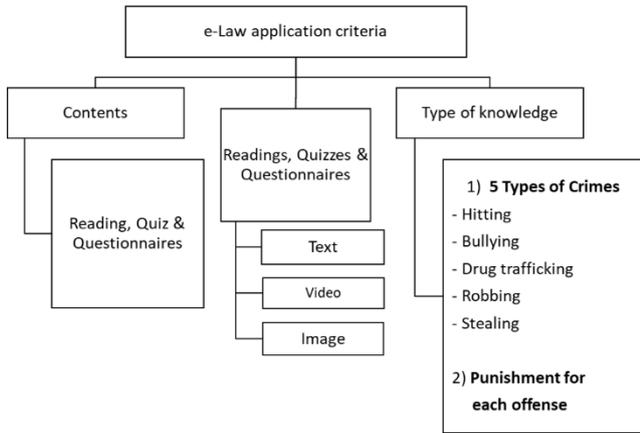
Figure 2. e-Law© application development criteria

Based on Figure 2, the following are important criteria that are emphasized in the development of e-Law© applications in terms of content, user interface display design and knowledge type. Among the types of offenses that have been entered are hitting, bullying, distributing drugs, robbing and stealing. The mistakes are among the most essential errors for school students to know. For example, if the student says any words, or makes any noise or signals seen by a person interfering with the impressions of a person, they tend to think that they are making just a joke. However, the matter is only considered as a small matter and is not categorized as a misunderstanding. They often think bullying is abuse that involves touch like hitting without or using a tool. This should be taken more seriously because bullying and hitting are two different faults. Therefore, e-Law© application has been completed with some info on the types of offenses that need to be known and understood by the students so that they cannot commit the offenses until they are adults.

There are 5 animation videos that have been made based on the types of offenses that have been chosen as a result of discussions with the school that has obtained permission from the Ministry of Education Malaysia as teaching material to test the understanding of users. Each video comes with 2 questions. The first question is regarding the type of offense and the second question is about the kind of punishment for criminal offenses committed based on the animated video. The video is a short-lived animated video that allows users to identify the types of errors made.
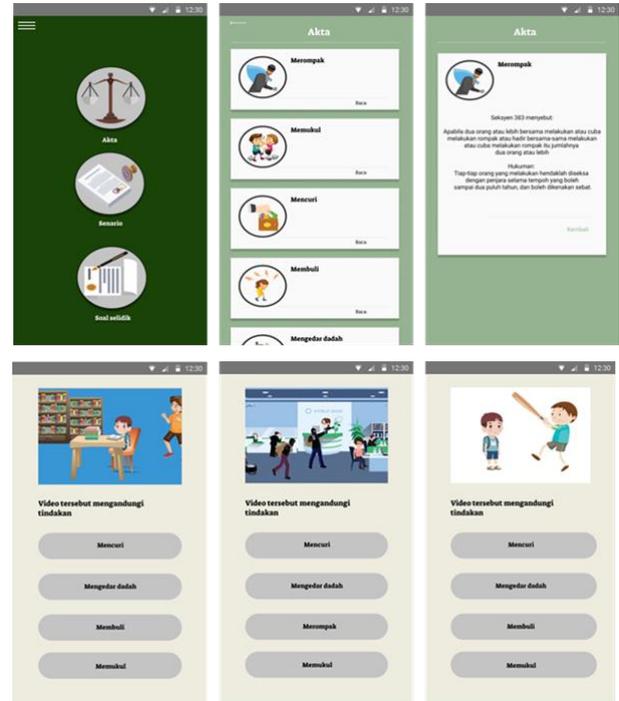

Figure 3. e-Law© app view

Figure 3 is the graphical user interface (GUI) display of the e-Law© application. Development of e-Law© apps using two types of software, namely Figma and Android Studio. For each element of text, Figma images, videos and animations are used as tools to design interactions and detail each part to another part. After that, the programming language code obtained from Figma had to be re-drafted in Android studio to produce a usable prototype as in Figure 4.
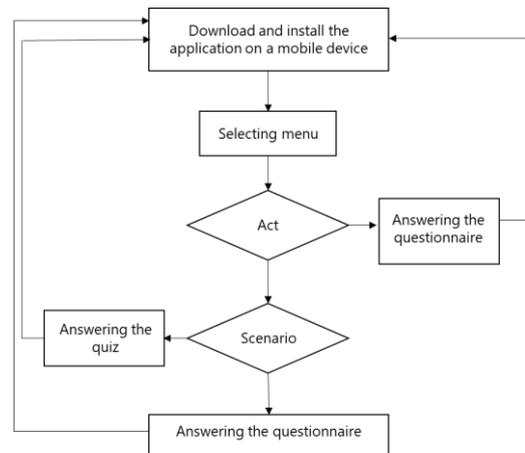

Figure 4. Flowchart of e-Law© application usage

c. Study Samples

The sampling method was used to select the study sample to answer the question of the study. The online questionnaire was conducted whereby every user who has used the e-Law© application had to answer 10

questionnaire questions on the Google Form platform. 77 respondents comprising primary, secondary and university students used the e-Law© application and participated in the questionnaire. The selection of respondents from the school leave the program at the Faculty of Information Technology, UKM does not have an age limit due to the main factor of the size of the sample scattered. Table 1 shows the demographic profiles of respondents.

Table 1. Demographic profile of respondents

	Demographic features	%age (%)
Gender	Men	50.6
	Female	49.4
Country of birth	Kuala Lumpur	24.6
	Selangor	46.8
	Negeri Sembilan	1.3
	Perak	5.2
	Johor	1.3
	Melaka	2.6
	Perlis	1.3
	Terengganu	1.3
	Sabah	2.6
	Kedah	1.3
	Purt	1.3
	Pahang	2.6
	Kelantan	3.9
	Overseas	3.9
Age	5-10 years old	16.9
	11-15 years old	37.7
	16-20 years old	20.82
	20 years and above	24.58

3. STUDY OF FINDINGS

Based on the analysis carried out by this application is developed to achieve several objectives as follows:

  i. Design an app that tests students' understanding of criminal offences
 ii. Expand access through online and offline mobile device application development
iii. Diversify the method of announcement through installation downloads on the mobile application platform

10 questions were presented, which covered the user experience, application usability, effectiveness and perspective view of the e-Law© application. Through the preprocessing process, this application was tested and included in 5 smartphones and subsequently given to students. The results showed that 93.4% of respondents agreed that they gained awareness of good behaviour after using the app. Table 2 below is the result of the questionnaire.

Table 2. Analysis of questionnaire

Through the e-Law© app	%age (%)
Gaining awareness of good behaviour	98.1
Understanding the punishment for mistakes committed	94.7
Be aware of the impact of decisions taken	97.4
Can act to prevent crime	97.2
Understand what to do	93.5
Liking studying the law	96.1
Want to know more about the acts available in Malaysia through	94.7
Want to share e-Law© with friends	96.1

4. Conclusion

Based on the questionnaire conducted, most students responded well to the e-Law© application developed with 94.7 % of them wanting to know more about the act of the criminal offence available in Malaysia through this application and 94.7 % managed to understand the penalties imposed on them for offences committed. Accordingly, 97.4 % of them are aware of the impact of decisions taken especially when involved in crime. This indicates that with the use of mobile application technology, students will be more interested and interested in learning and understanding the criminal act in Malaysia thus fighting crime among students. The e-Law© application can be an innovation and a medium to provide exposure to criminal acts in Malaysia through the use of software that has information sharing and design features that enable users to test the effectiveness of such applications. The interactive design also plays a vital role in attracting students to continue learning about criminal offences.

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