USER'S AWARENESS SURVEY ON 1CITIZEN PROGRAM IN UNIVERSITI SAINS ISLAM MALAYSIA (USIM)

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ABSTRACT

The Malaysia government educates the digital etiquette among teenagers, especially the tertiary education, through a special awareness training program named 1CITIZEN Program. The main objective of the program is to foster national unity via appropriate use of technology. It inspires Netizen to become critical thinkers that understand the ethical consequences of online behavior. Universiti Sains Islam Malaysia (USIM) conducted two survey research – pre and post training sessions - among the participants of the 1CITIZEN Program of the Faculty of Science and Technology, in order to know their level of knowledge related to digital etiquette. This paper discusses the results of the survey research related to the topic of information security. Overall, the findings indicated higher percentage of the participants have either "Knowledgeable and able to clarify well" or "Competent and can put to practice fully" about the related topics in information security after attending the training program, means the participants have better knowledge of the information security compared to their previous knowledge.

Keywords: *Digital Etiquette, 1CITIZEN, Netizen, Information Security, Digital Certification.*

1. INTRODUCTION

The commercial Internet in Malaysia began in 1990. Since then, the emerging of new technology and improvement of the infrastructure had made possible the increase coverage areas and ease of access to the Internet. These factors had increased the number of Internet users in Malaysia from 13,000 in 1995 [1] to 17.7 million in 2012 [2].

Besides the availability of Internet coverage, the availability of portable devices such as smartphones and tablets enable the number of Internet users in Malaysia increases. These "easy-to-handle" portable devices target the teenagers. The country could face a digital etiquettes problem with these kind users as they lack of experiences and eager to explore and to know more.

In order to address the issues of digital etiquette among teenagers, especially the tertiary education, a special awareness training program named 1CITIZEN Program was introduced in 2011 which was a joint collaboration between the Ministry of

Higher Education (MoHE) and Prestariang Systems Sdn. Bhd. The main objective of the program is to foster national unity via appropriate use of technology. It inspires Netizen to become critical thinkers that understand the ethical consequences of online behavior. This 2-day training program help the students getting their IC CITIZEN Certification; a world class certification program in Netiquette to confirm and verify your understanding of ground rules for acceptable use in the digital world today. The program certifies knowledge and understanding of the following Values: e-Access, e-Literate, e-Rule, e-Safety, e-Interaction & Collaboration, e-Enterprise, e-Care and e-Accountability.

Universiti Sains Islam Malaysia (USIM) trained over 1000 students in the 1CITIZEN Program from 2012 until 2013. The students were selected from various year of studies and faculties/centers in USIM including Faculty of Science and Technology (FST), Faculty of Quranic and Sunnah Studies (FPQS), and Tamhidi Centre.

USIM conducted two (2) surveys to measure the students' level of awareness and knowledge of information security. The surveys were done before (pre) and after (post) the training sessions and targeted 215 second year students of Faculty Science and Technology.

This paper discusses the results of the survey research related to the students' level of awareness and knowledge of information security, including Credit Card Fraud, Cyber-Bullying, Digital Crimes, Digital Ethics, Digital Security Breaches, Personal Information Disclosure, Secure Online Transactions, and Virus and Personal Information Protection, based on their prior knowledge and knowledge acquired after completion the 1Citizan training program.

2. 1CITIZEN PROGRAM

The 1CITIZEN Program was introduced in 2011 which was a joint collaboration between the Ministry of Higher Education (MoHE) and Prestariang Systems Sdn. Bhd. The official launch of 1CITIZEN Program was performed by Dato' Seri Mohamed Khaled Nordin, Minister of Higher Education on 14 December 2012. The 1CITIZEN portal (**Error! Reference source not found.**) could be accessed at http://www.1citizen.com.my/
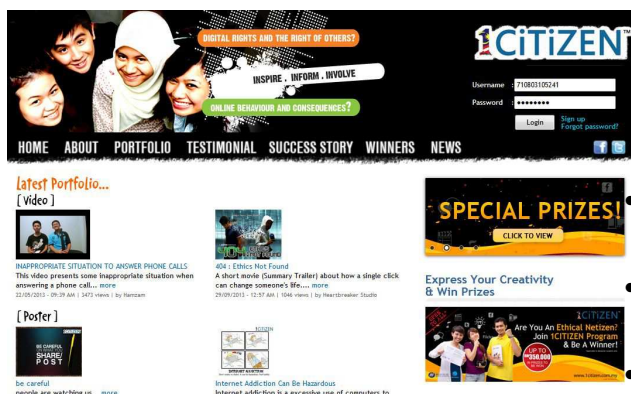

Figure 1 : The 1CITIZEN Portal

The main objective of the 1CITIZEN program is to foster national unity via appropriate use of technology. It inspires Netizen to become critical thinkers that understand the ethical consequences of online behavior. The program vision are [3]:

- To develop a sense of 'keNegaraan', collaboration, responsibility and ownership to the communities during their online digital experience equation.
- To promote positive messages among Youth.

- To encourage youth activism and volunteerism.
- To integrate a Malaysia-owned Globally Benchmarked and Standards for digital literacy Certification.

This 2-day training program help the students getting their IC CITIZEN Certification; a world class certification program in Netiquette to confirm and verify the students' understanding of ground rules for acceptable use in the digital world today. The IC CITIZEN is applicable to all the internet users or Netizen [4] that is responsible for their actions and what they post online.

IC CITIZEN Certification is the first of its kind in the world that is specially developed and designed to produce digitally literate and responsible citizens. This unique yet universal certification program aims to impart Acceptable Usage Policy (AUP) that lays down rules of acceptable 'netiquette' or behavior that must be applied when operating digital devices and accessing the Internet within a society. The IC CITIZEN Certification objectives include the following [3]:

- To produce digitally literate and responsible citizens via:
  - Becoming critical thinkers in analyzing sources of information and messages as well as to evaluate what the impact can be.
  - Understanding ethical consequences of online behavior.
  - Making good ethical decision of their behaviors online.

To prepare users for a society full of technology without misusing and abusing them.

To globally promote 'good behavior' when communicating, foster 'unity' and 'collaborative culture' in the digital world.

To ensure the rights to an equitable, secure and reliable access to Digital Media and Resources.

The program certifies knowledge and understanding of the following Values:

- **e-Access** module explores the gap between people with effective access to digital and information technology, and those with very limited or no access at all. This includes the technology used, the imbalance both in physical access to technology and the resources needed to effectively participate.

- **e-Literate** module provides an introduction to 21st century global digital technology. It explains the capabilities to use digital technology and knowing when, when not and how to use it. It stresses on the ethics, process of learning about technology and the uses of technology.
- **e-Rule** module will introduce and explain the details concerning cybercrimes and copyright issues and the effect they bring to people and businesses. Participants will also get to look at Data Protection legislation; what it means and how important it is in protecting your rights.
- **e-Safety** module guides the participants on how to protect important information from Internet threats.
- **e-Interaction & Collaboration** module highlights the exchange and sharing of information using digital systems or tools. It includes humility, loyalty and respect for others when communicating. If the tools are used properly, it can foster unity. In some society, forwarding SMS or text messages and e-mails without checking its authenticity and origin is socially unacceptable. This chapter educates the participants as the Netizen to become critical thinkers in analyzing sources of information and messages as well as to evaluate what the impact can be. Therefore, it helps them to make good ethical decision of your behaviors online.
- **e-Enterprise** module emphasizes the consequences of poor practices such as impulsive buying and bidding in online marketplaces.
- **e-Care** module will take a look at some of the most common health and safety issues and the steps that can be taken to reduce the risks. Participants will also be introduced to several terms such as 'computer & Internet addictions', 'ergonomics' as well as the environmental impact of using computers.
- **e-Accountability** module discusses the issue of "being accountable" when using digital technologies in our everyday life. It covers the right and privileges of Net users and the behaviors that should come with them. It highlights the importance of having a sense of responsibility as a user of digital technology. This module will introduce the concept of Acceptable User Policy (AUP) in organizations and institutions.

3. METHODOLOGY

The methodology used consists of research design, instrumentation, data collection and analysis. It was adopted in order to achieve the stated objectives. As this research aims to investigate the information security related knowledge and awareness among students, the quantitative strategy (a questionnaire) method was used during this research.

The questionnaires were taken from the Check List of the 1CITIZEN Student Quick Reference program book. Among the 35 questions / statements from the Check List, around 11 of the questions / statements were related to the topic of information security, including Credit Card Fraud, Cyber-Bullying, Digital Crimes, Digital Ethics, Digital Security Breaches, Personal Information Disclosure, Secure Online Transactions, and Virus and Personal Information Protection, which is the interest of this paper.

3.1 Sampling and Data Collection

In survey research, the important elements are randomization and bias, and the descriptive survey method demands that the researcher select from the general population a sample population that will be both logically and statistically defensible [5]. A total of 215 second year students of Faculty Science and Technology in Universiti Sains Islam Malaysia (USIM) participated in this study.

3.2 Questionnaire Development

The questionnaires were taken from the Check List of the 1CITIZEN Student Quick Reference program book. This survey research has a total of 35 questions which are divided into Eight (8) parts according to the Values: e-Access (5 questions), e-Literate (6 questions), e-Rule (4 questions), e-Safety (4 questions), e-Interaction & Collaboration (4 questions), e-Enterprise (4 questions), e-Care (4 questions) and e-Accountability (4 questions) [6].

Based on the students' prior knowledge for the Pre-survey session and based on the students' knowledge acquired after completion the 1CITIZAN program for the Post-survey session, they indicate the scales that are most appropriate to them, in the scale provided.

The Scales are as the following:

0 - No knowledge.
1 - Limited knowledge.
2 - Knowledgeable and able to clarify well.
3 - Competent and can put to practice fully.

4. RESULTS AND DISCUSSION

This paper discusses the results for the questions / statements related to the topic of information security, including Credit Card Fraud, Cyber-Bullying, Digital Crimes, Digital Ethics, Digital Security Breaches, Personal Information Disclosure, Secure Online Transactions, and Virus and Personal Information Protection.

4.1 Demographics

A total of 215 second year students participated in this survey research – 169 females and 46 males. It was found that the number of female students is larger as compared to male students due to the fact that the majority of the tertiary education students are female.

4.2 Credit Card Fraud

Error! Reference source not found.shows the results for the question on credit card fraud. Based on the results, 184 (85 %) students are able to acquire necessary knowledge related to the definition and details of credit card fraud, and know the proper ways to protect their family and themselves from any credit card fraud.

Table 1: Understand What Credit Card Fraud Is And Know Proper Ways To Protect From The Credit Card Fraud.

Rating Scales	1CITIZEN Program	
	PRE	POST
0 – No Knowledge	20	0
1 – Limited Knowledge	65	31
2 – Knowledgeable and able to clarify well	95	104
3 – Competent and can put to practice fully	35	80

4.3 Cyber Bullying

When users are using electronic means, such as e-mails and media social, to bully or harass any individuals or groups for their personal purposes, it is called Cyber-Bullying, which usually involves teenagers. **Error! Reference source not found.**provides the statistics for the questions / statement about the understanding of the meaning of cyber-bullying and how users should do to avoid ecoming a victim.

Table 2: What Is Cyber-Bullying And How To Avoid Becoming A Victim

Rating Scales	1CITIZEN Program	
	PRE	POST
0 – No Knowledge	4	0
1 – Limited Knowledge	34	2
2 – Knowledgeable and able to clarify well	107	90
3 – Competent and can put to practice fully	70	123

The result also shows an increase number of students' rating for Scale "3 - Competent and can put to practice fully" from 70 (32%) to 123 (57%). A total of 213 (99%) respondents is knowledgeable or competent in avoiding themselves from becoming a cyber-bullying victim.

4.4 Digital Crimes

Identifying various forms of digital crimes are important in order to avoid becoming a victim. **Error! Reference source not found.Error! Reference source not found.**show the responses related to the questions / statements on digital crimes.

Table 3: Able To Identify Various Forms Of Digital Crimes

Rating Scales	1CITIZEN Program	
	PRE	POST
0 – No Knowledge	18	0
1 – Limited Knowledge	58	16
2 – Knowledgeable and able to clarify well	106	122
3 – Competent and can put to practice fully	33	77

The result shows more than 92% of the students have acquired knowledge after completion the 1Citizan training program (compared to 64% students' prior knowledge) in identifying various forms of digital crimes. After completing the training sessions, a total of 58 (27%) students claimed they are "competent and can fully practice" the actions on how digital crimes can affect individuals and the economy, compared to 24

(11%) students rated the same scale before the training sessions.

Table 4: Fully Aware Of How Digital Crimes Can Affect Individuals And The Economy

Rating Scales	1CITIZEN Program	
	PRE	POST
0 – No Knowledge	5	0
1 – Limited Knowledge	31	20
2 – Knowledgeable and able to clarify well	121	107
3 – Competent and can put to practice fully	58	88

4.5 Digital Ethics

Two (2) questions related to digital ethics were included in the survey research. The first question is related to the capability to evaluate unethical digital acts and security issues that affect the security of electronic data (results in **Error! Reference source not found.**). The other question is about knowing what is considered as ethical and unethical uses of technology (results in **Error! Reference source not found.**).

Table 5: Capable To Evaluate Unethical Digital Acts

Rating Scales	1CITIZEN Program	
	PRE	POST
0 – No Knowledge	19	0
1 – Limited Knowledge	78	26
2 – Knowledgeable and able to clarify well	101	112
3 – Competent and can put to practice fully	17	77

Table 6: Know What Is Considered As Ethical And Unethical Uses Of Technology

Rating Scales	1CITIZEN Program	
	PRE	POST
0 – No Knowledge	9	0
1 – Limited Knowledge	39	13
2 – Knowledgeable and able to clarify	110	86

well		
3 – Competent and can put to practice fully	57	116

Based on the results in **Error! Reference source not found.**, there is drastic increase in the students' competency related the issues of digital ethics. Students are able to describe digital ethics and its importance. This shows that the training is able to feed them with useful information as the topic was under-taught subject in schools. New technologies bring about the need to interpret old values in new ways, but also may call for the creation of new codes of conduct when new actions are made possible with the use of technology. Several ethical codes dealing with technology use exist and many schools have adopted Acceptable Use Policies that include rules for the proper use of information technologies. Teachers, students, and parents need to know and understand these codes.

4.6 Digital Ethics

The ability to identify different forms of digital security breaches, such as cyber-stalking and Internet Predator, are vital in preventing and taking necessary precautions against the breaches. The students' knowledge on this issue can be seen in **Error! Reference source not found.**

Table 7: Able To Describe Different Forms Of Digital Security Breaches And Take Necessary Precautions Against Them

Rating Scales	1CITIZEN Program	
	PRE	POST
0 – No Knowledge	18	2
1 – Limited Knowledge	79	24
2 – Knowledgeable and able to clarify well	94	131
3 – Competent and can put to practice fully	24	58

An increase of 33% (from 54% prior knowledge to 87% able to acquired knowledge) of students who claim become knowledgeable or competent in their ability to describe different forms of digital security breaches and to take necessary precautions against the digital security breaches. This shows the training benefits the students in their knowledge on digital security breaches.

There are two (2) students responded as "0 – No Knowledge" which may be the student's absence or lack of intention or interest during training sessions, or they unable to understand the new terms of digital security.

4.7 Personal Information Disclosure

This question / statement asks the students to rate their understanding of the proper ways to disclose their personal information to others on the Internet. The responses are in 0

Table 8: Understand How To Disclose Personal Information On The Internet

Rating Scales	1CITIZEN Program	
	PRE	POST
0 – No Knowledge	1	0
1 – Limited Knowledge	40	11
2 – Knowledgeable and able to clarify well	96	96
3 – Competent and can put to practice fully	78	108

There are an increase number of students' rating for Scale "3 - Competent and can put to practice fully" from 78 (36%) to 108 (50%). This shows the training benefits the students in understanding about the proper ways to disclose their personal information to others on the Internet.

4.8 Virus and Personal Information Protection

Computer viruses or malware are a major threat to our computer systems. The capability to update the virus protection software is significant in protecting personal information. **Error! Reference source not found.**shows the results for the questions / statement related to the students' capability to update virus protection software and protect their personal information.

Table 9: Able To Update Virus Protection Software And Protect Personal Information

Rating Scales	1CITIZEN Program	
	PRE	POST
0 – No Knowledge	20	2
1 – Limited Knowledge	60	31
2 – Knowledgeable and able to clarify	94	110

well		
3 – Competent and can put to practice fully	41	72

Based on the results in **Error! Reference source not found.**, majority of students are able to acquire necessary knowledge related to updating their virus protection software and protect their personal information.

Two (2) students responded as "0 – No Knowledge" which may be the student's absence or lack of intention or interest during training sessions, or they unable to understand the new terms of in information security.

4.9 Secure Online Transactions

Two (2) questions related to secure online transactions were identified in the set of survey research. The first question is "I know how to determine a secure website for my online transaction activity," (results in **Error! Reference source not found.**). The other question is "I know how to keep all my transaction details safe from identity theft," (results in **Error! Reference source not found.**).

Table 10: Able To Determine A Secure Websites For Online Transaction Activity

Rating Scales	1CITIZEN Program	
	PRE	POST
0 – No Knowledge	13	0
1 – Limited Knowledge	65	19
2 – Knowledgeable and able to clarify well	100	103
3 – Competent and can put to practice fully	37	93

Table 11: Know How To Keep Online Transaction Safe From Identity Theft

Rating Scales	1CITIZEN Program	
	PRE	POST
0 – No Knowledge	9	0
1 – Limited Knowledge	65	23
2 – Knowledgeable and able to clarify well	104	96

3 – Competent and can put to practice fully	37	96

Based on the results above, students have better knowledge on the importance of secure online transactions.

5. CONCLUSION

The Malaysia government educates the digital etiquette among teenagers, especially the tertiary education, through a special awareness training program named 1CITIZEN Program. The main objective of the program is to foster national unity via appropriate use of technology. It inspires Netizen to become critical thinkers that understand the ethical consequences of online behavior. This 2-day training program helps the students getting their IC CITIZEN Certification, which certifies knowledge and understanding of the following Values: e-Access, e-Literate, e-Rule, e-Safety, e-Interaction & Collaboration, e-Enterprise, e-Care and e-Accountability. Universiti Sains Islam Malaysia (USIM), two surveys were conducted – pre and post training sessions - among the participants of 215 second year students of Faculty Science and Technology, in order to know their level of knowledge related to digital etiquette. Among the 35 questions given, 11 of the questions were related to the topic of information security - including Credit Card Fraud, Cyber-Bullying, Digital Crimes, Digital Ethics, Digital Security Breaches, Personal Information Disclosure, Secure Online Transactions, and Virus and Personal Information Protection. From the survey research results, the findings indicated higher percentage of the participants have either knowledgeable or competent about the information security issues after attending the training program, means the participants have better knowledge of the information security compared to their previous knowledge. This shows that the training could improve the participants' knowledge and capability related to information security topics and issues.

6. ACKNOWLEDGEMENT

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