

CHAPTER V

CONCLUSION AND FUTURE WORKS

5.1: Introduction

Information security requires real attention to spread the awareness among different end users. The purpose of any security awareness program is to have a better understanding of security risks that can cause harm and data lost from end users. This study focused especially for secondary school students as it should offer them early awareness on what's required to reduce security risks. Both quantitative and qualitative methodology were used in this study in order to fulfil the research objectives. Libyan secondary school students were the target group aged between 13 to 18 years old, who located in Malaysian area. An actual training program took place in order to achieve applicable objectives to enhance the awareness level between secondary school students.

This thesis is arranged as follows. The first chapter of this study represents a general introduction about the chosen topic, with the chapter two discussed related studies to our concerned area. Then chapter three presented the methodology deployed in order to fulfil the research objectives, followed with chapter four that covers findings and analysis. Finally, chapter five concluded the whole research and presented the potential future work.

5.2: Study Achievement

From the conduct of our study, we can suggest that secondary school students are the best category for any researcher if they need to focus on reducing security breaches

and then enhancing the end user awareness level. This because students are the generation who will contribute and build any organizations' security in the future, and in the case of having early knowledge and education this is going to be a great contribution to the society in reducing the loss of confidential and private information as well as saving the organizations' budgets.

Based on the pre-questionnaire, it was found that secondary school students have an acceptable awareness level in ethical issue, such as "the password have to be more than 8 letters length", but in the real security practice they use their date of birth as a password. In addition, students appeared to have a lower level of awareness on the risks associated with accepting an invitation "Friends request" from people they did not know. Also, students showed readiness to share their daily activities via social networks. Similar findings were also reported in (Tekerek and Tekerek, 2013; Alhejaili, 2013 and Padric, 2012).

Students exhibited risky behavior when they answered to "bully the bullier" in the majority of 36% of respondents in case they have been Cyber-bullied. Also, students appeared to be familiar with the term of cyber bullying when the question asked about "I know what is cyber bullying" and this reflects the spread of this risk between students as presented in the study of (Padric, 2012). Students' reaction to cyber bullying generally, appeared to be limited if compared to other studies (Padric, 2012; Faryadi, 2011). From the results of pre -questionnaire, it can be summarized that the level of awareness among secondary school students needs to meet the security practices to avoid security risks.

Secondary school students' acceptance of training program showed an improvement in the way students answered the post questionnaire. After completed the pre-

questionnaire, students had to sit for the training program. Overall, this training program contains videos, games-based, and posters with brief statements about “passwords, social networks, and cyber-bullying” and how they should react in the case of risks.

With the results obtained from the post- questionnaire, majority of secondary school students showed a better understanding of their role to reduce the information security risks in their cyber life. After comparing the awareness level of pre and post questionnaire, we summarized that there is a real enhancement in students' behaviour, as 86% of students answered positively on the post questionnaire as compared to only 38% aware while answering pre-questionnaire. From these statements and other results in section 4.3 and 4.4 we clearly identified that awareness program has its effectiveness in enhancing the level of awareness between secondary school students. Also, it is essential to create new ways in explaining security risks, as well as to provide the best solution to avoid the risks. These findings support with other related studies that conducted an awareness training program (Veseli 2011; Brady 2010; Eminagaoglu et al., 2009; and Shaw et al., 2009). Based on this the age of secondary school students presented to be important in enhancing the end users' security awareness with the concern of the training program that improve the ability of users to reduce the security risks. The security awareness training program is an ideal way in resembling the security risks on the users view, and makes solving security matters easier in this case. Regarding the literature, we found that few researches considered “what are the security awareness training tools that reflect students' needs” in order to provide with positive outcomes. Based on the finding of our study and the analysis of data collected from students about the training materials provided to them, we

suggested that the game is the most suitable security awareness tool for the age of secondary school students. Regarding our chosen tool, using games have proven their effectiveness in other related studies such as an educational tool toward different age groups. Arachchilage and Asnaka, (2012) found that game was effective in enhancing the level of awareness about phishing threats. Torrente et al., (2010) stated that games impact on enhancing the educational level in several ways. It is recommended for the future researches to consider educating and aware secondary school students about security risks by using games, in order to enhance the level of awareness.

5.3: Study Limitation and Difficulties

The present study investigated Libyan secondary school students in Malaysia regarding the security risks they may encounter in their cyber life. This study considered three security risks and this based on the limitation of the time for this study. The group size of this study was fifty (50) Libyan secondary school students in Malaysia (Kuala Lumpur and Selangor). The size of this group was under the limitation of time and place. The data collected from students required the researcher to transfer from one state to another, and this makes the time for data collection of larger size difficult. Moreover, the data collected from the participants was during the study session while students taking mid-term exams which make the time to conduct the study varied and depending on the students' free time. This should be taken in mind for any future researches that conduct a security awareness study for this age group.

5.4: Future Works

This study did not provide any model, while an actual training program was deployed. In order to achieve high level understanding of what are the risks faced by secondary school students as this study focused only on three kinds of security awareness. Future studies need to cover a wide range of security risks that potentially might be facing by secondary school students. A larger group sample size could show more conclusive results. Also, the time of conducting the study should not be limited to any time especially during the study session. The study should be during the students' summer holiday or at any activity session by the schools, to ensure students more comfortable with the training program and show more pleasant results. This study focused only on Libyan secondary school students in Malaysia and the state of students can be considered in future works.

In addition, future studies should deploy more statistical data analysis for the data which could result in many relevant findings as the current study was limited due to pressure of time and sample size. A wide searching on the cyber portals that provide an awareness training tool for secondary school students which could result in multi material that could be used for this age group.

5.5: Summary

This chapter concludes the conduct of the whole study. The suggested solution and ideas to assist better in the security risks discussed from the perspective of secondary school students. Potential work for any future studies that consider secondary school student was also presented.