2020

Effective Online Safety Awareness for Young People in Less Developed Countries

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EFFECTIVE ONLINE SAFETY AWARENESS FOR YOUNG PEOPLE IN LESS DEVELOPED COUNTRIES

by

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A thesis submitted to the University of Plymouth
in partial fulfilment for the degree of

DOCTOR OF PHILOSOPHY

School of Engineering, Computing and Mathematics

June 2020

Acknowledgements

I would like to thank the University of Plymouth and my excellent supervisory team of Professor Steven Furnell and Dr Maria Papadaki for their advice and support throughout this research project. In Thailand I was supported and encouraged in my work by the NGO, International Thai Foundation (https://thai-charity.org/) headed by John Lewis and Thanyaphat Choksirithananon. They helped organise work permits and visas without which I could not have carried out the work. They also gave me the freedom to develop projects like the online safety workshops which benefitted the research greatly.

This was a self funded research project and at many turns relied on the kindest and generosity of individuals and institutions that gave up their time and resources. Chief amongst them is Dr Tharabun Khuchinda a long time friend and the main collaborator in this research project. He facilitated meetings with Thai institutions, schools and teachers. He also translated most of the material into Thai and helped facilitate the workshops.

A big thank you to Miss Paphanat Wichitpan (Kru Bom) who, along with Tharabun, was instrumental in setting up the surveys and interviews. Other teachers who gave up their valuable time in helping to arrange interviews and carry out workshops were Miss Sudarat Promsaeng (Kru Eve) and Miss Wiphawee Saenthaweesuk (Kru Tem).

Thank you to the Nong Khai Education Authorities and the directors, teachers and students of the three Nong Khai province schools; Nanangpatthanasueksa School, Luangphordamwittaya School and WatPhratatwittaya School.

Thank you to Roi Et Rajabhat University President, Dr. Chaloey Pumipun and Dr. Kriangsak Srisombut, Vice President for Student Development, for kindly allowing us to conduct the research in Roi Et province. Lastly, thanks to the directors, teachers and students of the three Roi Et schools; Demonstration School of Roi Et Rajabhat University, Boontaweewattanawittaya School and Anuban Khorkaew School.

Author Declaration

At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award without prior agreement of the Doctoral College Quality Sub-Committee.

Work submitted for this research degree at the University of Plymouth has not formed part of any other degree either at the University of Plymouth or at another establishment.

Relevant results of the research were written up as papers and presented at four conferences, two in Thailand, one in the US (by one of the author's supervisors) and one in the UK. These are listed in the appendices.

Word Count of main body of thesis: 57,795

Signed 

Date 22 June 2020

Abstract

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Kona Ramesswar Kona Herkanaidu

In less developed countries (LDCs) there is a research deficit on the positive and negative aspects of their respective emerging digital cultures. Education programmes that seek to raise awareness of online safety, needs to be based on evidence and not simply transposed from other countries as the issues involved may be very different. Thailand, in particular, has very little data that can be used to create meaningful educational material. This was determined after a thorough literature review which found that most of the research has been carried out in the advanced economies of North America, Europe and Australasia. By contrast in South East Asia very little research had been carried out.

This research proposes an integrative security awareness education framework for emerging digital cultures. It was constructed from the ground up so that it would be evidence led. In the first phase, a survey of the online behaviour and attitudes of young people in Thai schools was undertaken. Between November 2016 and June 2018, 352 students aged between 12 and 18 completed a comprehensive online questionnaire. In addition, 25 students were interviewed and asked to describe their online experiences both good and bad. From the survey it was found that 69% of students had been upset by an online interaction with 55% experiencing some form of cyber-bullying. They were also exposed to potentially harmful content. At least a third or more had seen posts or discussions on; committing suicide, self harm, being very thin, sexual images and hate messages against individuals and groups.

In terms of mediation the interviews revealed a slightly different picture than the one painted in the survey. In the latter, young people suggested that they did sometimes talk to their parents and teachers about upsetting experiences. In the interviews most said that they did not tell their parents or teachers about negative online interactions. This was backed up during the workshops with most reasoning that what they were going through was not important enough to tell a parent or teacher or that they might be the ones that get blamed. They would either stay silent or tell a close friend.

A series of online safety workshops were carried out structured around the theme of cyber-bullying as that was the standout issue from the surveys and interviews. An action-research approach was taken to determine what kind of activities would be best to engage Thai students. Activities that were based around active learning strategies like gamification (i.e. using elements of game design) and involving cooperation or competition proved the most successful. Activities where students had to present something or be involved in classroom discussions did not fare too well.

The resulting education framework from the field research consists of themes and topics that are relevant to LDCs as well as the type of activities that works best. A novel component, ‘Cultural Mask’ was added to the framework. This looks at the influence of a country’s culture and its impact on education. In Thailand this includes the Sufficiency Economy Philosophy (SEP). In the education sector, SEP schools should promote student centric learning with creativity, critical thinking and problem solving amongst other goals. Knowledge they learn should lead to the betterment of their school and community. Therefore, the education framework can be adapted to reflect the SEP goals. In other LDCs by working through the education framework, awareness programmes can be developed that will be effective and culturally relevant.

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1. Introduction

1.1 Overview

According to the United Nations (2019) the world population is currently around 7.7 billion people. Of these around 4.4 billion or 57% are Internet users and represents a 1,125% increase since the year 2000 (Miniwatts Marketing Group, 2019). The Internet in many instances has replaced telephony as the main information communication technology (ICT). Consider your smartphone (i.e. if you have one) how often do you use it to make voice calls compared to the myriad of other uses, from searching the Internet, playing games, engaging in social networks and for street directions. Kritzinger (2015) notes that, “ICTs have become a necessity in all aspects of our lives and are used in all areas from education, socialising and information gathering to being the foundation in industrial processes” (p. 1243). While much of this is for the better she points out that, “if technologies are used incorrectly, it can lead to information being compromised (identity theft); access to inappropriate material (pornography); and emotional-related threats (cyber-bullying)” (Kritzinger, 2015, p. 1243). According to Livingstone and Bulger (2014) this:

> *“environment is reshaping children’s lives for better and for worse ... more and more children are going online to learn, participate, play and socialise ... almost every aspect of children’s lives has an online dimension, whether through their direct engagement with ICT or through the institutional management of contents or services that affect the conditions of children’s lives. Indeed, it is becoming hard to draw the line between offline and online”* (p. 317).

Given this scenario it becomes imperative to

1. Research young people’s Internet use in terms of risks, benefits and opportunities.
2. Create and promote online safety awareness (synonymous with Internet or cyber safety awareness) messaging and education.

In many countries and in particular, advanced economies of Europe, North America, Australia, Japan and New Zealand (United Nations, 2014, p.144) have invested time

and resources to do the research and produce national education programmes to tackle the issues. Examples include the European Kids Online project and Australia's Cybersmart programme which are discussed below in Chapter two. The story is very different in less developed countries (hereafter referred to as LDCs). This research defines LDCs as all countries that according to the UN (United Nations, 2014) do not belong to the advanced economies grouping. This mostly includes countries in South America, Africa and Asia. The European Kids Online and Global Kids Online projects discussed in Chapter 2 refer to advanced countries as the 'Global North' and to LDCs as 'Global South' (Livingstone, Byrne and Bulger, 2015; Banaji, 2016).

Amongst LDCs Brazil and South Africa are notable exceptions, in that, extensive research into young people's online experiences are being conducted. However, this does not mean that it necessarily leads to effective education programmes. Kritzinger (2017) suggests that, "the shortcomings with regard to cyber safety awareness and education are mostly visible in developing countries, such as those in Africa," (p. 24). In relation to South Africa she poses the question, "are the learners properly educated on how to operate safely and securely in the technology environment?" (Kritzinger, 2017, p. 24). She answers her own question with a succinct, 'no'.

The challenge to improve cyber awareness in LDCs may be best achieved in the school education sector at an early stage. The proportionate numbers of children attending primary and secondary education has been rising globally, whereas higher education is still largely unattainable for many citizens. As such, a high number of people in LDCs may exit formal training and education at that point and might not get a chance to receive formal cybersecurity training at work or at University. This is backed up by the Global Education Monitoring Report, produced by UNESCO, which states that for young people worldwide, "in 2010–2015, completion rates were 83% for primary, 69% for lower secondary and 45% for upper secondary education." (Global Education Monitoring Report Team, 2017, p. xvi).

For tertiary education (ages 16 – 24 depending on the country) for participation in technical and vocational education programmes there is a wide disparity between low and middle income countries (LDCS) and high income (developed) countries. For those in the lowest income group which include countries such as Cambodia and Mauritania just 8% leave secondary education and enrol on some kind of tertiary

education. For middle income countries like Thailand and South Africa this goes up to 33%. In high income countries like France and Japan, the percentage of young people that go on to further education is 74% (Global Education Monitoring Report Team, 2017, p. 304, 340). With this in mind it becomes even more imperative to develop effective online safety awareness programmes for school age young people in LDCs.

For the Asia-Pacific region Park & Tan (2016) recognise that much of the relevant research has been conducted in mostly Western nations and there is a need “in other regions, including Asia-Pacific countries, to identify ways to address issues given the characteristics and contextual factors in the region” (p. 9). Gasser et. al. (2010) adds that "to the extent that developing nation-specific research has been conducted; much of it appears to be based on anecdotal evidence" (p. 23). They go on to say that:

> *“where either qualitative or quantitative information regarding the risk categories is available the results are not typically comparable between countries ... with regard to future research on children and young people in digital spaces, researchers in developing nations and elsewhere may be inspired by the best practice guide for cross-national comparative research as developed by EU Kids Online project”* (p. 23).

Chapter Two takes an in-depth look at the EU Kids Online project, which morphed into the Global Kids Online project, as well as other relevant studies from around the world.

1.2 Aims & Objectives

The primary aim of this research is to introduce an integrative security awareness education framework for emerging digital cultures in LDCs. The framework is an evidence-based construct and suggests the types of content to include as well as the best teaching approaches for LDCs. In this respect it provides a theoretical and practical foundation that can be utilised and adapted by policy makers to direct education programmes and teaching material for educators. The resultant education framework’s focus is to instil young people with digital resilience (explained in Chapter 6) to navigate the online world.

In order to achieve the primary aim a number of objectives are addressed:

1. Conduct a critical review of research studies on online safety awareness in different countries.
2. Design a research approach and conduct an investigation to determine the factors that influence online attitudes and behaviour of young people.
3. Investigate educational practices on effective approaches for teaching online safety awareness.
4. Develop an integrative security education framework for online safety awareness in LDCs.
5. Determine topics and activities to be included in the education framework.
6. Evaluate the education framework and its novel contribution.

The first stage is to carry out a desktop review of relevant studies associated with young people's digital lives and in particular the risks, benefits and opportunities they face. The review takes in studies from around the world in both advanced countries and LDCs. In the second stage a working model is developed to account for the factors involved in shaping young people's attitudes and behaviour online and the outcome of their interactions in terms of positive experiences and ones that are potentially harmful.

Apart from a few countries including, Brazil and South Africa (see Chapter 2) online safety issues are under researched in LDCs. Therefore to better understand the most important issues facing young people online it is necessary in the third stage to carry out original research. After which, in the fourth stage, the data is analysed. The fifth and sixth stages investigate the issues of culture and educational approaches; how they inter-relate and impact the environment young people operate in. The seventh and last stage is to develop an education framework that provides a basis for effective online safety awareness in LDCs.

1.3 Motivation

In late 2007 the researcher took an 18-month sabbatical from his then company, Kaspersky Lab, to undertake voluntary work in Thailand and Russia. In Thailand he taught English and computers at a couple of local schools, one at a state school, and

the other at a Buddhist temple school for novices. This was in Nong Khai in the North East of Thailand. The region as a whole is sometimes referred to as Isan and is one of the most underserved regions in Thailand. He then volunteered at an orphanage in Russia and participated in English camps. In late 2013, he gave up his role as an education manager and security researcher for Kaspersky in order to pursue voluntary work full time.

He went back to Nong Khai and started taking part in managing English camps. Surprisingly, he found that even though the children came from rural and less well off areas of Nong Khai province, most seemed to have smartphones. He created a few online safety workshops including one on passwords and found that they did not really think about such issues. On further probing he found out that at school they did not learn about online safety. From speaking with teachers and checking online realised that there were no national or local education programmes that addressed online safety issues. Furthermore, there were very few research studies looking at the online behaviour of young people in Thailand (addressed in section 2.6 Asia-Pacific Studies).This then was the genesis of the idea to turn this gap in knowledge into a PhD research project.

1.4 Thesis Structure

Chapter 2 is the literature review. It looks at the state of current worldwide research in the area of online safety for young people. European research is mainly focussed on the work done by the Kids Online project, (Livingstone, Mascheroni & Staksrud, 2015) which has now expanded to become Global Kids Online, (Livingstone et al., 2015). Case studies from Brazil, South Africa as well as Asia-Pacific countries were reviewed.

Chapter 3 discusses the methodological approach and research tools considered. A major factor was that the research should be made comparable to other studies. Therefore, it was decided to use the research tools provided by the Global Kids Online project but with a simplified adapted model. A mixed methods approach using a quantitative survey followed by qualitative interviews meant that as well as getting statistical information (that could then be used for comparative analysis), the reasons and stories that underlay the results would provide a more holistic picture of the state of young people’s attitudes and behaviour online.

Teaching methods and strategies were discussed to find out which ones offered the best approaches for delivering online safety awareness. For evaluating the effectiveness of the exploratory workshops an action research approach was employed. This was because a number of workshops were planned and therefore after each one they could be evaluated and changes / improvements could be made in the next.

Chapter 4 discusses the quantitative survey including the work involved in developing and adapting it for Thailand. An analysis of the Nong Khai survey is presented comparing it to the Kids Online project. The Roi Et survey is then compared to the Nong Khai survey and the similarities and differences are discussed.

Chapter 5 discusses the qualitative element of the research. Interviews were carried out in Nong Khai and Roi Et provinces with the objective of contextualising some of the findings from the quantitative survey that were carried out in the first province. It provides authentic stories of the positive and negative online experiences that young people go through and a useful insight into their motivations and behaviour.

Chapter 6 introduces the Young People Online (YPO) Education Framework and discusses all the factors that make it up including; the YPO model, the effect of the cultural mask, online safety awareness topics and activities and the resulting applicability matrix which includes lesson outlines and resources needed.

Chapter 7 is the Results section which is a discussion and evaluation of the exploratory workshops. In particular, which activities the students engaged with and which ones did not work as intended.

Chapter 8 is a discussion of the proposed education framework and reflections of findings from the five year research project including the challenges encountered and an evaluation of the framework based upon the findings from applying the activities and methods.

Chapter 9 is the Conclusion and includes a review of the work including; a discussion of its contribution to online safety research, its limitations and the future direction for both research and practice.

2. Review of Online Safety Awareness Education Studies

2.1 Overview

The introduction above outlined some of the reasons why online safety awareness education is important. In this chapter we discuss past as well as ongoing research in advanced countries and LDCs, sometimes referred to as the global south, where most LDCs reside. As we have already ascertained most of the work both in terms of research and education takes place in advanced countries. In contrast the concept of online safety is little thought of and little researched in LDCs. The availability of the Internet however has spread to all corners of the world. For example, in Thailand and Laos some rural villages only gained access to electricity in the first decade of the 21st century. Fast forward just a few short years and Internet connected smartphones have become commonplace especially amongst young people. Ólafsson, Livingstone and Haddon (2013) notes that “the rapidity with which children and young people are gaining access to online, convergent, mobile and networked technologies is unprecedented in the history of technological innovation and diffusion” (p. 6).

In advanced countries, initiatives such as the EU Kids Online project have provided evidence based information for policy makers and educators to make laws and education materials respectively. In LDCs the situation is very different. While Internet access and online services have grown apace legislation and education have lagged behind. Livingstone, Byrne and Bulger (2015) point out that “in many countries … and especially in the global south, there is too little research to gain a sufficient understanding of children’s practices and contexts of Internet use” (p. 9). Therefore, it is up to researchers to do the appropriate field work in order to fill this information gap.

The first step is to learn from what is already known. A popular online safety resource in the UK is https://www.internetmatters.org/. Below is their list of the top online issues facing young people:

- Screen Time

- Cyber-bullying
- Inappropriate Content
- Online Reputation
- Online Grooming
- Online Pornography
- Sexting
- Self-harm
- Radicalisation
- Privacy and Identity Theft

As we will discover this concurs with some of the findings from research in advanced countries. However, is this list universally applicable? Is it representative of issues facing young people in all countries and cultures? And can we transpose educational material and teaching methods that work in advanced countries and apply them effectively in LDCs? Finding out answers to these questions will be the drivers for this research project.

First, we will give a brief definition of each of these topics and where appropriate reference studies in their respective area. Then we will examine the existing research related to young people and online safety as a whole; starting by looking at existing studies in non LDCs and then move on to the research that has been undertaken in those countries.

2.1.1 Screen Time

The relationship between screen time and well-being is a long contentious issue. One aspect that is agreed upon is that, “a growing proportion of children and adolescents' leisure time is spent with screens including smartphones, tablets, gaming consoles, and televisions” (Twenge & Campbell, 2018, p. 271). Przybylski and Weinstein (2019) argue that there is a, “need for robust research before we can conclude whether these digital screen time limits may have positive or negative consequences for young people” (p. 62).

2.1.2 Cyber-bullying

Cheyjunya (2018) gives a comprehensive definition of cyber-bullying as:

> *"An intentional and aggressive act or behavior that is carried out using electronic means via text messages, words, pictures, sound, or video, by an individual or a group against a victim, or a group of victims, on a virtual space or through other types of online media. Types of cyberbullying are classified into seven forms : (1) threats, bullies, sarcasm, or rude and violent words, (2) sex harassment/sex seduction, (3) disguise/claim to be others, (4) threats to reveal secrets or blackmails or raking up, (5) deception, (6) the formation of specific groups for revengeful online activities, and (7) cyberstalking"* (p. 3).

2.1.3 Inappropriate Content

Like screen time what content is inappropriate is a much discussed issue and especially whether it leads to harm. Haddon and Livingstone (2014) note that "the term 'inappropriate' to describe the content that their parents had told them they were not supposed to view online. Sometimes this could mean violent content, mainly for games, and it could also mean bad language, but most commonly it referred to sexual images" (p. 9). On the Internet Matters website itself, (https://www.internetmatters.org/issues/inappropriate-content/learn-about-it/) they say, "whether it's an explicit pop-up ad on a free game, videos showcasing children's cartoon characters in adult situations, or a forum promoting self-harm, an innocent search can expose children to content that can make them feel upset and confused."

2.1.4 Online Reputation

The Internet Matters website (https://www.internetmatters.org/issues/online-reputation/) asserts:

> *"as schools and employers turn to the internet to find out more about potential candidates, it's clear that what we post online can have a real impact on our lives offline. So, helping children to understand the long-lasting effects of what they share and empowering them to take control of how their online reputation is created is key."*

A Pew Research study found that, "few teens embrace a fully public approach to social media. Instead, they take an array of steps to restrict and prune their profiles, and their patterns of reputation management on social media vary greatly according to their gender and network size" (Madden et al., 2013, p. 2).

2.1.5 Online Grooming

The UK's Childline service provides an online resource for staying safe on the Internet and has this to say about grooming, "online grooming is when someone uses the internet to trick, force or pressure a young person into doing something sexual - like sending a naked video or image of themselves" (https://www.childline.org.uk/info-advice/bullying-abuse-safety/online-mobile-safety/online-grooming/).

The International Centre for Missing & Exploited Children (ICMEC) in a 2017 report argue that, "while child grooming takes place both face-to-face as well as online, the Internet poses a particular challenge, as those seeking to victimize children take advantage of the relative anonymity online interaction provides" (IMEC, 2017, p. ii).

2.1.6 Online Pornography

The Internet Matters website (https://www.internetmatters.org/issues/online-pornography/) says the following, "as a result of their curiosity, or by accident, children can find pornography fairly easily on the internet. Dependent on their age, it can be upsetting or confusing as pornography portrays an unrealistic image of sex and relationships."

Smahel and Wright (2014) writing on their findings of a cross-cultural study of nine European countries explain that, "exposure to pornography and other sexual materials occur through various platforms. Despite being bothered by some sexual content, children reported sexualized communication with their peers, and sharing sexual pictures or videos to receive "likes" from their peers" (p. 41). They found that most children stumble across the material though some; especially the older ones did seek it out. They add, "younger children explained that they felt mostly negative feelings toward sexual content, whereas older children's feelings ranged from the negative to the positive" (Smahel & Wright 2014).

2.1.7 Sexting

The UK's Childline online service has a section on what is sexting:

https://www.childline.org.uk/info-advice/bullying-abuse-safety/online-mobile-safety/sexting/

They give the following description, “sexting is when you send a sexual message, photo or video to someone else. It could be a picture of you, but sometimes people send pictures and videos of other people.” That someone else can be someone they know or to a stranger online.

2.1.8 Self-harm

At the Internet Matters webpage, https://www.internetmatters.org/issues/self-harm/ they explain self harm as, “a physical response to an emotional pain of some kind and can be very addictive.” They go on to say that, “as children’s use of the online world grows, increasing mental health issues such as self-harm are taking a different form online. Children are now actively seeking abuse online as a way to self-harm.”

One extreme example of this is termed 'suicide games' such as the blue whale challenge which, "prompts the victim through online dares ranging from watching a scary movie at midnight, self-harming by making cuts using razors to committing suicides," (Mukhra et al. 2017). The prompts are links distributed via social media to target vulnerable individuals to carry out increasingly more dangerous acts.

2.1.9 Radicalisation

Meleagrou-Hitchens and Kaderbhai (2017) conducted a literature review on radicalisation between the years 2006 to 2016. They found that:

> *“the term took on new meaning following the spread of home-grown jihadism in the West after the September 11, 2001 attacks. It is now widely used to refer to the process of individuals joining extreme or violent political movements, with contemporary emphasis on the recruitment and mobilisation of Western Muslims to the cause of global jihad”* (p. 13).

They go on to explore what is and what is not extremist content and the different approaches that stakeholders from governments, security services and civil liberty groups are taking. They conclude by calling for more research on the issue and especially as to, “why individuals who are operating in the same online environments and are exposed to the same materials do not engage in political violence” (p. 74-75).

2.1.10 Privacy and Identity Theft

The Internet Matters webpage, https://www.internetmatters.org/issues/privacy-identity/ states, “just like adults, children may be at risk of having their online identity stolen and misused.” It goes on to say that children may not be aware of what information should or should not be shared and how to manage privacy settings.

Madden et al. (2013) in their Pew research study disagrees to some extent and that young people do:

> *“engage in a range of behaviors to manage the boundaries of their ‘social privacy’ online. Far from being privacy indifferent, these youth are mindful about what they post, even if their primary focus and motivation is often their engagement with an audience of peers and family, rather than how their online behavior might be tracked by advertisers or other third parties. While some do report concerns about third-party access to their social media postings, and some say they encounter advertising online that is inappropriate for their age, privacy from businesses and advertisers is not top of mind for most teens”* (p. 17).

2.2 European Studies

There is a rich body of research around online safety issues conducted by a number of stakeholders including the European Union (EU), national and local governments, universities, non-profits and the private sector. The process is ongoing and cumulative with previous finding used to inform future research.

2.2.1 EU Kids Online

The EU Kids Online project, lead by Professor Sonia Livingstone of the London School of Economics, is the largest ongoing study of its kind. There have been three major phases so far, 2006-09, 2009-11, 2011-14 and the fourth, 2014-18, at the time of writing has not been published yet. From the beginning it was conceived as an inter-disciplinary cross-country project aimed at finding out and documenting the online risks and benefits facing young people in Europe. Over the phases the project grew in scope and extent to cover all EU countries plus Russia, Norway, Switzerland and from the third phase Australia and Brazil. They interviewed over 25,000 children aged 9 to 16 and their parents. The questions were divided into three main

categories, Access & Use, Activities & Skills and Risks & Outcomes. The survey was conducted via one-on-one interviews at the homes of the children. The model they have developed and refined over the years is shown below in Figure 2.1.

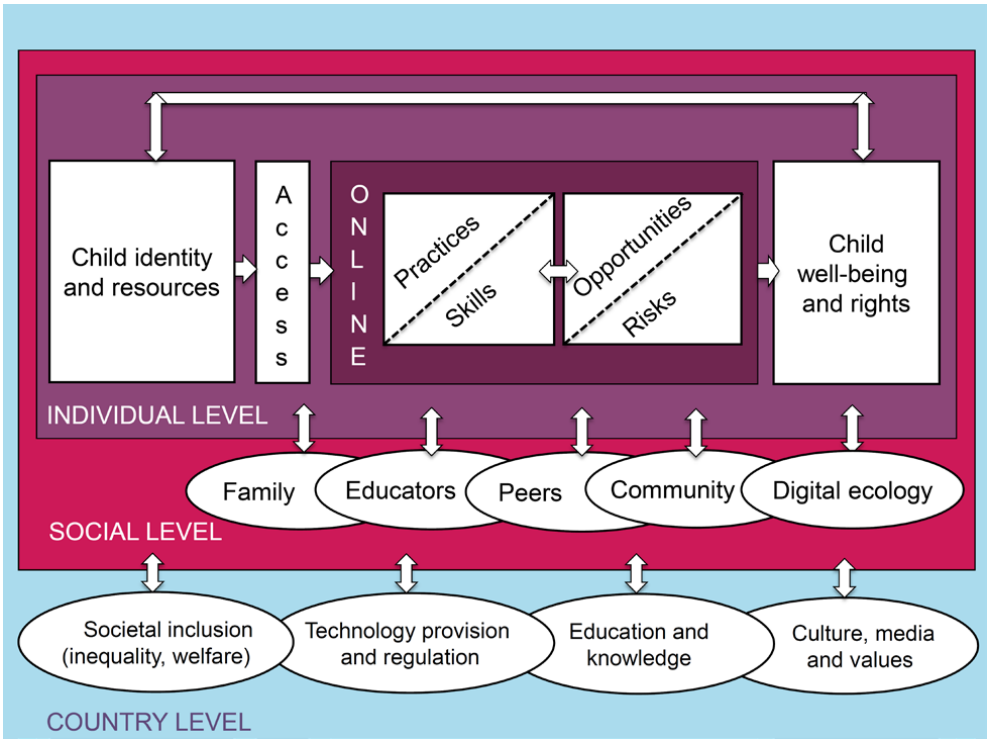


Figure 2.1 EU Kids Online Model

(Livingstone, Mascheroni & Staksrud, 2015, p. 10)

The model outlines three levels. First, there is the individual level. This refers to how young people access the Internet, whether from a computer, laptop, game console, smartphone or other device. Once connected what do they spend their time doing and for how long? Also, what is their level of knowledge and skills with the devices, software and websites they are using? In the earlier model they looked at risks and opportunities of being online. The main risks; cyber-bullying, sexting, porn and meeting online strangers were found to be inter related and it was sometimes difficult to pinpoint which factor was most at play. Whether actual harm is caused is difficult to determine as it depends on the child, their level of maturity, coping strategies and their environment. This lead the researchers to add “wellbeing and rights” (Livingstone et al., 2015, p. 11) into their model. It’s a broader concept which is concerned with outcomes, the balance between benefit and harm and not so much

on how often a particular event takes place. They also assert that in the digital age a child's well-being is linked with their rights. They take as the starting point the UN's Convention on the Rights of the Child and expand it to include the right to Internet access. That is, a child's well-being is influenced by whether or not they have access to the Internet. Furthermore, to assess whether a child's right has been infringed or not their online experiences good and bad must be taken into account. As this is a complex set of issues they call for more research into looking at the relationship between well-being and rights.

The social level refers to the social sphere of the child, in particular the influence of their family. In their previous model they had, parents, school and peers but after conducting research it was found to be limiting. The new model now includes educators inside and outside of school and the digital ecology, in particular, the social networks that are popular. The country level takes in socio-economic factors such as accessibility to high speed Internet, the education system and the political and cultural values. Those that have greater access to fast Internet and less controls / restrictions are more likely to encounter online risks. They are also better positioned to benefit from online opportunities and develop their digital skills. In-country factors like inequality, social (and digital) exclusion and welfare also plays a part but they call for more research in these areas.

2.2.2 EU Kids Online Research Findings

The full findings and associated studies can be found at:

http://www.lse.ac.uk/media@lse/research/EUKidsOnline

The significance of their research is that it has provided a rich archive of evidence based information on the online experience of young people in Europe. One of the most significant finding was that the more access a young person had to the Internet the greater was their digital skills and opportunities. This greater access also comes at a cost, i.e. more exposure to risk and possible harm.

In the second phase analysis, 2009-2011 (Livingstone, Haddon, Görzig, and Ólafsson, 2011a) 87% of the young people that had access to the Internet did so from home. They argue that this means parents / guardians have an important part to play in their child's Internet use. However they recognise that young people have already started using devices other than a computer / laptop to access the Internet

and in particular mobile phones. The implications in terms of risks and benefits were unknown at that time.

Vincent (2015) used the EU Kids online data as well as a related project, Net Children Go Mobile (Mascheroni & Cuman, 2014) to discern the changes. This other research was conducted in two phases between 2013 and 2014. In the first phase they carried out 3,500 in-home questionnaires to 9-16 year olds in seven EU countries; Belgium, Denmark, Ireland, Italy, Portugal, Romania and the UK. The second phase used focus groups of young people in those seven countries plus Germany and Spain. They found that the use of mobile devices, especially smartphones, were on the rise. Children were still using the Internet mainly at home but now they were going online in many other places as well. Another significant shift was that children were receiving their own phone and going online at a much earlier age. As shown below in Figure 2.2, older respondents said they first went online when they were 10 years old. The 9-10 year olds said that for them it was at seven.

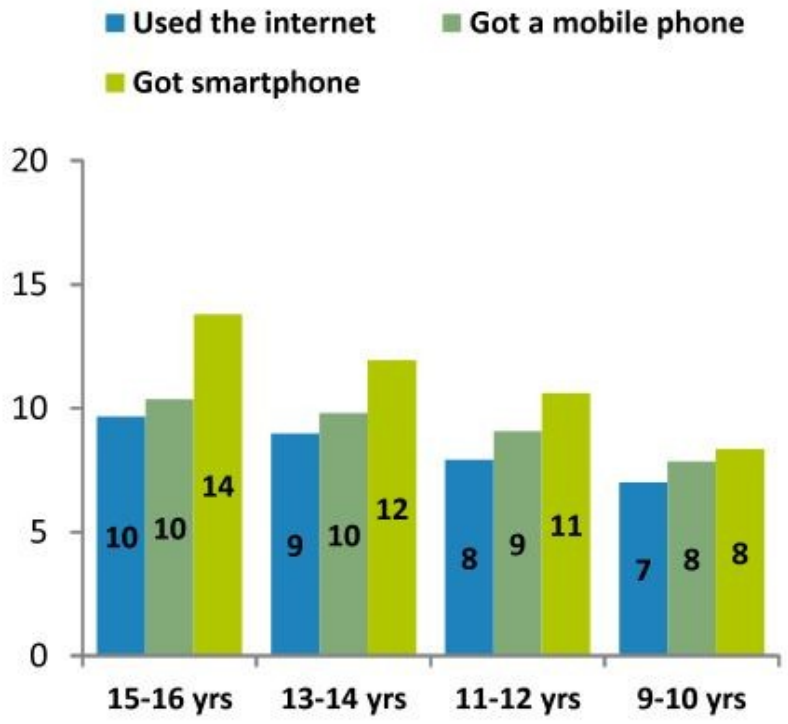


Figure 2.2 Age of First Use

Base: All children 9-16 who use the Internet

Y-axis: Age of child

(Mascheroni & Cuman, 2014)

Figure 2.3 below shows the change in online activities between 2010 and 2014, (Livingstone, Mascheroni, Ólafsson, and Haddon, 2014). The most common activities were engaging with social networks and watching video clips up from 44% to 63% and 32% to 59% respectively and 49% used instant messaging up from 40%. The other notable change was that more children were using the Internet to help do their homework, up from 18% to 33%. In most other categories too there were significant increases in activity which shows that young people are becoming more occupied with the online world and possibly more reliant on it for their social interactions.

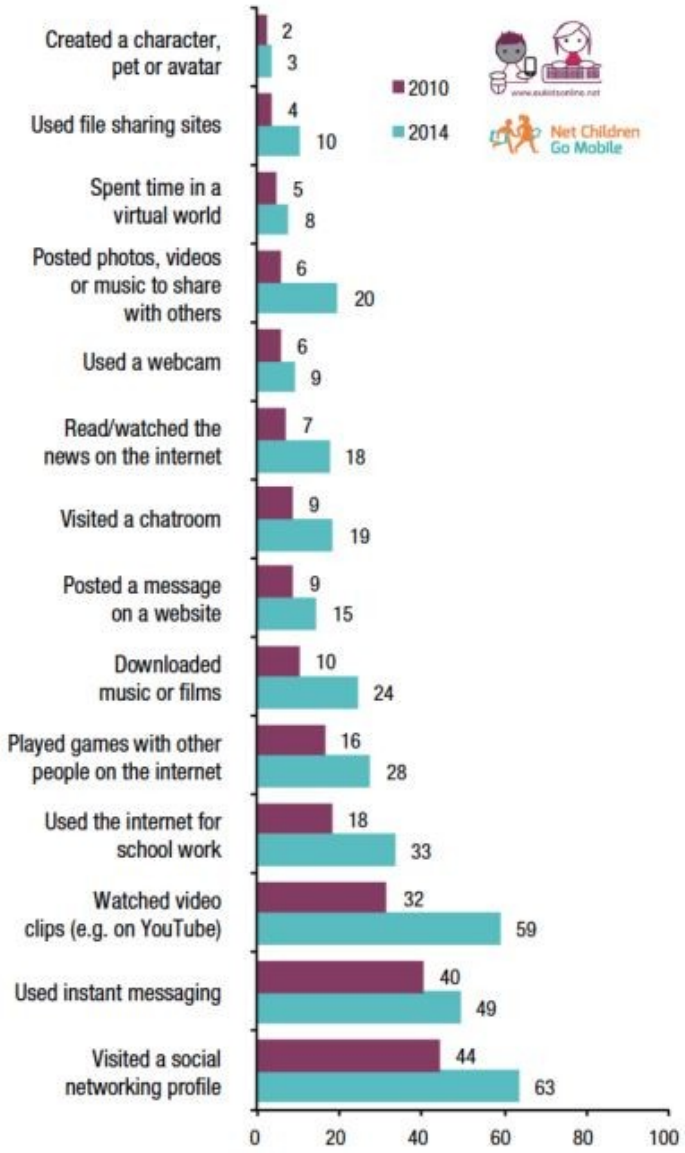


Figure 2.3 Children's Online Activities in the Past Month: Ages 11-16

(Livingstone et al., 2014)

Facebook is by far the most commonly used social network. In 2010 41% had a profile on Facebook and this rose to 61% in 2014 (Livingstone et al., 2014). Interestingly the UK bucked the trend. While most countries saw an increase the UK saw a fall from 58% to 43% in 2014. Mascheroni and Cuman (2014) explains that this is partly due to the fact that far fewer under 13s have a social network profile and many choose to use other platforms like Twitter and Instagram. They also suggest that because the parents of the children have joined Facebook it acts as a deterrent. They quote one father who said, "He [son] cancelled the whole thing. He unfriended me and he cancelled the whole thing and went on Instagram. They're that sensitive about you looking at it and teasing them or anything like that" (Mascheroni & Cuman, 2014, p. 16).

Mascheroni and Cuman (2014) go on to say that children do not just rely on one social network rather that they mix and match to their individual preferences. For example, uploading photos to Instagram and then sharing it on Facebook. Two thirds kept in touch with their friends everyday using social networks and messaging. It is seen as important to be always available. Vincent (2015) adds that children that have smartphones feel more sociable than before but there is a pressure to reply to posts and messages quickly. Any spare moment, on a bus, in a car, at school or elsewhere children are checking their social networking and messaging apps to see if there have been updates. It's partly a compulsion and partly to relieve boredom.

2.2.3 Online Risks

Comparing the data sets from 2010 and 2014 (Livingstone et al., 2014) shows that while some risks are increasing others have stayed roughly the same or even decreased in the period. Figure 2.4 below shows these changes. Of note, is the rise of negative user generated content (UGC), websites that have published hate messages, from 13% to 20 % and those that promote eating disorders, from 9% to 13%. The instances of cyber-bullying, over the same period grew from 7% to 12%. And girls were more likely to be bullied, from 8% to 15% than boys, from 6% to 8%. They point out that this rise could be down to children having greater access especially via mobile devices. This access should also be seen as an opportunity to develop their experience and skills. Therefore, it is important to take on board, as noted above, that the rise in risks does not necessarily equate with a rise in harm.

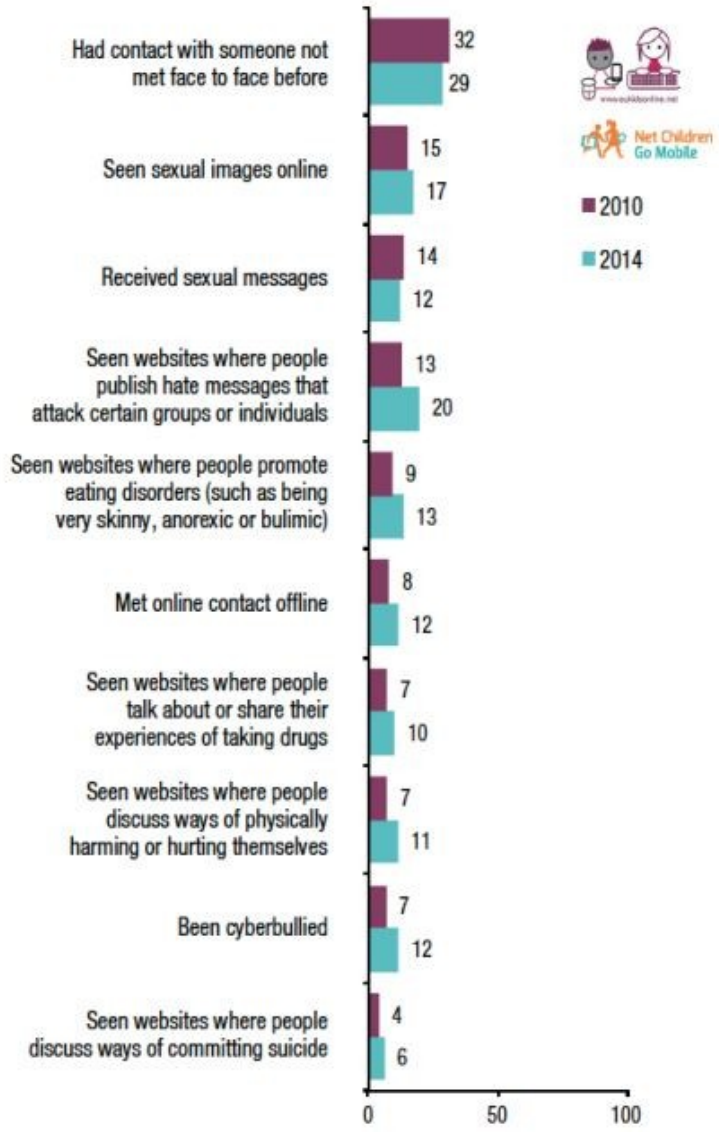


Figure 2.4 Online Risks: Comparative between 2010 & 2014

(Livingstone et al., 2014)

2.2.4 Mediation

In reviewing the data Vincent (2015) notes that two thirds of parents have spoken to their children about how to be safe online while few have relied on technological solutions like parental controls as can be seen in Figure 2.5 below. However, most are not confident in their online skills, thinking or knowing that their children are much savvier when it comes to anything computer related and especially the Internet. This is also borne out in some of the statistics. For instance in 2014, 55% of

children (11-13year olds) knew how to tweak their privacy setting. This figure was 43% in 2010. For 14-16 year olds it was 79% in 2014. This shows that at least some of the safety messaging is getting through and also possibly children themselves as they develop their digital skills are becoming more conscious of privacy and safety issues.

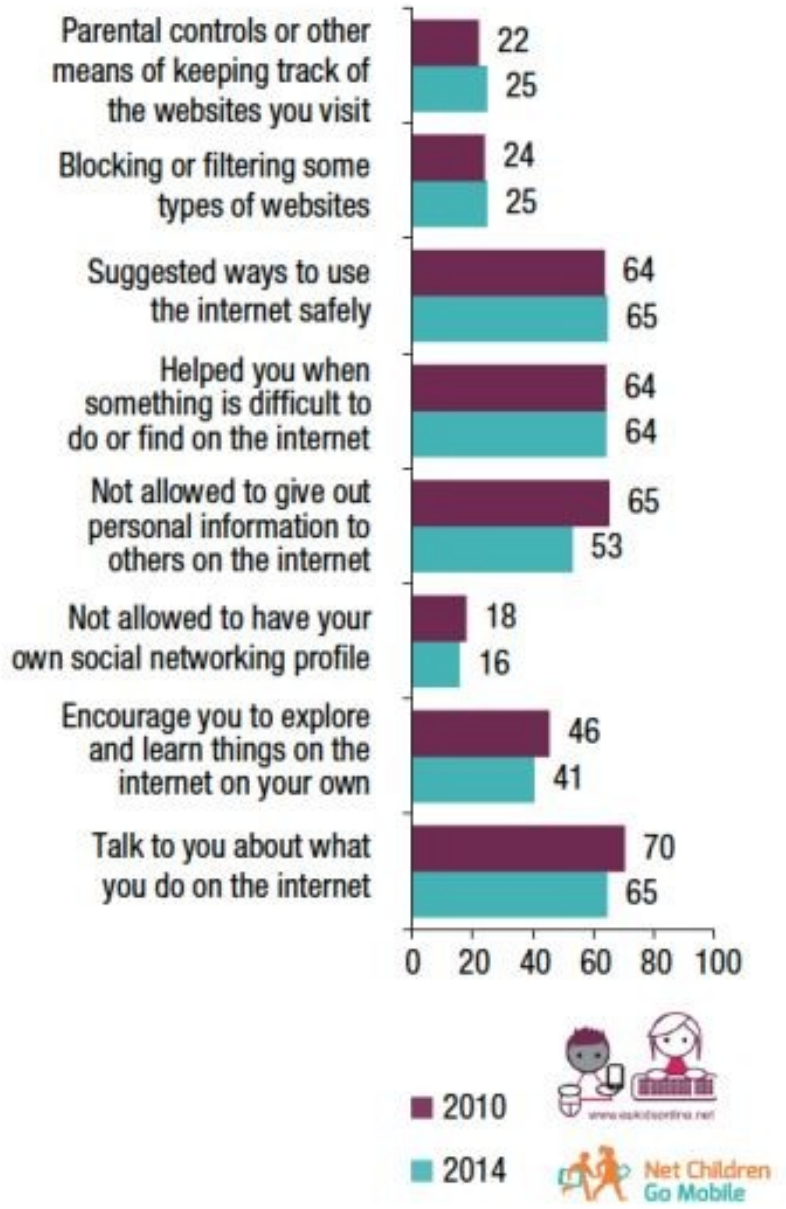


Figure 2.5 Parental Support: Comparative between 2010 & 2014

(Livingstone et al., 2014)

Mascheroni and Cuman (2014) argue that parents and teachers should engender an online resilience in children. To achieve this we need to create a “supportive social

environment" (Mascheroni & Cuman, 2014, p. 38) where there is a balance between mediation, monitoring and using technological means to manage a child's experience. They also say that the increasing use of mobile devices has made the user experience much more personal and private. This means it is much more difficult to monitor their child's use and therefore important for parents to engage with their children in a continuous dialog about their online experiences.

2.3 Global Studies

In recognition of the lack of research in the global south a 3-day seminar organised by the London School of Economics, EU Kids Online and UNICEF Office of Research-Innocenti was convened in February 2015 (Livingstone et al., 2015). They had researchers from around the world, including from; Europe, Brazil, China, India, South Africa and the US. One of the main objectives was to discuss whether the EU Kids Online model (Figure 2.1) could be transposed to other parts of the world which would then allow for cross-country comparative studies to be carried out. Against this it could be that the political, economic and cultural differences are such that a comparative between say, for example, China and Sweden would not be that meaningful. One of the main outcomes was the setting up of the 'Global Kids Online' network and its associated project website, http://globalkidsonline.net which went live in November 2016. The site provides updates on the latest projects as well as providing useful resources for researchers including toolkits for doing both quantitative (e.g. online survey) and qualitative (e.g. focus group) studies. These are based around a set of core questions that all projects should use and some optional ones that can be included and adapted if thought pertinent in the context. By doing this we are able to get the desired cross-country comparable data while allowing some flexibility to address country specific issues.

Studies are underway in a number of countries including; Argentina, Brazil, Bulgaria, Chile, Ghana, Montenegro, the Philippines, Serbia, South Africa and Uruguay. As of 2020 they are all starting to report their findings though it will take some time to be analysed.

Two of the listed countries that are ahead of the game are Brazil and South Africa. Brazil has been conducting their research since 2012 and while South Africa only completed their first major study in 2016, issues concerning online safety are a

widely researched academic topic in the country and the relevant studies will be discussed below.

2.4 The Brazilian Experience

Brazil is one of the largest and most populous countries in the world. At 8,515,770 sq km with a population of just under 206 million (Central Intelligence Agency, 2017) means it is double the size of the EU which is 4,324,782 sq km but less than half of its 507 million population (Demographics of the European Union, 2017). In terms of Internet usage, in 2008 it had 67 million users, 34.4% of the total population. Just eight years later in 2016 the corresponding figures were 139 million and 67.5%, (Miniwatts Marketing Group, 2016), a marked increase.

The lead organisation in producing the Brazilian Kids Online survey is CETIC the, “Regional Centre for Studies on the Development of the Information Society” (Brazilian Internet Steering Committee, 2016). They have approached it as a multi-disciplinary and multi-stakeholder project. As well as partnering with the EU Kids Online project they have sought experts from a wide range of organisations including; UNICEF Office of Research – Innocenti, Kids Online Latin America network, UNESCO, the Brazilian Ministry of Education and the Brazilian National Computer Emergency Response Team (Brazilian Internet Steering Committee, 2016).

Their 2017 survey (Brazilian Internet Steering Committee, 2018) was their 6th report, the first one being in 2012 so before the Global Kids Online concept. The biggest shift in that time was that of those young people (defined as 9 to 17 year olds) using the Internet, 93% accessed it via a smartphone. The figure in 2015 was 85% whereas in 2012 it was only 21%.

One aspect that had not changed much was the level of inequality both socio-economically and regionally. Overall 85% of young people were Internet users. In urban areas it was higher at 93% and lower in rural areas at 63%. There is also a north/south divide. In southern areas the figure is around 93%, in the north, 68% and north-east, 77%. For those in the highest socio-economic group the figure was 98% whereas in the lowest group it was 70%.

The 2017 survey also notes the increasing use of WiFi over mobile data. In 2013, the proportion of young people accessing the Internet via mobile data was 38% and WiFi 30%. In 2017 mobile data usage had an uptick to 49% of young people whereas WiFi had sharply risen to 84%. This greater availability both using mobile data and WiFi has led to young people being connected to the Internet more frequently, "in 2013, approximately two-thirds of Internet users 9 to 17 years old went online every day or almost every day, a proportion which rose to 88% in 2017." (Brazilian Internet Steering Committee, 2018).

The popular activities (see Figure 2.6) were watching video content, 77% and listening to music online, 75%. Playing online games and downloading software applications, music and movies were also popular. By contrast very few, 8% bought things online. However the figures do mask the socio-economic divide. For example, in the top social classes 91% of young people watched videos online whereas for the lowest classes it was only 65%.

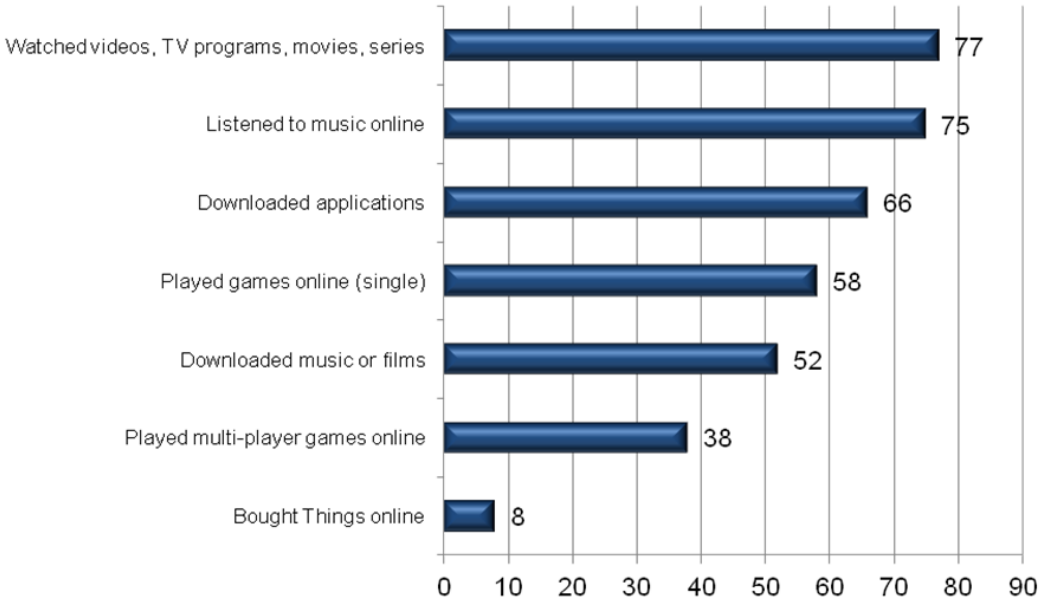


Figure 2.6 Children by Activities Carried Out on the Internet

Base: Percentage of the total number of Internet users 9 to 17 years old (%)

(Brazilian Internet Steering Committee, 2018)

In terms of risky behaviour, age was the main factor. For meeting an online contact (stranger) in the real world, 6% of 9-10 year olds reported doing this in 2015 whereas in 2017 this had dropped to 3%. For 13-14 year olds it increased from 18% to 23%

and for 15-17 year olds from 26% to 36% which means more than one in three of this last group had met a stranger offline. However:

> *"it is important to mention ... that the flip side of the risks inherent in online presence is that the possibility of contact with unknown people on the Internet can also be seen as an important dimension of new forms of socialization, representing opportunities for individuals who engage in this practice*" (Brazilian Internet Steering Committee, 2016, p. 348).

In that report too, older teenagers had the highest incidence (24%) of being upset or bothered by an online interaction. The average for 9-17 year olds was 20% i.e. 1 in 5. There was a significant difference between the experience in urban and rural areas at 20% and 10% respectively. For acting in an offensive way online only 12% admitted to doing this.

2.4.1 Mediation

In 2017, 23% of parents / guardians of children that used the Internet did not go online themselves, down from 35% in 2015 and 50% in 2013. This is an encouraging trend because as they point out not being online oneself is a barrier to good parental mediation. To impart good advice and practice to their charges they should better know the risks and opportunities of being online. Figure 2.7 below shows that parents / guardians are actively engaged especially with younger children and in particular when enforcing restrictive practices. For example, 78% of 9-10 year olds reported that their phone had been temporarily taken away whereas for 15-17 year olds the corresponding figure was 41%. The group that received most guidance overall were the 11-12 year olds both in terms of restrictions / rules and guidance. When asked if parents explain what to do if they have been bothered or upset online 82% reported that they did. For the 9-10 and 13-14 age groups, the figure was 71% and for 15-17 year olds slightly lower at 69%.

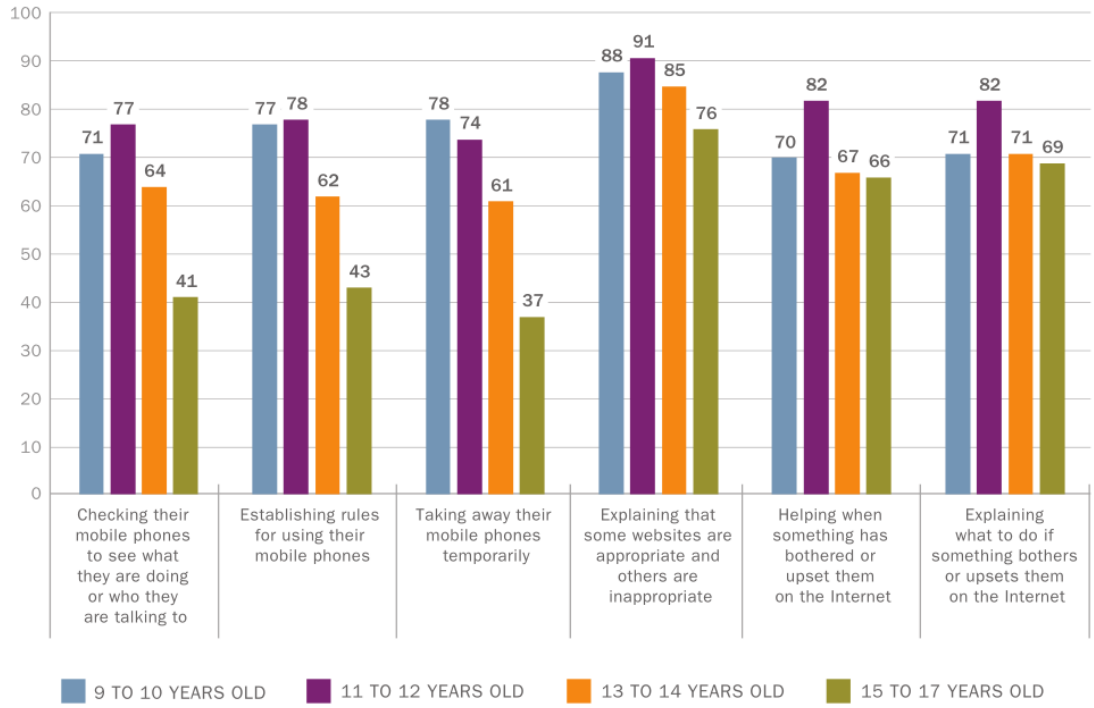


Figure 2.7 Children by Guidance Received from Parents and Legal Guardians on Internet Use (2017)

Base: Total number of Internet users 9 to 17 years old (%)

(Brazilian Internet Steering Committee, 2018)

The 2018 report concludes by remarking:

> *"In view of the complexity of this topic and the diversity of behavior among children, parents and legal guardians, as well as teachers, are in the best position to guide young people on how to use the Internet safely. However, is important to consider that restrictive measures can have an impact on the development of risk management skills, making children more vulnerable to possible harm involving use of the Internet."* (Brazilian Internet Steering Committee, 2018, p. 282)

2.5 The South African Experience

Following the 2015 Global Kids Online seminar mentioned above, the South African Centre for Justice and Crime Prevention (CJCP) set about constructing their pilot study in cooperation with UNICEF. They reported in October 2016, (Burton,

Leoschut, & Phyfer, 2016). It was a fairly large pilot study with 962 children and 552 parents in three of South Africa's nine provinces. The country's population is 54.4 million of which 20.6 million (37.9%) are under 20 years old and overall 26.8 million are Internet users (Burton et al., 2016, pp. 2-3). Even though the study is not nationally representative it aims to test out the qualitative and quantitative research methods of Global Kids Online and obtain data that could then be usefully compared with other countries.

They found that 70.4% of the 9-17 year olds they surveyed used the Internet. As elsewhere the most common means was by smartphones. Most children owned their own phone, 83.8% with the figure for older children being 92.5% and younger children 68.7%. That said, the high cost of mobile data put off many children from accessing the Internet. Nearly half, 47.3% reported this as a reason for not going online and just over half, 51.2% said that an adult stopped them from going online.

Table 2.1 below shows which online activities are the most and least popular. Instant messaging came out on top with 85.8% saying that they used it at least once a week. The main service was WhatsApp with 94.1% of participants having an account on it. For social networks, 64.2% had visited one in the past week. Facebook is the dominant platform with 68.5% saying they had an account on it. There was a large age difference, with 31.5% of 9-11 year old with an account (presumably they lied about their age as Facebook's minimum age is 13) and 83.5% of 15-17 year olds. Other platforms were less popular, 18% had an account on Instagram and 15.5% on Twitter. Using the Internet for learning is popular amongst all children, over three quarters, 76.5% said they search online to learn new things and 70% used the Internet for school work. Listening to online music was also popular with 63.1% saying that they did this. About half, 51.8% watched video clips and about a third, 34.2% posted videos online. This could be a reflection of the high costs of mobile data. The least popular activities were getting involved online in a campaign or protest (4.2%), getting involved in a local organisation or charity (6.7%) and signing petitions (6.1%) and using the Internet to join a civic, religious or political group (7.1%).

Table 2.1 Online Activities

Base: All children 9 – 17 years old who used the Internet (N=643).

How often have you done these things online in the past month?	More than once a week
Learning	
I learned something new by searching online	76.5%
I used the Internet for school work	70.0%
I looked for information about work or study opportunities	45.2%
Community participation	
I looked for resources or events about my local neighbourhood	16.3%
I got involved online in a local organisation or charity	6.7%
I used the Internet to help somebody else	42.0%
I used the Internet to talk to people from places or backgrounds different from mine	43.8%
Civic participation	
I looked for the news online	34.7%
I discussed political or social problems with other people online	17.0%
I got involved online in a campaign or protest	4.2%
I signed a petition online	6.1%
I used the Internet to join a civic, religious or political group	7.3%
Creative participation	
I posted videos or music created by someone else	34.2%
I created my own video or music and uploaded it to share	33.0%
I created a blog or story or website online	18.0%
Social relationships	
I used instant messaging	85.8%
I visited a social network site	64.2%
I helped someone else who needed or wanted to go online	46.1%
I talked to family or friends who live further away	63.5%
I commented on the updates that friends or family have put online	59.6%
I showed my friends or family something that I saw online	56.7%
I visited a chatroom to meet new people	31.5%
Entertainment	
I watched video clips	51.8%
I played online games alone	49.9%
I played games with other people online	23.1%
I listened to music online (by downloading or streaming)	63.1%
Personal	
I posted photos or comments online (e.g. on Facebook or a blog)	58.1%
I looked for health information for myself or someone I know	28.9%
I participated in a site where people share my interests or hobbies	32.6%
Commercial	
I browsed for things to buy	22.9%
I checked out what things cost by looking online	32.3%

(Burton et al., 2016, p. 25)

2.5.1 Online Risks

The report shows that there was an awareness of the risks involved in meeting an online contact offline i.e. a stranger. For many in the survey this awareness stems from the TV reality show, Catfish, (http://www.mtv.com/shows/catfish-the-tv-show). The term itself according to Wiktionary is, “Someone who creates a fake profile on a social media platform in order to seduce people” (Catfish, 2016). In the show the crew follow participants who have created online relationships, sometimes for years, and see what happens when they meet the other person for the first time in real life.

Sometimes the two people would connect in a positive way but invariably there were many meetings that did not have such a good outcome.

Around one in five of the participants, 21.9% had been subjected to bullying or cyber-bullying. This was found out by asking if they had been treated in a hurtful or nasty way either online or offline. Of this group, 39.3% were subjected to it in person, 28.3% on a social network and 20.2% by instant messaging.

2.5.2 Mediation

Although children felt safe and comfortable to talk to members of their families when it came to the Internet there was very little mediation from parents. Just under half, 48.1% never or rarely discussed anything about their online experience with their parents / guardians. Furthermore, 42% had not received any advice on how to be safe online and 49.1% said that their parents had not discussed about how to deal with something that had upset them online. At school, the picture was a little mixed. Teachers did lay out rules for the use of mobile phones in class, even confiscating them when necessary. Nearly a quarter, 24.8% said that teachers inspected their phones to see what they were doing and who they were talking too. Something which the report suggests could be, “an overstepping of boundaries” (Burton et al., 2016). However, just over half, 52.5% said that they had received advice on how to stay safe online and 56.6% on how to behave to others online.

The report concludes that the pilot study had given an insight into the positive and negative aspects of online life for children in South Africa. It calls for more research to be undertaken and also for a more joined up approach by policy makers and others to the online well-being of children.

2.5.3 South African Cyber Security Academic Alliance (SACSAA)

While the above study was led by the South African Centre for Justice and Crime Prevention there are many academic research studies and initiatives on online safety for children in South Africa. In particular the, South African Cyber Security Academic Alliance (SACSAA) formed by; Nelson Mandela Metropolitan University, the University of Johannesburg and the University of South Africa. Its website is located at http://www.cyberaware.org.za/. As Figure 2.8 below shows it offers useful information and tips on how to be safe online.

Figure 2.8 SACSAA Security Advice

(Van Niekerk, n.d.)

It has designed a cyber safety curriculum and materials for primary schools. To promote this initiative members of SACSAA visit schools to give talks to students, teachers and parents. Featured on the site is Nelson Mandela Metropolitan University's poster competition. Reid and van Niekerk (2014), in their paper 'Towards an Education Campaign for Fostering a Societal, Cyber Security Culture,' lays out their experience and challenges they faced in pursuit of raising safety awareness amongst young children. When they started out in 2011 they sent out leaflets and posters to schools in the Nelson Mandela Metropolis of Port Elizabeth. Students were instructed to self learn on a range of cyber safety topics and then be inspired to create a poster for the competition. In the event they only received three posters. For their second campaign in 2012 they decided that there would be more interest and children more engaged if they actually visited schools and gave talks to promote the poster competition. In addition, they provided materials, both physically, like games

and also online resources. This proved to be a much more successful approach and they received 217 entries. All of them were from schools that they had personally visited even though leaflets and information were sent to schools all across South Africa. In the third campaign, 2013, they built on the success of the previous year. The support materials provided and talks they gave were more customised to suit the requests of the teachers. Cyber-bullying in particular was highlighted as a major concern. This proved to be even more successful and they received 468 entries more than double the previous year. One of the main factors for this, they put down to involving teachers more. The latter were important for reinforcing the cyber safety messages and encouraging the children to participate in the competition. In their conclusion they note this importance by saying that although cyber security experts are needed they are not the best ones to communicate the messages and that, “an interdisciplinary approach to education is needed for [the] cyber security education needs of a society” (Reid & van Niekerk, 2014, p. 183).

2.5.4 Cyber Security Education

Von Solms S. and von Solms R. (2014) point out that schools in South Africa and indeed over the whole continent do not have good cyber security education because of, “teachers’ limited knowledge regarding cyber safety, together with limited budgets and resources make the education of children on cyber safety issues extremely challenging” (von Solms & von Solms, 2014, p. 185). Moreover, governments are not making cyber safety education a priority despite the fact that access and use of the Internet is expanding at a rapid pace. To overcome this they argue we should, “establish a cyber secure culture (Kortjan & von Solms, 2013)” (von Solms & von Solms, 2014, p. 187). Children should be taught to make good decisions online just like they are offline. A good example for both scenarios would be not to talk to strangers. Von Solms S. and von Solms R. (2014) outlines some recommendations to achieving this. Firstly, to use resources like, OER (Open Educational Resources), an online platform that provides learning and educational material that have been sourced licence / royalty free. The main website can be found at https://www.oercommons.org. As it is online it can be adapted and updated regularly. With the platform chosen they then tried to identify appropriate material, in particular cartoon videos on cyber safety. The reason they gave was that for the target age group, i.e. primary school, 7-13 years old, cartoon based videos would be best.

Although this seems a reasonable assumption they give no evidence based reasons as to this choice. With the help of an experienced teacher they sifted through a number of videos and decided upon 47 that would be appropriate in creating a syllabus. They decided on three age caegories; one for 7-9 year olds, another for 10-12 year olds and lastly one for 13 and over. They suggest that the lessons should be run periodically over 6 or 12 months so that the lessons and messages will get reinforced.

2.5.5 ICT Security Awareness Framework for Education (ISAFE)

Walaza, Loock and Kritzinger (2015) investigated how to incorporate security awareness into the education system of South Africa. Their proposed framework, ICT Security Awareness Framework for Education or ISAFE intends to bridge a gap they identified between models and frameworks devised for ICT security and general ICT in education ones. The outcome is shown below in Figure 2.9.

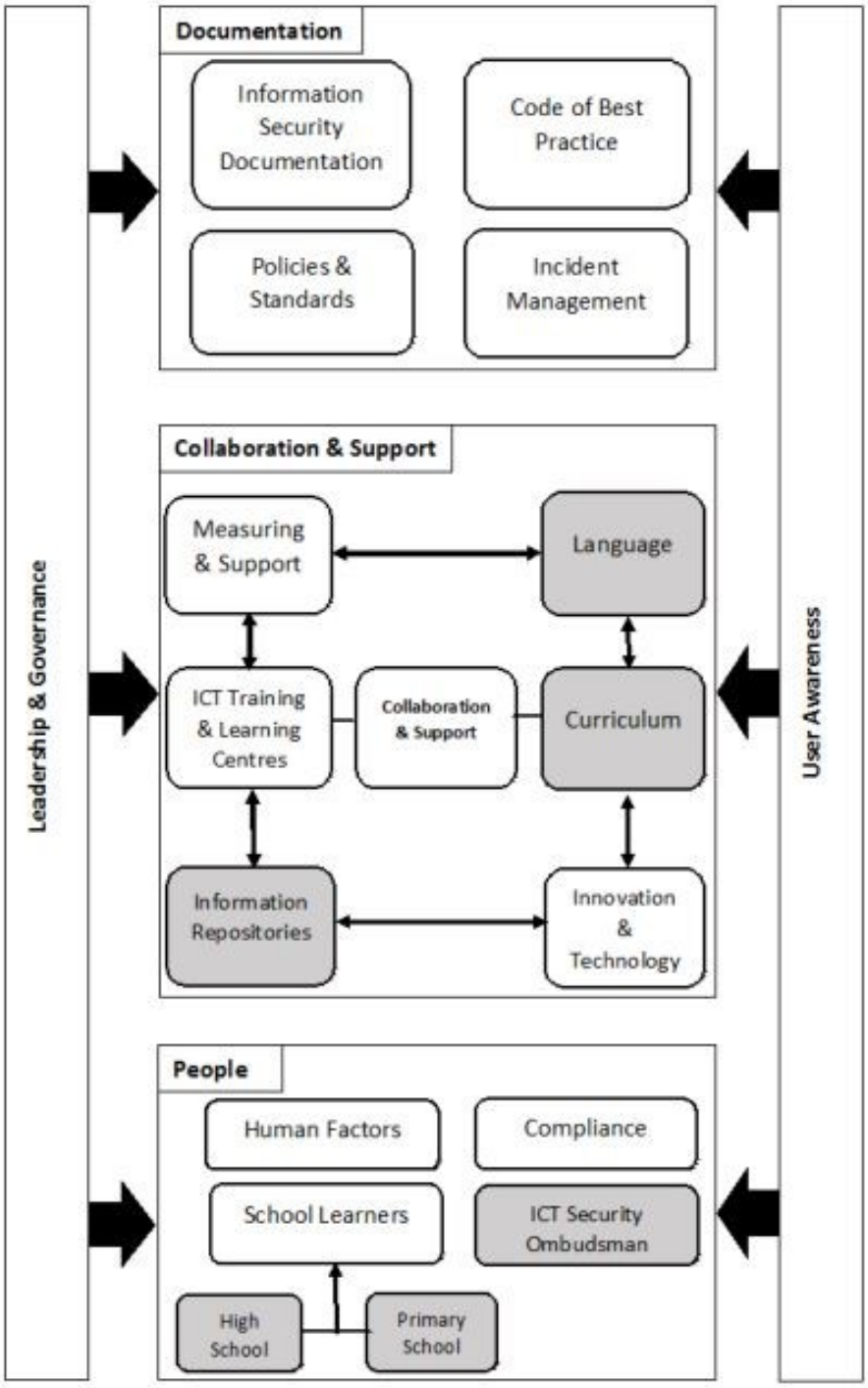


Figure 2.9 ISAFE Model

(Walaza et al., 2015)

There are five inter connected components; leadership and governance, user awareness, documentation, collaboration and support, and people. In 'collaboration and support' there are two important sub components, language and curriculum. South Africa has 11 official languages and so they recommend that all awareness

raising initiatives should be in all these languages. At the time of writing, security awareness was not part of the South African school curriculum. They recommend that this is made so; something which they say has long been called for.

2.5.6 Cyber Security Awareness

In a report on the cyber security awareness of teens (Kritzinger, n.d.) found that of the 503 16-19 year olds they surveyed, 99% had a mobile phone, 98% of which accessed the Internet using it. She argues that only by knowing how young people are engaging online can we deliver appropriate safety awareness education, “In order to improve cyber security awareness and education among school learners, it is vital to obtain and analyse statistical information on the use and the results of ICT tools by this group” (Kritzinger, n.d., Background, para. 4).

Being online was a major reason for using their phones, 41% said they spent more than three hours online daily. In terms of mediation a high proportion, 79% said that a parent and / or a teacher had given them advice about the risks of being online. Considering their ages quite a high number, 39% said that their use of the Internet was monitored by a parent and 22% were using parental control software. Over a third, 35% did try to hide their online activities mainly for the reason of viewing pornographic content. Nearly two thirds, 63% admitted to accessing content that they thought was not appropriate though only 34% of this group said that they did so on purpose. The rest had come across the content by chance which, in their view, requires stricter controls (parental control software) and more education on these issues.

Students were asked if they thought there were any dangers or threats when they used the Internet. The majority, 93% said yes there were. Figure 2.10 below shows the possible threats that were of most concern to themselves. Three quarters were wary of online scams and almost as many were worried about their personal information getting into the wrong hands.

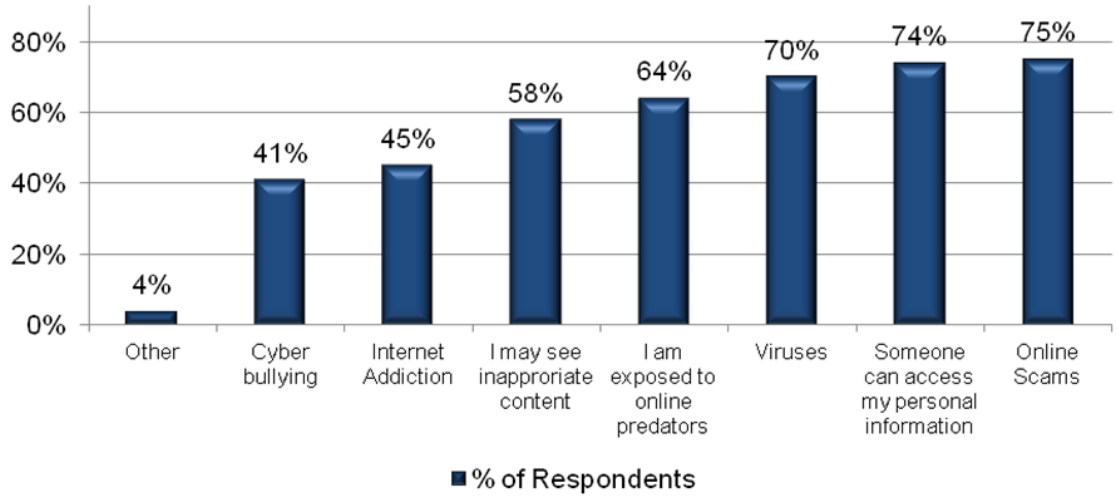


Figure 2.10 Perceived Dangers and Threats When Using the Internet

Base: 503 respondents 16 to 19 years old

(Kritzinger, n.d.)

Other top concerns included; getting infected with malware, interacting with online predators, becoming addicted to the Internet and cyber-bullying. Of the concerns, cyber-bullying was listed at the bottom with 41% although only 4% admitted to being cyber-bullied. However, 65% said that they were aware of it taking place at school and 18% knew of friends or family that had been cyber-bullied. Kritzinger puts part of the discrepancies in the statistics down to the students maybe not knowing what constitutes bullying; another reason she argues for having more education and awareness around this and other online safety issues. This is backed up by the fact that 88% of students think that cyber-bullying is an important issue with 90% in favour of education around its prevention.

2.6 Asia-Pacific Studies

UNESCO Asia and Pacific Regional Bureau for Education in Bangkok produced a report in 2015 titled, ‘Fostering digital citizenship through safe and responsible use of ICT’ (Park & Tan, 2015) and then a follow up on ‘Building digital citizenship in Asia-Pacific through safe, effective and responsible use of ICT’ (Park & Tan, 2016). These reports were in recognition that, especially in LDC’s in the Asia-Pacific region, there have been few research studies on the effects of ICT and children’s use of it.

The first report, i.e. on fostering digital citizenship, encompassed 46 countries that make up the Asia-Pacific (AP) region and accounts for over four billion people. It includes developed countries like, Australia and New Zealand and LDC's like, Thailand and Myanmar. Inevitably, they found a wide discrepancy between the technological infrastructure, services and opportunities between the richer nations and the rest. They do, though, recognise that mobile phone penetration is much higher than computer and Internet penetration in LDCs. Unlike the European studies this was a desk review sifting through existing reports and resources by governments, private companies and NGOs on initiatives and programmes relating to ICT and how it is consumed. The model they used is shown below in Figure 2.11 and looks at the risks and opportunities that ICT brings especially that of being online.

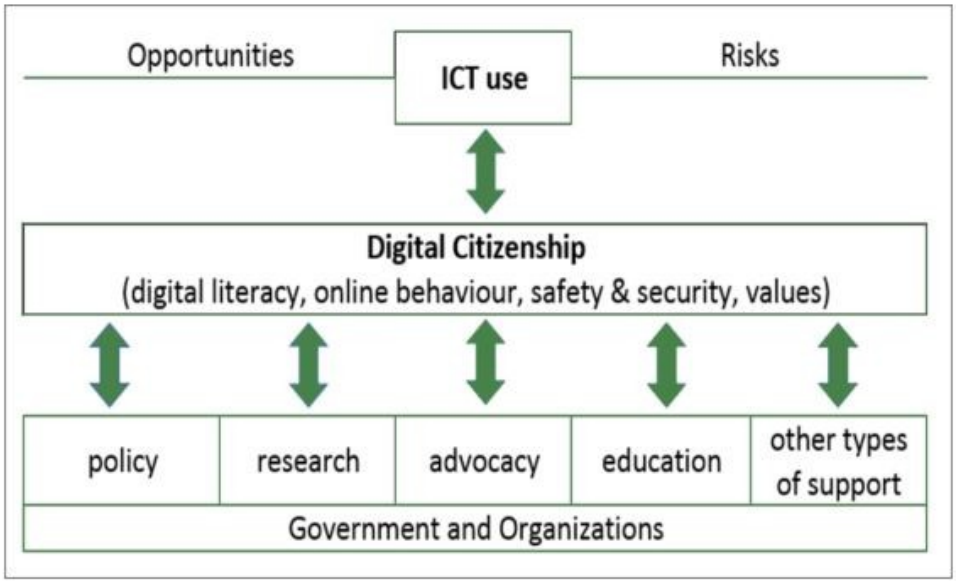


Figure 2.11 Guiding Framework for UNESCO's Mapping Exercise

(Park & Tan, 2015)

In the report, UNESCO does not actually define what digital citizenship is but they do give some of the elements that form part of it. For example, they found that what constitutes as 'safe and responsible' use vary from country to country. In China the big issue is online gaming addiction and in South Korea they have treatment centres for Internet addiction. The government there stresses, "the importance of healthy practices, good manners, and online accountability" (Park & Tan, 2015, p. 18). Being

a good citizen, that is, behaving in a way the government deems good is a running theme in many of the countries they looked at.

From their investigation, “experiences and practices of [Asia-Pacific] children remain under-researched, translating to the lack of policy responses to the issues ... the lack of understanding is exacerbated in relation to the situation in developing and emerging countries in which ICT devices abruptly introduce totally different opportunities and risks to children” (Park & Tan, 2015, p. 3).

Below are some examples of the few existing research they found:

- Microsoft’s Global Youth Online Behaviour Survey, 2012 looked at online bullying. The top 3 were all AP countries, China 70%, Singapore 58%, and India 53%. Those surveyed were between 8-17 years old.
- In connection with online gaming addiction 2% of South Korean 10-19 year olds according to the government were at risk or needed treatment in 2013.
- A UNICEF report in 2012 found that 70% of children in Indonesia had been contacted by people they did not know and 35% had been asked to meet offline.

Because of these issues or as the report puts it, challenges, it says many groups (though they do not name them) have called for strict controls and Internet censorship. The report suggests that young people should be supported and given the skills so they can make the most of the opportunities that ICT and the Internet can bring. In UNESCO’s own ICT in education forum many participants said they were worried about the negative impact of ICT and wanted guidance on how to educate effectively in this area. Hence the reason they came up with the project. As well as reviewing existing material they want to inform and recommend educational policies and then to design content that different regions can use in their own context. The need for such guidance and educational material is because of the rising number of young people using ICT. They quote figures from a sister organisation, International Telecommunications Union (ITU) from 2013 that 15 to 24 year olds account for 18% (732 million approx) but are 30% of the Internet users (Park & Tan, 2015, p. 11). And in the next 5 years they expect it to more than double which further intensifies the need for more research.

Park and Tan (2015) chose to look at 12 countries more in-depth to get a representative sample of how national governments are responding to the increasing use of ICT and the Internet. Figure 2.12 below shows what aspects each of them regard as most important. It is clear that mitigation from risks and safety is a key concern. Only three of the countries, Australia, Brunei and New Zealand had a policy or programme that emphasized the benefits and opportunities of being online. Another three countries, Malaysia, Singapore and Thailand were concerned with their citizens behaving well online, like being ethical and respectful.

	Benefits of ICT use/ online participation	Responsible, ethical behaviour	Safety/ protection against risks	Values reinforcement (respect, empathy, etc.)
Australia	*	*	*	
Brunei Darussalam	*			*
PR China			*	
India			*	
Indonesia			*	*
Rep of Korea		*	*	
Malaysia		*	*	*
Myanmar		*		
New Zealand	*		*	
Philippines		*	*	
Singapore		*	*	*
Thailand		*	*	*

Figure 2.12 Policy Responses from National Governments

(Park & Tan, 2015)

Developed countries like Australia, Singapore and New Zealand have well resourced and coordinated national programmes. In Australia, they have the Cybersmart programme which was started by the Australian Communications and Media Authority and now housed under the, Office of the Children's eSafety Commissioner. Its goals are to provide resources to young people, parents and educators to develop their digital skills and avoid the digital pitfalls. The guiding principles are, "Engage positively. Know your online world. Choose Consciously" (Park & Tan, 2015, p. 14). At the time of writing (2020) the eSafety Commissioner's website, https://www.esafety.gov.au/ has information on how to report cyber-bullying, eSafety for women and lesson plans, games, videos and activities for students, parents and teachers.

In New Zealand, Netsafe, https://www.netsafe.org.nz/ provides resources similar to what is available in Australia plus they provide an Internet safety kit for schools which includes template policies for all stakeholders including students. Singapore calls its one, Cyber Wellness Programme and its principles are, “Respect for Self and Others, Safe and Responsible Use, Positive Peer Influence” (Educational Technology Division, Ministry of Education, Singapore, n.d., What is Cyber Wellness?).

In the report, LDCs like the Philippines do not have a dedicated programme but it does have robust policies and laws:

> *“Anti-Bullying Act of 2013, the Special Protection of Children Against Abuse, Exploitation and Discrimination Act, the overarching Child Protection Policy 42 in 2012 and the Implementing Rules and Regulations for the Anti-Bullying Act were formulated by the Department of Education (DepEd) to ensure that schoolchildren are free from violence, exploitation, bullying, abuse, and discrimination, in both offline and online environments”* (Park & Tan, 2015, p. 22).

Thailand too has laws like the, Child Protection Act and Computer Crimes Act. It also uses Internet filters to prevent people accessing unlawful, and what is seen as socially undesirable content such as pornography and gambling. Like the Philippines it does not have an Internet safety programme that provides resources for teachers, parents and students. In the official cybersecurity policy 2017-2021 which can be found on the Office of the National Security Council’s website, http://www.nsc.go.th/ they do have objectives that relate to raising awareness especially strategy 6, ‘promote the culture of using cyberspace in an appropriate way’. The document on the site is available only in Thai so strategy 6 was translated by the researcher’s main Thai collaborator, Dr Tharabun Khuchinda (henceforth referred to as Tharabun):

- Goals
    - To have a mechanism that instils good awareness in the use of cyberspace in the right way and respect the basic rights and freedoms of others in the cyber world.

    - To encourage the network of Internet users to help supervise the use of cyberspace in an appropriate way.
    - To promote learning especially among children and youth to be aware of the threats that affect cyberspace security.
- Indicators
    - Organizing the "Cyberspace Watch" project at many levels, such as projects of local communities, educational institutions.
    - Training for Internet users both to coordinate care and instil awareness in order to use cyberspace appropriately
- Guidelines
    - To promote the good values of the nation on the cyber world by promoting the use of information technology and public communications to maintaining the nation, religion and the king.
    - To promote a culture of using cyberspace responsibly and consciously for others and the society as a whole, to respect basic rights and freedom in the cyber world and not violate the law.

(National Cybersecurity Strategy 2017-2021: http://www.nsc.go.th/?page_id=480)

Strategy 6 aspire to, ‘instil good awareness’, ‘promote learning especially among children’ and ‘promote a culture of using cyberspace responsibly’. However, at the time of writing, there are no national programmes that address these goals. It also, as discussed above, has an emphasis on Internet users to behave appropriately as good citizens and to ‘promote the good values of the nation’ so that it maintains, ‘the nation, religion and the king’.

Lastly, Park and Tan (2015) give an overview of the EU’s Kids Online project and UNICEF’s Voices of Youth Citizen Programme. The latter, works with governments and other organisations to conduct research into children’s digital lives so as to inform policy and education awareness programmes. Two of its findings are that:

- Even within a country a digital divide can exist
- Risk varies from country to country depending on factors like ICT development and culture

2.6.1 Parental Mediation

From one of its own UNESCO meeting in March 2014 in Singapore, May O Lwin (2014) outlines possible steps to enable effective mediation:

- Educating parents about how they can guide children
- Educating parents about what exactly is sensitive data.
- Schools can also play a role in child education (teacher mediation).
- More targeting of different types of parents in cyber safety campaigns
- Guiding parents to use effective strategies for children at various child ages – potential online cyber education sessions to teach active mediation methods

Younger children are more likely to be influenced by their parents. Those that do not have parental mediation of any kind are more likely to divulge more information and be less careful when online than those that have had restrictive or active mediation. Restrictive mediation is where children have been set limits on what they can and cannot do and active mediation is when parents choose to involve the child and agree what is appropriate or not. Mediation though is not enough; Lwin (2014) argues that there needs to be more technical barriers from sites, 'website safeguards' to protect children and their data. Park and Tan (2015) add that in South East Asian countries we should take into consideration the role of the extended family. For example, grandparents and others that look after children for the parents can take an active mediation role.

2.6.2 Research Gap

From their findings, Park and Tan (2015) realised that most of the research is based in developed countries and that it should not be necessarily assumed to hold true for other countries; "rather than assuming that the findings from the developed countries would apply to the region, it would be beneficial to conduct comparative research that would provide evidences that reflect the realities in the member states" (Park & Tan, 2015, p. 45).

In its follow up report, Park and Tan (2016) reviewed the national ICT policies of several members of the Asia-Pacific region including advanced economies like; Australia, Japan, New Zealand, Korea (Rep.) and Singapore and LDCs like Laos,

Nepal, Bangladesh and Afghanistan. The report was based on a survey which was sent to all 46 member states with 22 replying. Of those, 57% reported to not having a national research programme to help guide policies, (Park &Tan, 2016, p. 23) and over half said that there was nothing in place to assess or monitor the policies they do have. In contrast, Australia and Singapore are given a special mention for having well designed and coordinated national programmes (discussed above). It also highlights Malaysia's CyberSAFE project. This is a public / private multi stakeholder initiative which includes Malaysia's Ministry of Education and Digi a telecoms service provider. Workshops on being cyber safe are aimed at both students and teachers. So far some 38,000 children and over 4,000 teachers have been involved with the project. For their school CyberSAFE programme they have produced literature (e.g. a guide to mobile Internet Safety) as well as producing short YouTube videos on issues such as cyberbullying, (Park &Tan, 2016, p. 27).

A key finding of the report was that although the majority of the member states had policies that dealt with basic ICT skills, very few had ones that addressed issues like the increasing proliferation of mobile phone use and social networks. The report suggests more should be done especially in the area of student and teacher training beyond ICT basics, (Park &Tan, 2016, p. 49, 60). This however should be based on evidence based research though as Park and Tan (2016) points out "member States lack adequate data on children's behaviour, perceptions and usage of ICT both nationally and regionally" (Park &Tan, 2016, p. 62).

2.7 Conclusion

The narrative of the research surrounding young people's engagement with the online world is continuing to unfold. Much of the work is concentrated in developed nations especially the influential EU Kids Online project. This was not only because it covered all the major European countries and interviewed over 25,000 people (Livingstone et al., 2015); it also developed the methodical framework that is now the foundation of subsequent research. In particular, the Global Kids Online project, an offshoot of the EU Kids Online project which as the name suggest is a worldwide endeavour. It provides information and tools for researchers to undertake their own surveys that are methodically sound and very importantly allows for cross-country comparative studies. It is still in the early stages, though already South Africa (an

LDC) has produced a significant pilot study, (Burton et al, 2016). Another country which can be categorised as an LDC is Brazil. They too are part of the Global Kids Online project though they are much further advanced as they began their research in 2012 (Barbosa et.al., 2013) and have undertaken it yearly since.

As important as these two research projects are; worldwide there is still a lack of quality research in LDCs. This is well recognised, hence the 2015 seminar focussing on this topic hosted by the London School of Economics as outlined above in section 2.2. Park and Tan (2016) suggest that, "the lack of research and locally-relevant data indicates that policies are developed based on assumptions or on research that may not be locally applicable" (p. 62).

In countries like The Philippines and Thailand they have cybercrime laws as well as laws aimed at the protection of children. However, with respect to online safety, there is not only the lack of research that Park and Tan highlight; there is another missing element, education. These LDCs do not have education programmes that centre on online safety. Instead you find rules and guidance on being good online citizens (section 2.5 above) and concerns over gaming and Internet addiction but very little regarding issues such a cyber-bullying.

Given this situation, it is imperative for all stakeholders, governments, NGOs, educators, researchers and others to work together to provide the necessary data to inform policies and education material that will promote children's rights and well-being online. As Livingstone and Bulger (2014) argue, "the promise is that this will better ground policy developments that advance both child protection, and also positive provision, and opportunities for children's participation in the digital age" (p. 328).

This research project aims to take on this challenge. To gather the data and then use it to set up an education framework that LDCs can adopt for the effective teaching of online safety awareness that is relevant to their particular circumstances.

The data gathered can also be used to compare and contrast with existing knowledge from developed countries (as in section 4.1.5) and other LDCs to find the common threads as well as the differences in attitudes and behaviour of young people.

The next chapter discusses the methodological approaches in terms of data collection, teaching models and ethical considerations that are required in order to provide the evidence that underpins this research's Young People Online model and education framework.

3. Methodology

3.1 Introduction

To provide educators and policy makers in LDCs an evidence-based education framework for the effective teaching of online safety awareness this research will follow three lines of investigation.

Investigation 1: Online safety issues within an LDC

As noted above in the introduction (section 1.2) Thailand was chosen as the case study LDC because of the researcher's association with the country and the fact that there are no existing studies on the topic of online safety. Therefore, it is not possible to reference existing in-country research to use as a starting point. This would be the case in many other LDCs too. Original research will need to be undertaken to determine the online safety issues that young people in Thailand face.

Investigation 2: Effective teaching methods

The second line of investigation is to look at various teaching methods and types of activities that will resonate with young people and help them cope with negative online experiences. This will involve testing and evaluating the methods and activities in Thai classrooms.

Investigation 3: The impact of culture on education

This line of investigation originates from the researcher's extensive experience as a trainer at an international corporation and their volunteer teaching in Russia and Thailand. They found that although each participant is an individual and responds to stimuli in their own way there were cultural factors at play that influenced how they interacted with the trainer / teacher, the material and other participants. This part of the research will look at the theoretical models on culture as well as studies that focus on its impact in the education sphere.

3.2 Methodological Considerations

The Global Kids Online project relies on (and continues to rely on) a quantitative survey carried out at the homes of the subjects. In terms of conducting the research in Thailand it was decided to use a mixed methods approach. As Creswell (2012) argues, “the core argument for a mixed methods design is that the combination of both forms of data provides a better understanding of a research problem than either quantitative or qualitative data by itself” (p. 22). Here we briefly describe these approaches and the theories that underpin them which led to the decision to use a mixed methods approach in this research.

Corbin and Strauss (2008) state that the “purpose of doing research ... is to generate a professional body of empirical knowledge” (p. viii). They start by defining what is meant by some of the core concepts:

- Methodology: A way of thinking about and studying social phenomena
- Methods: Techniques and procedures for gathering and analyzing data
- Philosophical Orientation: A worldview that underlies and informs methodology and methods

(Corbin & Strauss, 2008, p. 1)

The worldview they refer to in the philosophical orientation definition is concerned with the concepts of **Ontology** and **Epistemology** the two main branches of philosophy. Figure 3.1 below shows a partial diagrammatic guide by Moon and Blackman (2014). The thrust of their paper is given in the title, ‘A guide to understanding social science research for natural scientists.’

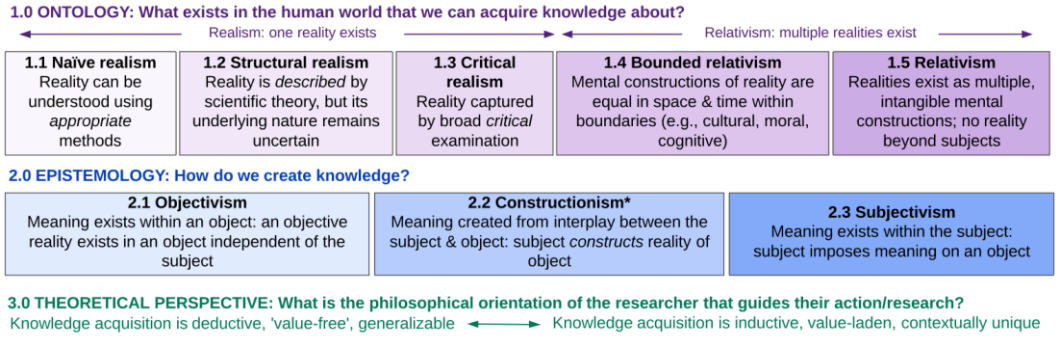


Figure 3.1 Social Science Research Guide

(Moon & Blackman, 2014, p. 1169)

3.2.1 Ontology

Ontology is the study of being, of existence and the nature of reality (Crotty, 1998). It is concerned with 'what is' questions. What are the properties of a 'thing', for example, a chair, that makes it different to something else, say a table. The distinctions can be important for when we come across a new object by working out its properties we can assign a kind of truth value. We could come to the conclusion that it is like a chair or a table or something new. If ontologically you are a relativist (see Figure 3.1 above) one or more of the conclusions could be true. The new object might be viewed by one group as a chair to sit on however another group might think it is best suited as a table to put things on. At the other end of the spectrum there are those that advocate that there is one objective reality and our purpose is to discover what that is. The latter, is a feature more of the natural sciences like physics and chemistry with the caveat that most scientist hold that knowledge is tentative. Andersen and Hepburn (2016) on explaining the scientific method outlines one of its main features as advocated by the influential philosopher Karl Popper:

> *"Regardless of the amount of confirming evidence, we can never be certain that a hypothesis is true without committing the fallacy of affirming the consequent. Instead, Popper introduced the notion of corroboration as a measure for how well a theory or hypothesis has survived previous testing but without implying that this is also a measure for the probability that it is true"* (Popper and falsificationism, para. 2).

For Moon and Blackman (2014) those who ascribe to relativism:

> *"argue that reality exists in the mind, with each individual creating his or her own version ... similarly, one reality can exist according to a particular moral position (e.g., anthropocentrism: human-centered values), but this reality can be different when considered from an alternative moral position (e.g., ecocentrism: nature-centered values)"* (p. 1170).

This subjectivism features in the social sciences including, economics, sociology and ethnography where humans are intrinsically involved. Figure 3.1 above refers to, **'Bounded Relativism'** where groups share a bounded reality. This is especially interesting for this research as culture and cultural differences in the education sphere is one of the lines of investigation.

3.2.2 Epistemology

Epistemology is the study of knowledge, "such as, with what constitutes a knowledge claim; how knowledge can be produced or acquired; and how the extent of its applicability can be determined" (Moon & Blackman, 2014, p. 1171). Essentially, it means how do we know what we know? As with ontology there is a spectrum as shown in Figure 3.1 above. At one end there are the objectivists where meaning is objective and is not reliant on a subject. For example a:

> *"tree in the forest is a tree, regardless of whether anyone is aware of its existence or not ... when human beings recognise it as a tree, they are simply discovering a meaning that has been lying there in wait for them all along"* (Crotty, 1998, p. 8).

Constructivists hold that there is no objective truth:

> *"Instead, 'truth,' or meaning, comes into existence in and out of our engagement with the realities in our world; no real world preexists that is independent of human activity or symbolic language ... [and] individuals construct meaning of the same object or phenomenon in different ways; how an individual engages with and understands their world is based on their cultural, historical, and social perspectives and thus meaning arises through an interaction with a human community"* (Moon & Blackman, 2014, p. 1172).

For subjectivists, not only is there no objective truth rather meaning is ascribed to it by an individual. As Crotty (1998) puts it, "meaning does not come out of an interplay between subject and object but is imposed on the object by the subject," (p. 9). How we gain meaning on an event or object depends on our inner self and our knowledge, values and experiences. Therefore, multiple realities exist, as many as there are individuals. Moon and Blackman (2014) explains the different epistemological positions by way of a logging example. Objectivist will try to study the logging activity and formulate testable hypotheses as to why they do it. A constructivist would look at the interplay of the loggers (people, subject) and their logging activity (object) and try to find the meaning(s) in a social, cultural perspective. Subjectivists would concentrate on the loggers and other people and what meaning they give to the logging activity to determine if there are common

aspects or differing opinions and why. All are valid approaches and can give a more holistic picture than any one way of conducting research.

3.2.3 Theoretical Perspective

Given a research problem, your theoretical perspective will be directed by your ontological and epistemological leaning and the subsequent research questions that you will try to address. In Figure 3.1 above, Moon and Blackman (2014) states that, Knowledge acquisition is deductive, 'value free' and generalizable. Reality is waiting to be discovered and there is an objective truth. This 'worldview' as Cresswell (2014) puts it is held by **Positivists** and relies on empirical information to prove or refute claims. **Post-Positivists** do not think that you can absolutely know the truth only be able to say that a particular theory has not been refuted so far; as mentioned above when talking about the scientific method and Karl Popper. In this scenario, "a researcher begins with a theory, collects data that either supports or refutes the theory, and then makes necessary revisions and conducts additional tests" (Cresswell, 2014, p. 7).

The **Constructivist** worldview as we have discussed above derive meaning from the interaction of the subject (people) and the events (objects). To Creswell (2014), "these meanings are varied and multiple, leading the researcher to look for the complexity of views rather than narrowing meanings into a few categories or ideas. The goal of the research is to rely as much as possible on the participants' views" (p. 8).

Amongst the myriad of other theoretical perspectives, Cresswell (2014) focuses on the **Pragmatist** worldview. Some of the features that denote this view are:

- Pragmatism is not committed to any one system of philosophy and reality.
- Researchers are free to choose the methods, techniques, and procedures of research that best meet their needs and purposes.
- Research always occurs in social, historical, political, and other contexts.

(Cresswell, 2014, p. 11)

The emphasis is on choosing what works in a particular situation for a specific research problem. Therefore, it is quite feasible to mix and match your ontological and epistemological assumptions as long as it helps address the issue at hand. This

goes for the methods we choose to employ in our investigation which we will discuss next.

3.2.4 Methods

Above, Corbin and Strauss (2008) gave us a short definition of Methods and Methodology. Crotty (1998) puts it this way:

- Methods: the techniques or procedures used to gather and analyse data related to some research question or hypothesis.
- Methodology: the strategy, plan of action, process or design lying behind the choice and use of particular methods and linking the choice and use of methods to the desired outcomes.

(p. 3)

There are three main approaches, quantitative analysis, qualitative analysis and mixed methods. Table 3.1 below is from Creswell (2014) and gives an overview of the methods for each type.

Table 3.1 Quantitative, Mixed, and Qualitative Methods

Quantitative Methods	**Qualitative Methods**	**Mixed Methods**
Instrument based questions	Open-ended questions	Both open and closed-ended questions
Performance data, attitude data, observational data, and census data	Interview data, observation data, document data, and audiovisual data	Multiple forms of data drawing on all possibilities
Statistical analysis	Text and image analysis	Statistical and text analysis
Statistical interpretation	Themes, patterns interpretation	Across databases interpretation

(Creswell, 2014, p.17)

3.2.4.1 Quantitative Analysis

As Table 3.1 shows, quantitative analysis involves statistics and is suited to experimentation and surveys. The latter are constructed with closed-ended questions. For example, the following statement might be posed:

I like chocolate more than ice cream

Respondents then have the following options to choose from:

Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	I Like Neither

If say, we then ask a 100 people to fill in our short survey we will know (for those in the survey at least) if chocolate is more popular than ice cream.

Quantitative analysis, therefore is very much suited for objectivists and positivists / post-positivists where there is an answer waiting to be discovered. It lends itself very well to studies in the natural sciences.

3.2.4.2 Qualitative Analysis

In a qualitative study the researcher may pose a similar statement in a survey, i.e. I like chocolate more than ice cream. However, they are not given predefined answers. Instead it is open-ended and respondents are free to write their own answer. Rather than a written survey the researcher may choose to interview respondents to find out what their feelings are on the topic.

The researcher may also decide, like in ethnographic studies (where they embed themselves with another group of people) to collect newspaper and magazine clippings, audio, video and other media on the topic to try and understand the reasons behind why or why not people favour chocolate over ice cream. There is no objective truth to be searched for here. Each individual person in the study has their own valid interactions with the topic and derives their own meaning. The researcher can put these kaleidoscopic viewpoints together and try to work out patterns and relationships that further our understanding.

Qualitative analysis therefore fits the constructivist and subjectivists viewpoints. Studies that involve humans in some way, i.e. the social sciences, can benefit from

this approach where the complexities and nuances can be targeted from a multitude of angles. Corbin and Strauss (2008) have this to say about qualitative researchers:

> *"Committed qualitative researchers lean toward qualitative work because they are drawn to the fluid, evolving, and dynamic nature of this approach in contrast to the more rigid and structured format of quantitative methods. Qualitative researchers enjoy serendipity and discovery. Statistics might be interesting, but it is the endless possibilities to learn more about people that qualitative researchers resonate to. It is not distance that qualitative researchers want between themselves and their participants, but the opportunity to connect with them at a human level. Qualitative researchers have a natural curiosity that leads them to study worlds that interest them and that they otherwise might not have access to. Furthermore, qualitative researchers enjoy playing with words, making order out of seeming disorder, and thinking in terms of complex relationships"* (p. 13).

3.2.4.3 Mixed Methods

As the name suggest mixed methods combines elements of both quantitative and qualitative methods. How it is done will depend on the research in question as well as the viewpoint of the researcher. This fits with the Pragmatist viewpoint where the researcher will use the methods that will best help them answer the problem at hand. As Creswell (2012) states, "the researcher bases the inquiry on the assumption that collecting diverse types of data best provides a more complete understanding of a research problem than either quantitative or qualitative data alone" (p. 19).

The way you design the research can vary. First, is the **Convergent** design where you conduct quantitative and qualitative research separately and then compare the results. Second, is the **Explanatory** design where you start off with a quantitative study followed by a qualitative study based on the findings from the first one. Third, the **Exploratory** design, you begin with the qualitative study to find themes and interesting questions and use them as a basis for the quantitative study.

3.3 Young People Online Research Approach

As outlined in section 3.1 above there are three main lines of investigation. The first is to determine the online safety issues in Thailand. The second is to find educational approaches and activities that are effective in teaching online safety awareness. The third is the cultural influence on education. From this, an education framework is to be constructed to help researchers, education practitioners and policy makers to create effective online safety awareness education programmes.

Early in the research process some facts came to light.

1. As far as the researcher is aware there are very few Thai studies that look into the effects of young people's engagement with the online world.
2. Thailand does not have any school education programmes on online safety awareness.

On the basis of this it was assumed then that the level of online safety awareness was very low. The researcher also assumed (from experience and from the Kids Online research) that you could not just transpose educational material from one country to another and expect it to just work. Especially, as in Thailand, if there are few existing research studies on how young people use the Internet and the issues they face.

A pragmatic approach was adopted for this research. For the first line of investigation it was decided to use the explanatory mixed methods approach. A quantitative survey to be carried out to get an overview of how students were using the Internet and the problems they faced. The findings are then used to inform a qualitative study, a series of interviews with young students. For the second line of investigation, the action research approach was taken (described below in section 3.3). The best way to find out what teaching practices and activities work is to try them out and learn from them. For the third line of investigation, desktop research was undertaken and discussed below in section 6.4.5.

3.3.1 Explanatory Mixed Methods Approach

An in-depth survey formed the quantitative side and one-on-one interviews the qualitative element. This was thought to give a more holistic consideration of the state of Internet use amongst young people in Thailand. By finding out what they do

online, their knowledge (awareness) of online benefits and risks and also the motivations behind their actions we can better design an education framework to inform educators and policy makers. Figure 3.2 below gives a high level design overview of the two methods and how they complement each other. The literature review undertaken informs both parts of the research. For each, there were the same ethical considerations (see section 3.5) and information sheets and consent forms had to be signed by students and their parents / guardians. As we are following the explanatory mixed methods approach we start with the quantitative survey discussed in Chapter 4. The results, that is, the survey analysis then informs the Interview stage discussed in Chapter 5.

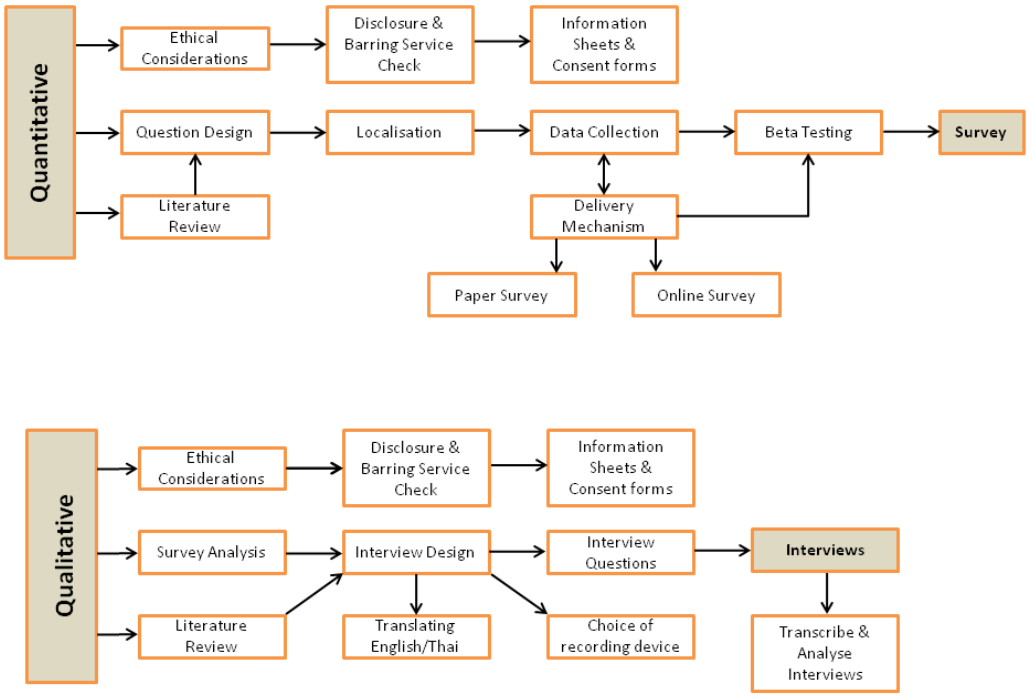


Figure 3.2 Quantitative & Qualitative Workflows

As mentioned above the quantitative survey was conducted early in the research process because no study of this kind has been undertaken (as far as the researcher knows) in Thailand. It was carried out in schools at first on paper and then using an online platform. This was thought to be a more efficient way of collecting the data than the GKO method of carrying out the survey at the subjects' homes. The result provides a baseline for future studies. Interesting and ambiguous findings from an

analysis of the survey would feed into the qualitative part of the research, i.e. to inform the interviews just as the Net Children Go Mobile study (section 2.2.2) used the Kids Online research for their work.

3.4 Teaching Approaches

Education is a fertile area of research, especially when it comes to teaching methods and strategies. An influential contributor to this is the, Organisation for Economic Co-operation and Development (OECD) and since 2008 they have produced a, Teaching and Learning International Survey (TALIS). A second followed in 2013 and the third in 2018. It covers 48 countries and economies (OECD, 2019) and looks at the ingredients that produce good educational outcomes and "aims to provide valid, timely and comparable information to help countries review and define policies for developing a high-quality teaching profession" (https://www.oecd-ilibrary.org/education/talis-2018-results-volume-i_1d0bc92a-en).

3.4.1 Philosophical Underpinning

From their TALIS survey the OECD commissions a number of working papers and discussion pieces. Working paper 130 (Echazarra, Salinas, Mendez, Denis & Rech, 2016) is entitled, 'How teachers teach and students learn: Successful strategies for school'. In their paper they lay out the factors that the OECD research points to as being important to successful learning.

Whether consciously or subconsciously how a teacher delivers their lessons do have an ontological and epistemological basis (section 3.2). Echazarra et al. (2016) outlines some approaches and their philosophical stances. The three main ones are:

- **Transmission model:** This is the traditional approach. The teacher is the font of knowledge and the authority figure. Transmission of information is one way from the teacher to the student. This standpoint is positivistic (section 3.2.3) that there is an objective truth that exists independent of any subject (students or teachers).
- **Social constructivist models:** For constructivists, knowledge is neither objective or subjective rather it comes about from the interplay of the subjects (students) and the object (topic). This fits in well with modern teaching models which are student-centric and creates "an environment that deliberately

encourages collaboration, inquiry and creative problem solving" (Echazarra et al., 2016, p. 8). They, "see themselves as facilitators of students' own inquiry, or see thinking and reasoning as more important than specific curriculum content" (OECD, 2015b, p. 4).

- **Freedom-based models:** This approach is subjectivist in nature, knowledge is derived from the subject (the student) and**:**

  "learning always starts with the individual's needs, goals and desires, and not with any supposed body of knowledge or societal demands ... it centres on a learner's entirely self-motivated exploration of whatever the world has to offer that seems relevant to the learner's own life" (Echazarra et al., 2016, p. 8).

3.4.2 Teaching and Learning Strategies

Figure 3.3 below outlines the range of teaching and learning strategies from the traditional teacher-directed model to the modern student-oriented model.

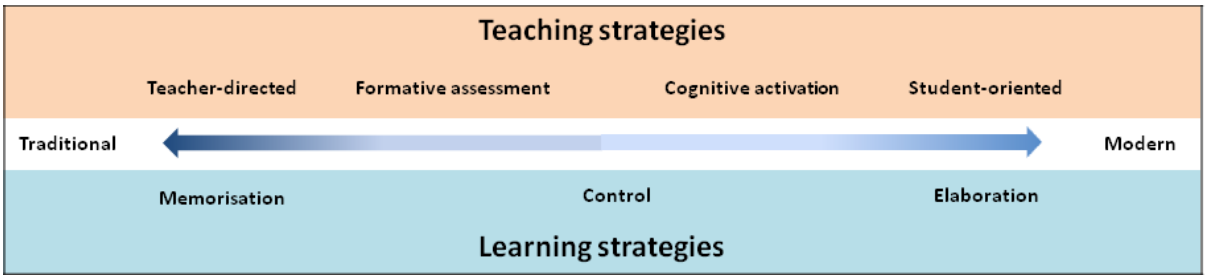


Figure 3.3 Classifying Teaching and Learning Strategies

(Echazarra et al., 2016)

The traditional teacher-directed models include such approaches as rote learning, whereby a teacher stands at the front and gives a lecture and students are expected to write notes and absorb information. Hattie (2015) calls this surface learning which "privileges knowing facts, ideas, and content" (p. 80) whereas deeper learning, "privileges knowing relations and connections between ideas and extending these ideas to other contexts" (p. 80). Some students seek to take charge of their learning by setting goals and use control strategies including, "summarising information, clarifying concepts, organising material, planning study time, checking/ monitoring/

evaluating progress, identifying relevant information and reflecting on their learning strategies" (Echazarra et al., 2016, p. 72).

In the modern student-oriented model learners are encouraged to use the elaboration strategy which includes "using analogies and examples, brainstorming, using concept maps and seeking for alternative ways of finding solutions" (Echazarra et al., 2016, p. 71).

In the formative assessment model, the teacher informs students of their strengths and weaknesses, how to improve and also what to expect from class tests and quizzes. Lastly, cognitive activation "refers to the use of practices capable of challenging students in order to motivate them and stimulate higher-order skills, such as critical thinking, problem solving and decision making" (Le Donne, Fraser & Bousquet, 2016, pp. 23-24).

Teachers do not need to ascribe to just one approach. Lavy (2016) analysing Jewish school datasets came to the conclusion that the "merits of traditional versus modern approaches to teaching... [that] one approach need not crowd out the other and that the two can coexist" (p. 118). Instead successful classrooms focus on "instilment of knowledge and comprehension" and use of "techniques that endow pupils with analytical and critical skills" (p. 118). Hattie (2015) explaining his concept of 'Visible Learning' puts it this way:

> *"The mindset is not that students come to the class to be taught, but that the teacher comes to the class to evaluate the impact of their teaching. Informing the students of the criteria of success near the beginning of the course, having a clear understanding and modifying teaching in light of the students prior achievement, using teaching methods that focus on moving students from surface to deeper understanding, ensuring the assessment are aligned with the success criteria and appropriate proportions of surface and deep learning, maximizing feedback about 'where to next,' and ensuring that the course is sufficiently challenging to entice the learners into aiming for mastery of the content and understandings desired"* (p. 87).

Lipowsky et al. (2009) assert that good learning outcomes depends more on having a supportive classroom environment rather than any particular approach, that is, "supportive teacher-student relationships, positive and constructive teacher

feedback, a positive approach to student errors and misconceptions, individual learner support, and caring teacher behaviour" (p. 529). An OECD (2015b) paper looking at the use of technology found that it too was very dependent on the classroom environment and they speculate that this may be due to, "few disruptive students ... [and] because students enjoy interacting with technology" (p. 4). They also point out that those who are inclined to constructivist approaches also tend to use technology more. This they surmise is because these teachers tend to use active learning techniques that ICT enables and allow "students to pursue knowledge in more independent ways than traditional teaching" (p. 4). The next section discusses some of these active learning techniques.

3.4.3 Active Learning

Active learning is student-oriented as opposed to teacher-directed passive learning. Teachers do not teach in the traditional sense, they act more as facilitators to students who 'learn by doing' and discovering and applying information in the given context. In the TALIS 2013 survey 94% of all teachers saw their roles as facilitators and 93% agreed that students should try to figure out solutions for themselves first. However, "teachers report using passive teaching practices, such as presenting a summary of recently learned work, more frequently than active teaching practices" (OECD, 2015a, p. 1). This they put down to the real world constraints of teaching everywhere. They recognise and advocate that:

> *"Active teaching techniques can greatly benefit students' holistic development, for example it can give them chance to negotiate with other team members in small group work and practice skills necessary for team work. In order to stimulate active teaching and the development of skills students need for lifelong success, systems should assist teachers in balancing their practice with more active methods."* (OECD, 2015a, p. 4).

There is a plethora of techniques that makes use of active learning including; discussions, quizzes, projects, model making and presentations. Below are some of the more common approaches that make use of active learning.

3.4.3.1 Problem Based Learning

Allen, Donham and Bernhardt (2011) explain that in problem based learning (PBL) "the role of the instructor shifts from presenter of information to facilitator of a

problem-solving process. Instead of lecturing, PBL instructors must find or create good problems based on clear learning goals" (p. 23). Silva, Bispo, Rodriguez and Vasquez (2018), assert that PBL is designed, "to improve and optimize educational outcomes because it is student centered, collaborative, contextual, integrated and self-directed, and it promotes more reflective learning" (p. 162). In their study of management undergraduate students they found that by using PBL students were; motivated to learn, combined theory and practice and the teamwork aspect helped facilitate learning. However this does comes at a cost because it requires more effort and needs more time than traditional approaches.

3.4.3.2 Inquiry Based Learning

Inquiry Based Learning (IBL) is similar to PBL except there is no defined problem to be solved. Here, rather than a teacher telling students what information they need to know they are encouraged to explore the topic at hand and discover it for themselves. This type of learning lends itself especially well (though not limited) to the sciences. Suárez, Specht, Prinsen, Kalz and Ternier (2018) put forward that IBL:

> *"has been increasingly suggested as an efficient approach for fostering students' curiosity and motivation by linking science teaching in schools with informal learning and phenomena in everyday life. Such strategy can help students to develop their ability to work in unpredictable and complex environments, especially in the current, ever-changing, technology driven, society"* (pp. 38-39).

Lazonder and Harmsen (2016) conducted a meta-analysis of 72 IBL studies and found that the best ones, counter-intuitively, provided a lot of guidance especially if the students had little or no prior knowledge on the topic. They suggest the following:

- Process constraints: Restrict the comprehensiveness of the learning task:
    - Learners who are able to perform and regulate the basic inquiry process, but still lack the experience to do so under more demanding circumstances
- Status overviews: Make task progress or learning visible:
    - Learners who are able to perform the basic inquiry process, but lack the skills to plan and keep track of their learning trajectory
- Prompts: Remind to perform an action:

    - Learners who are able to perform an action but may not do so on their own initiative
- Heuristics: Remind to perform an action and suggest how to perform that action:
    - Learners who do not know exactly when and how an action should be performed
- Scaffolds: Explain or take over the more demanding parts of an action
    - Learners who do not have the proficiency to perform an action themselves or cannot perform the action from memory
- Explanations: Specify exactly how to perform an action
    - Learners who are (largely) incognizant of the action and how it should be performed

(Lazonder &Harmsen, 2016, p. 689)

The same guidelines would work well for PBL. In both, the teacher needs to be vigilant and adapt lessons so that it enables all students to learn in their best, respective way. For example, a teacher could divide the class into small groups and give them different tasks or create a menu of activities that ultimately lead to the same learning but allows students to choose their own path. This requires more planning and work and is possibly one reason why teachers in the OECD's TALIS survey reports (cited above in the introduction to section 3.4.3) that although they saw themselves as facilitators of students own learning much of teaching was still in the passive traditional manner.

3.4.3.3 Gamification

Gamification is, "the use of game design elements in non-game contexts" (Deterding, Dixon, Khaled, & Nacke, 2011, p. 9). This "approach suggests using game thinking and game design elements to improve learners' engagement and motivation" (Dicheva, Dichev, Gennady & Angelova, 2015, p. 1). Buchinger and da Silva Hounsell (2018) outline some of the elements:

> *"goals, uncertain outcomes, performance feedback, self-esteem promotion, perceptual arousal, variability in challenges, confidence, sensory and cognitive curiosity, relevance, control (choice opportunities and responsive learning environment), fantasy, cooperation/ collaboration, competition, space*

> *for recognition and satisfaction (through natural and positive consequences and equity)"* (pp. 133-134).

Other elements such as awarding points, stars and badges for achieving objectives have long been used by educators. You can even make a case that the grading of coursework or exams can be regarded as a game element, (Lee & Hammer, 2011, p. 1). However, Lee and Hammer (2011) go on to say that, "educational gamification proposes the use of game-like rule systems, player experiences and cultural roles to shape learners' behaviour" (p. 3).

Laster (2010) gives an example where a teacher dropped the use of grades and instead students had to earn experience points. This was to make it "more like a video game, but also lets students feel like they're earning points for getting things right instead of losing them for incorrect answers" (para. 7). An essential part of this is that students get instant feedback and are able to correct themselves if they get something wrong, (Dicheva et al., 2015; Huang & Soman, 2013; Lee & Hammer, 2011). Buchinger and da Silva Hounsell (2018) echoes this by stating that, "in order to produce intrinsic motivation, activities should maintain an optimal level of difficulty, with clear objectives and feedback" (p. 133).

3.4.3.4 Other Approaches

There are many other approaches and they all use an aspect of PBL, IBL and gamification. For example, there is **blended learning** which includes the inverted or flipped classroom room model. This is where students do the initial work at home, (e.g. watching a lecture online) and then the follow up in classroom using an active learning method such as a group discussion or debate.

Another example is **experiential learning** where the focus is very much learning by doing. Rather than relying on cognitive functions this way of learning is about discovering while experiencing and then actively reflecting on what you have achieved. OECD (2018) has this to say:

> *"Experiential learning focuses on the importance of the process of discovery and the value of the personal negotiation of meaning, as well as more widely on the importance of understanding and delivering learning environments as holistic experiences requiring the active experimentation of learners with their peers"* (pp. 3-4).

3.4.4 Action Research Methodology

One of the lines of investigation for this research is to determine the kinds of teaching approaches / activities that will be effective in delivering online safety awareness. To a degree this is a 'try and see' exercise to explore the types of activities that the students will engage in. This lends itself very well to an action research approach which is the "systematic and sustained study of some aspect of teaching and learning" (Souto-Manning, 2012).

The model incorporates five distinct phases as shown below in Figure 3.4. The initial stage is to identify a research problem to investigate. For this research, it is effective learning strategies for online safety awareness education. Next is the data gathering phase. In this case, it relies on the literature review and the quantitative and qualitative phases, i.e. the online survey and one-on-one interviews. This gives a picture of the online habits of young people in Thailand and also the issues they face.

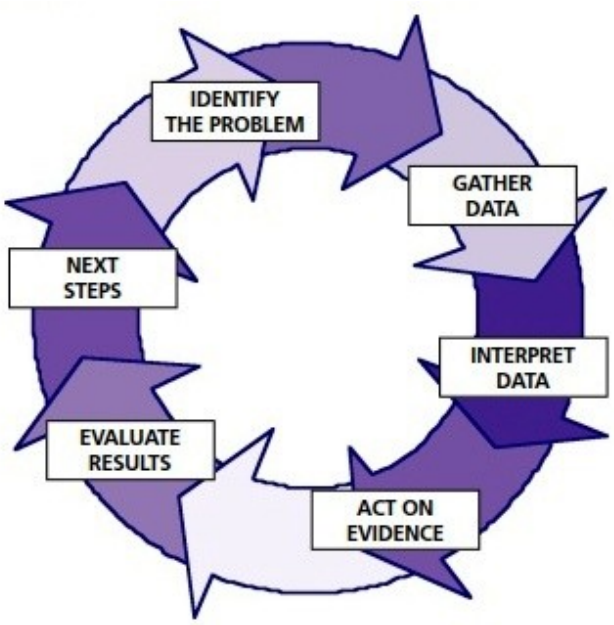


Figure 3.4 Action Research Cycle

(Ferrance, 2000)

Activities are then designed to address the issues and packaged into workshops. After each workshop there is a process of evaluating and reflecting on what aspects worked and which ones needs to be improved upon or discarded. The next

workshop would then take onboard the lessons learnt and then the process would repeat. See section 7.2 for a full discussion and results of the action research approach for this study.

3.4.5 Summary

There are many different approaches, methods and styles in teaching. This promotes a diversity of learning and thinking. Whether a teacher and by extension their students produce good educational outcomes is less to do with any particular approach and more to do with a positive classroom climate (OECD, 2015b). That is, having a clear structure and objective(s), good teacher student relationships and constructive feedback. From this the teacher can then choose a particular way of teaching or a mix and match approach depending on the topic. A good way to determine what works or not is by employing the action research methodology.

The approaches discussed above are fundamental in the design of the activities discussed in section 6.7 and the online safety awareness workshops discussed in Chapter 7.

3.5 Ethical Considerations

The ethical considerations influenced the research greatly. Berman (2016) wrote a guide for the Global Kids Online project on the ‘ethical considerations for research with children’. In it they state that, “ethical issues are context-specific and contingent on environmental, cultural, social, political and legal frameworks and conditions,” (p. 5). Figure 3.2 above shows that both the survey and interviews had to take this into account. A complicating factor was that the research institution is based in the UK while the field work was undertaken in Thailand. Therefore the research needed to comply with the rules, regulations and ethical codes of both the UK University and the education bodies in Thailand.

As the target group is young people aged 12-18 ethical approval was sought from the University of Plymouth’s Science and Engineering Human Ethics Committee. One of their main requirements was the provision of information sheets and consent forms for students and their parents / guardians. Berman (2016) gives this definition for informed consent:

> *"the voluntary agreement of an individual, or his or her authorized representative, who has the legal capacity to give consent, and who exercises free power of choice, without undue inducement or any other form of constraint or coercion to participate in research. The individual must have sufficient knowledge and understanding of the nature of the proposed evidence generating activity, the anticipated risks and potential benefits, and the requirements or demands of the activity to be able to make an informed decision"* (p. 5).

They go on to ask, "have you designed the informed consent/ assent forms or process to reflect the capacities, competences and cultural norms of the participants, taking into account issues such as literacy, language, age, cultural meanings ascribed to signing forms etc.?" (Berman, 2016, p. 16). In drawing up the information sheets and consent forms these issues were addressed.

Teachers and students were informed that the consent forms needed to be signed and returned before the students could take part in the surveys and interviews. This was even though it was not a requirement on the Thai side. The information sheet was produced to explain exactly the nature of the research and what it tries to achieve and their options in case they feel uncomfortable with any aspect of the process or questions. The information sheets and the consent forms were translated into Thai by Tharabun. See Appendix B for the English and Thai versions of the forms created.

As the University of Plymouth is a UK institution the researcher needed to apply for a Disclosure and Barring Service check. This is a criminal records check and part of a young people and vulnerable groups safeguarding measure. Again this was not a requirement in Thailand.

On the Thai side the Education Authorities in Nong Khai province (North East Thailand) were approached. An official University of Plymouth letter (in English and in Thai) was produced outlining the objectives of the research and asking for permission to carry out the work in their region. The two schools in Nong Khai province that took part in the survey are run by different education authorities so permission had to be sought from each. This was facilitated by Tharabun who is a

respected teacher in the province. As we will find out in Chapter 6 following protocols and rules, especially in official matters, in Thailand are very important.

In Roi Et a letter of cooperation was presented to the President of Roi Et Rajabhat University, Dr. Chaloey Pumipuntu from the University of Plymouth. This was facilitated by Dr. Kriangsak Srisombut, Vice President for Student Development at Roi Et Rajabhat University who also coordinated meetings and visits with the three local schools that took part in the research.

3.6 Young People Online Model

As described above in chapter 2, the Global Kids Online (GKO) project is at the forefront of research into young people's online behaviour and attitudes. Therefore it was deemed prudent to adopt their model (Figure 2.1). This will enable us to more easily compare the research with existing studies. This research used the same question set which comprises of three sections; Access & Use, Activities and Skills, and Risks & Outcomes. However, not all questions were used and a few needed to be adapted to take into consideration the applications / services used in Thailand. This is described in more detail in the data collection process (section 3.7) below.

A simplified, adapted version of the EU Kids Online model, as given in Figure 2.1, was employed. Their model has been developed over several years and has increased both in complexity and sophistication as a result of their findings. As this will be the first research of its kind in Thailand stripping the model to just looking at a few key factors will simplify the endeavour while still providing a holistic picture of the state of young people's attitudes and online behaviour. Future research will then be able to build upon the model in a similar fashion as the Kids Online one.

Livingstone, Mascheroni and Staksrud (2015) explain that the original Kids Online Model was one that sought to understand the:

> *"cause-effect process for the main steps toward the occurrence of harm as a result of variables relating to (a) the child (their demographic and psychological descriptors); (b) the child's internet usage (how much and where they use the internet); (c) the child's online activities; and (d) the risk factors encountered by the child in consequence"* (p. 4).

The Young People online model will take the same approach. Their first model also had a 'social mediation' layer looking at the role that parents, schools and peers play in terms of risk and safety (Livingstone, Haddon, Görzig and Ólafsson, 2011a) Finally it also had a "country as a unit of analysis" layer that looked at the following factors:

- Socio-economic stratification
- Regulatory framework
- Technological Infrastructure
- Education System
- Cultural Values

In the Young People Online model, the social mediation layer becomes 'Influencers'. The country level is replaced by the 'Environment'. The terminology this research uses is from their most recent model, for example, using the term, 'digital ecology' rather than 'technological infrastructure'. To further simplify, socio-economic stratification was not included in the Young People Online model as most of the research would take place in semi-rural areas of Thailand. In future studies it would be an interesting area of research. This study will serve as a baseline for future researchers.

The system of layers is drawn, "from Urie Bronfenbrenner's ecological approach, in which he proposed encircling layers of social influence - from close to distant" (Livingstone et al., 2015, p. 4). In the next section we discuss this approach and how it relates to the Kids Online model and how the Young People Online model develops the ideas further.

3.6.1 Bronfenbrenner's Ecological Approach

Urie Bronfenbrenner was an influential human development psychologist working in the second half of the 20th century and into the 21st century until his death in 2005 (Rosa & Tudge, 2013). His seminal work was written in 1979, 'The Ecology of Human Development' (Härkönen, 2007) and introduced the layers concept that the Kids Online Model and Young People Online Model utilises. Bronfenbrenner, "viewed development as emerging from the interaction of individual and context," (Rosa & Tudge, 2013, p. 244). The 'context' is all the factors that influence a child's development. In the decades after its introduction, Bronfenbrenner continued to

refine the theory and in particular giving the child a greater role in their own development and the importance of 'time' as a layer to be studied (Rosa & Tudge, 2013).

The final model is represented below in Figure 3.5.

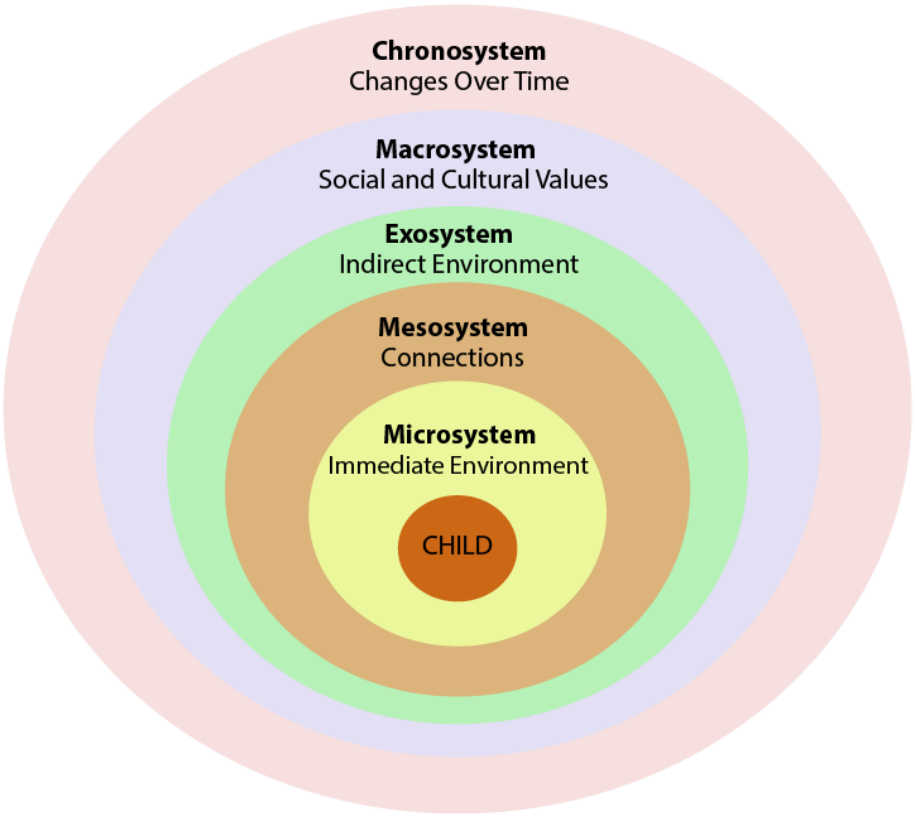


Figure 3.5 Bronfenbrenner's Ecological Systems Theory

(Psychology Notes HQ., 2019)

At the centre is the child and the first layer that they interact with is the 'Microsystem'. This is "a pattern of activities, roles, and interpersonal relations experienced by developing person in a given face-to-face setting" (Härkönen, 2007, p. 7). This includes; their home, parents (and other caregivers) siblings, other family, friends, school, teachers etc. The second layer is the 'Mesosystem'. It is the interaction between the various Microsystems in the child's life, home, school, their neighbourhood, maybe place of worship if they are from a religious family and their hospital if they are ill. The relationship between two Microsystems can be supportive or unsupportive. For example, taking a look at the interaction between parents and

teachers at the child's school. If their parents and teachers have a good relationship and are in general agreement then this will probably have a beneficial effect. If, on the other hand, they are constantly in dispute this may have a negative impact on the child.

The third layer is the 'Exosystem'. This is the interaction of two Microsystems, one of which directly interacts with the child and the other does not, for example, a parent and their workplace. The latter can play a significant role even though it does not interact with the child directly. In our example, the parent's boss at work may impose long working hours thus reducing the time the parent can spend with their child. It is important to note that the child is not a passive bystander in this because they too have an effect on their parent's boss and organisation. If the child was taken ill it may mean the parent will have to take time off from work to look after them.

The fourth layer is the 'Macrosystem', the social and cultural layer. The Macrosystem is the context in which all the other layers operate in; "the macrosystem can be thought of as a societal blueprint for a particular culture, subculture, or other broader social context ... [and the] characteristic of the macrosystem are transferred from one generation to another by the means of different cultural institutions like family, school, congregation, workplace and administration that intermediate the processes of socialization."(Härkönen, 2007, p. 12-13). Rosa and Tudge (2013) states that, "as a result, the daily experiences of children in any given societal, socioeconomic, ethnic, or religious group tend to be similar, (p. 247).

In a critique of Bronfenbrenner's Macrosystem, Vélez-Agosto et al. (2017) argue that, "culture is not a separate system operating from a macro level, but it is within everyday action (activities, routines, practices) and part of communities of practice through a language mediated meaning-making system," (p. 900). They argue that the model should instead be made up of cultural microsytems. It is not necessary to invoke mesosystems and macrosytems as, "these systems flow from one another and interact with one another, not bounded and distinctly, but fluidly," (Vélez-Agosto et al., 2017, p. 906).

The fifth layer is the 'Chronosystem'. This accounts for the changes over time in terms of relationships between actors and between actors and institutions. This layer was added much later than others and it goes some way to mitigate Vélez-Agosto et

al. criticisms as it emphasizes bi-directional, reciprocal interactions that are integral to the overall theory where the child plays a big role in their own development, termed, proximal processes. The added chronosystem layer changed the theory from an ecological one to a bioecological one. Rosa and Tudge (2013) assert that "proximal processes are the center of bioecological theory and are viewed as the driving forces of human development," (p. 252). They go on to quote Bronfenbrenner & Ceci (1993):

> *"human development takes place through processes of progressively more complex reciprocal interaction between an active evolving biopsychological human organism and the persons, objects, and symbols in its immediate environment. To be effective, the interaction must occur on a fairly regular basis over extended periods of time"* (p. 317).

Härkönen (2007) concludes that Bronfenbrenner's bioecological theory, "is used in articulating the process of human socialization and it has been a key to understanding education," (p. 16). Researchers in many fields related to human development (especially child development) have utilised the theory in their work and continue to do so.

The different layers of the EU Kids Online model follow Bronfenbrenner's theory with the child at the centre. The next layer is the social level which takes account of the influence of; the child's family, their peers, educators the wider community and the digital ecology. Enveloping this is the country level which includes technological provision (infrastructure), culture and media. Interestingly though, they do admit that this is not the focus of their work, "we certainly do not mean to underestimate the importance of societal factors, but in the model we merely sketch what these might be, leaving it to future research to hypothesise which factors shape children's online experiences within a country," (Livingstone, Mascheroni & Staksrud, 2015, p. 12). This is an aspect which this research aims to address. The premise is that, in providing a framework that takes account of in-country specific factors, specifically the role of culture in education it will make the delivery of online safety awareness education more effective.

3.6.2 Proposed Model

The model (Figure 3.6) focuses on the attitudes and behaviour of young people and how it affects their use of online services, the benefits and, in particular, the risks involved. How they experience the online world is driven by many factors. The influencers on young people include family members especially their parents / guardians, educators which in most cases are their school teachers and lastly, their peers, i.e. other young people.

All people are part of and interact with their physical and social environment. This includes cultural factors i.e. what is seen as the norms in a society. The literature review above alludes to South East Asian countries emphasis on being 'good' citizens and polite rather than keeping safe online. Media factors include TV, movies and newspapers. As well as consuming these in the traditional ways they are all now part of the digital ecology which also includes online social networks, apps and services. How they get online and the ease of access also plays a part. Taken together all the factors impact on the attitudes that young people have and the way they behave online. This leads to both benefits (positive experiences) and risks (potentially harmful experiences). These factors will be expounded upon when we revisit the proposed model when discussing the education framework.

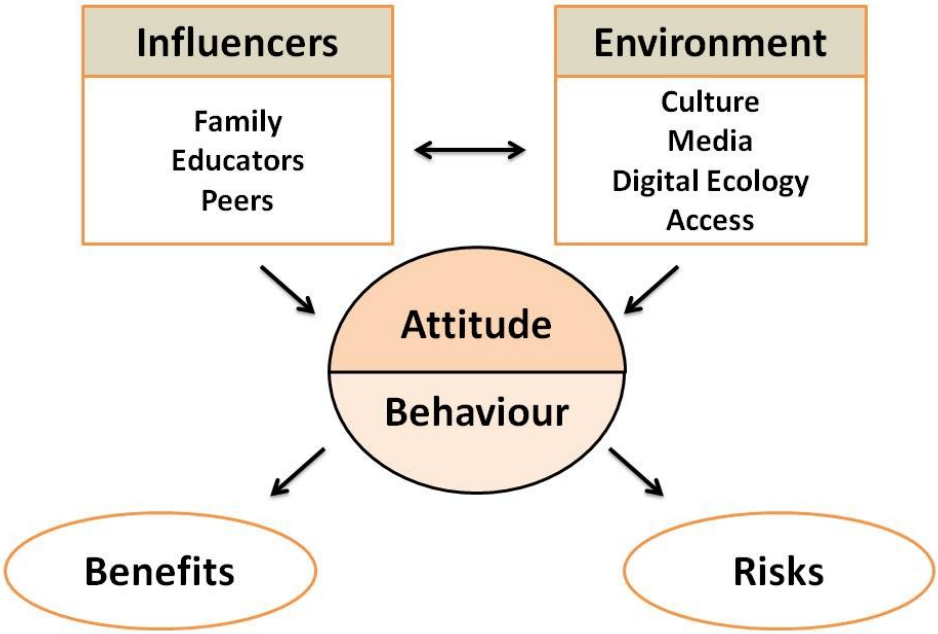


Figure 3.6 Young People Online Model

3.7 Data Collection

3.7.1 Questions

The Global Kids Online website provides an extensive set of research tools at http://globalkidsonline.net/tools/survey/. It includes all the question sets and recommended ways to use their material. Therefore the first stage was to go through and select questions from each of the sections that would enable us to obtain a comprehensive overview of a person's online behaviour. A few additional questions were added which may prove interesting like; 'how many Facebook friends do you have?'

The question sets they provide falls into three main categories, Access & Use, Activities & Skills and Risks & Outcomes. These are the three areas of interest as laid out in their first model (Figure 2.1). One of the objectives of this research is to compare the findings from our case study LDC, Thailand, with that of advanced countries. Using the same structure and question sets will facilitate this. The research will then add to the already established body of knowledge that can be used for comparative studies. Finding out the similarities and differences between different countries will allow researchers, policy makers, educators and other stakeholders to make locally based informed decisions in their respective field.

Access & Use

Participant responses to this group of questions provide an overview of:

- How often they go online
- From where they access; at home, in their bedroom, at school, etc.
- What devices they use to go online; computer at home, laptop, smartphone, etc.

Activities & Skills

This set of questions tries to find out the online activities that they engage in and their level of know-how navigating the technology. Do they know how to:

- Install and uninstall software
- Search for information
- Deactivate the location function

- Protect a smartphone with a security pin or pattern

Risks & Outcomes

Some of the questions asked in this section are necessarily sensitive in nature as they ask about the young person's negative online experiences such as if they have seen:

- People talking about committing suicide
- People talking about taking drugs
- Gory or violent images

It asks about online safety practices like whether they had sent a photo or video to someone they had not met face to face. If they have had a negative experience who do they tell and lastly what guidance do they receive from parents / guardians and teachers.

3.7.2 Localisation

Berman (2016) has this to say about adapting surveys:

> *"the research instruments ... need to be piloted to determine their relevance to the particular country / sites involved. Pre-research consultations with stakeholders will support this process, but piloting is critical not only to determine understandings but also to ground the instrument in the appropriate language and reference points"* (p. 18).

They give a list of questions the researcher(s) should ask themselves (Berman, 2016, p. 18):

- Do you have sufficient information from the field to know how people and communities are likely to respond to the survey subject matter and questions?
- Have you made sure that the questions for surveys ... are value neutral, culturally and age appropriate and are not going to make people feel uncomfortable or upset? Have you consulted relevant communities or undertaken appropriate situational analysis?
- Have you made sure that the language used in the survey/ interview/ focus group is age or culturally appropriate?

- Have you considered what, if any, changes will need to be made to the survey if privacy is not possible? Have you considered altering the questions to ensure that respondents do not have to divulge personal or sensitive information in front of others?

Banaji (2016) emphasises that researchers need to be more ethnographic in their outlook and to carefully choose their questions. They lament that, “sadly, research questions transferred (e.g., from the global North to the global South, or from wealthy neighbourhoods to impoverished ones) without attention to local and international inequalities can generate contaminated knowledge” (p. 6). They give, as an example, a study in rural South Africa in an underserved community where the local enumerators (people carrying out the survey) did not want to ask questions such as if they played games on X-box. Banaji (2016) argues that, “such questions can make the children uncomfortable because they might think the interviewer is strange for asking about things they should know does not exist here” (p. 6).

To avoid such potential pitfalls there was an extensive period of question preparation. The researcher interviewed two local Thai teachers and one Thai student to find out what apps were commonly used, how people accessed the Internet and from which locations. They also helped in the translating of English terms into Thai, e.g. cyber-bullying. This was particularly difficult as there is no direct translation for the word bully. In Sittichai and Smith (2013) they outline the various phrases with their associated meanings:

> *“**Nisai mai dee** means bad habit, generally bad behavior; **klang (klaēng)** refers to more verbal behaviors, and **tum raai (thamrāi**) to more physical behaviors. Two other terms current nowadays are **rang kae (rangkaē)** which also means physical aggression and raow which means general aggression”* (pp 34-35).

A Mahidol University (2014) study undertaken with support from Plan International Thailand for the UNESCO Bangkok Office found that in schools:

> *"both students and teachers described a continuum of behaviours ranging from **kan yok-lo (teasing)**, considered harmless, through **kan klaeng**, used for less serious kinds of bullying or rough teasing, to **kan rangkae**, which is the academic Thai term for “bullying,” and was used for the most severe*

cases of bullying. The students might perceive the same behaviours as any of these, depending on perceived intent (hostile vs. friendly) and the relationship between those involved (friend, enemy, or neither)" (p. 13).

Because of this wide divergence in possible meanings and interpretations, to avoid potential pitfalls it was decided to ask if they felt upset by online interactions rather than if they had been bullied. For example, one question posed was, "In the past 12 months has someone acted to you in a hurtful way online and if so, how upset were you?"

Using the information gathered a draft of the questions was created in English. This was then passed over to Tharabun. He translated all the questions into Thai. The researcher then sat down with a second teacher, Miss Paphanat Wichitpan (Kru Bom)[1] and went through the translation meticulously question by question. She suggested only a few changes which were subsequently agreed to by the first translator.

For anonymity and confidentiality reasons the survey explicitly does not ask for names, date of birth or other personal information apart from the participants, age, gender and form number. After consulting with the Thai collaborators it was decided that for gender, as well as, 'male' and 'female' to add 'transgender' in recognition that a few students may identify themselves as such. It may also point to an interesting line of investigation for future studies.

3.7.3 Pilot Testing

Seven sets of the survey were printed in paper form. It comprised of 25 questions most of which had subsections, see Figure 3.7 below for an example and Appendix A for the full set.

[1] 'Kru' means teacher. It is common practice and a respectful way to address teachers in this manner followed by their nickname which all Thai people have.

8. If you have a smartphone how often have you used the following in the past month?

	Many Times Every Day	Every Day	Every Week	Less Often	Never	Don't Know
Facebook						
Facebook Messenger						
Google						
WhatsApp						
Instagram						
LINE						
Viber						
Twitter						
WeChat						
BeeTalk						
Camfrog						

Figure 3.7 Example Question from Survey

We asked six students from Kru Bom's school to sit and take the survey (see Figure 3.8). They all completed it in less than 20 minutes whereas the researcher had thought it would take around 40 minutes. They were encouraged to ask questions if they did not fully understand any part of it but no one commented on anything. However there were discrepancies, in a few instances, where students made incompatible choices. For example, they will answer yes to, 'acting in a hurtful way on a social network' but when asked how many times they have done this they replied 'never'.

Figure 3.8 Pilot Testing Survey

(Used with permission: Photo by Tharabun Khuchinda)

It took several hours over a two day period to enter the data from the six completed surveys onto an Excel spreadsheet. It was decided then that it was imperative to find an electronic means of carrying out the survey.

After making a few minor changes to the questions to try and avoid the discrepancies outlined above a final review was carried out with Tharabun.

3.7.4 Software Choice

For undertaking online surveys there are several options like SurveyMonkey and SurveyGizmo. Their free offerings though are limited like the number of respondents is set to 100 or less. Therefore it was decided to implement the LimeSurvey open source solution, https://www.limesurvey.org/. It took around two months to install, learn and prepare the online version of the survey in English and in Thai. It was hosted on a web server owned by the researcher in a password protected folder.

When it came to the Roi Et surveys the questions were hosted on the University of Plymouth's LimeSurvey server which provided for better stability.

3.7.5 Pilot Testing Round 2

As the survey was available online it could be sent to both English and Thai speakers to check. After correcting a few mistakes (mostly typographical errors) the survey was deemed ready.

3.8 Conclusion

This research is composed of three main lines of investigation. The first is to ascertain the online behaviour and attitudes of young people in Thailand. As with the EU Kids Online research this will be achieved using a quantitative survey with the questions adapted from their research. The adapted questions were as a result of consulting Thai teachers who helped translate and put them into a form that would be understandable by Thai youth. This localisation process took several months and iterations including pilot testing with students to get the survey ready. From the analysed results, interesting or anomalous findings will be used as the basis for the qualitative part of the investigation, the interview phase. This will add context and stories detailing the online experiences of young people and as such give a more holistic picture of the digital landscape of Thailand.

The second line of investigation uses the action research approach to test out different methods in the teaching of online safety awareness. This involves performing a number of workshops each building on the lessons learnt from the previous ones. The third line of investigation is to explore theoretical models of culture and in particular how it relates to the education sphere and how it might influence the teaching of online safety awareness in different countries.

Ethical approval was sought from the University of Plymouth's Science and Engineering Human Ethics Committee as the target group was between 12-18. There was no comparable procedure to go through in Thailand but permission was sought from the relevant education authorities and schools. In the next chapter this is expounded upon when we discuss the survey process, findings and analysis.

4. A Survey of Young People Online in Thailand

In this chapter we will discuss the quantitative part of the study, that is, the online surveys conducted in schools in Nong Khai province (phase 1) and Roi Et province (phase 2). For each phase we detail the pre-survey steps required before the surveys could be undertaken. The findings and analyses are then presented for the Nong Khai surveys. The Roi Et survey results are analysed comparatively with the findings from the Nong Khai results to give an overall picture of the behaviour and attitudes of young people in Thailand.

4.1 Phase 1: Nong Khai Surveys

Before the survey could be carried out there was a lengthy process of first seeking ethical approval from the researcher's university, permission from education authorities in Thailand and then consent from parents / guardians and students. Then several visits were made with the participating schools to work out when the survey could be carried out and to ensure that their computers were configured to be able to access the online survey.

4.1.1 Administrative Process

Tharabun and the researcher visited the government offices for education. It was necessary to submit a request to carry out the surveys at two separate offices as the schools are in different regions, one in the town and the other in a village about 60km east of Nong Khai. In this way it would be more representative of students in the province, that is, by including town and village students. We then visited the directors (headmasters) of the schools to formally (in writing) to ask for permission though this had been given informally already.

4.1.2 Consent

Around 300 consent forms and information sheets were distributed between the two schools taking part in the survey with the majority going to the village school as they had many more pupils. At the village it was not just a simple case of distributing the material and waiting for them to come back. Kru Bom met with the head of the village

to explain the reasons behind doing the survey and then enlisting him to explain to the villagers some of whom have difficulty reading.

4.1.3 Survey

The Nong Khai surveys were carried out in November and December of 2016. The first school participating in the survey is situated on the grounds of a Buddhist temple. It is a fairly small school with around 120 pupils. It is free to attend and the students come from the lower socio-economic groups. The survey took place in small groups in the computer room, see Figure 4.1 below.

Figure 4.1 Students Taking the YPO Online Survey

(Used with permission: Photo by researcher)

Although there were 14 available computers it was quickly found out that if more than 10 participants took the survey concurrently it would throw one or two of them out, seemingly at random. This was a limitation of the server that it was being hosted on. After a while a system was devised whereby as one student finished another took their place. Most participants finished the survey between 20 to 40 minutes.

As there are sensitive questions such as, “have you seen online people talking about physically harming or hurting themselves?” a short introduction by the researcher

with Tharabun translating went over what the purpose of the survey was and what was contained on the information sheet. They were told that at any stage they were free to withdraw if they did not feel comfortable. The cover page of the survey also emphasised this. They are told that no names would be collected, that the survey is secret (anonymous) and to answer the questions honestly. There were only four or five students who did not complete the survey but this was due to technical problems outlined above. Over the course of three weeks 83 students between the ages of 12 to 18 completed the survey.

For the village school it was necessary for the researcher to relocate there for two weeks. The school roll showed that there were around 500 pupils but on any one day it looked like there were half of that. As in the case of the town school it was free to attend and the students came from the lower socio-economic groups. Many here (as well as at the Nong Khai School) are from farming families; work on rubber plantations, in construction and small restaurants.

Over the two weeks, 123 students took the survey. The same system that was employed in the other school was used here, i.e. only 10 students at any one time taking the survey. This means that in total there were 206 respondents which took the survey just over our target of 200.

4.1.4 Survey Findings

A comprehensive breakdown of the results was written up as a paper. It was initially turned down by, 'The World Conference on Information Security Education' (WISE 10) for being more research than education based. On the advice of the researcher's supervisor it was submitted and subsequently accepted at the 16th Annual Security Conference 2017 held in Las Vegas. It was presented there by the researcher's supervisor (details and abstract in Appendix E). Below is the analysis section reworded and reformatted to fit the style of this thesis.

4.1.5 Analysis

A total of 206 students aged between 12 and 18 took part during the months of November and December 2016 (see Table 4.1). They came from two schools in the North East of Thailand commonly known as Isan and it is one of the least developed areas of Thailand. The two teachers that assisted with this study helped to organize

the survey in their respective schools. One school was in Nong Khai a provincial border town and 83 of the 120 students took part in the survey. The other school was in a village just outside the town of Phon Phisai. Here, 123 of the approximate 500 students took part. Students of both schools came from mostly lower socio-economic backgrounds, their families mainly being rice and livestock farmers, shop and restaurant workers. Many children as well as going to school will do some kind of work as well, for example, working in their family's restaurant in the evenings.

Table 4.1 Student Breakdown by Age and Gender

		Age							
		12	13	14	15	16	17	18	Total
Gender	Female	4	13	28	24	17	15	6	107
	Male	3	24	19	20	11	12	7	96
	Transgender			1	2				3
	Total	7	37	48	46	28	27	13	206

(Herkanaidu et al., 2017)

4.1.6 Access and Use

Even though they are from a low socio-economic background, as can be seen in Table 4.2, 90% of young people in the survey had their own phone. This is due, in part, to the proliferation of cheap and second hand smartphones and also the relatively good mobile and Internet services to be found in Thailand. There was also a gender difference, 94% of girls had their own smartphone compared to 85% of boys.

Table 4.2 Access and Use: Comparison between EU Kids Online 2010 Study and Young People Online: Thailand 2016

Activity	EU Kids Online 2010	Young People: Thailand 2016
Own a smartphone	31%	90%
Use a computer to go online	58% shared PC 35% own computer	26% (At least once a week)
Use a notebook to go online	24%	22% (At least once a week)
Go online at home	87%	82% (At least once a week)
Go online in their bedroom	49%	71% (At least once a week)
Go online at school	63%	55% (At least once a week)

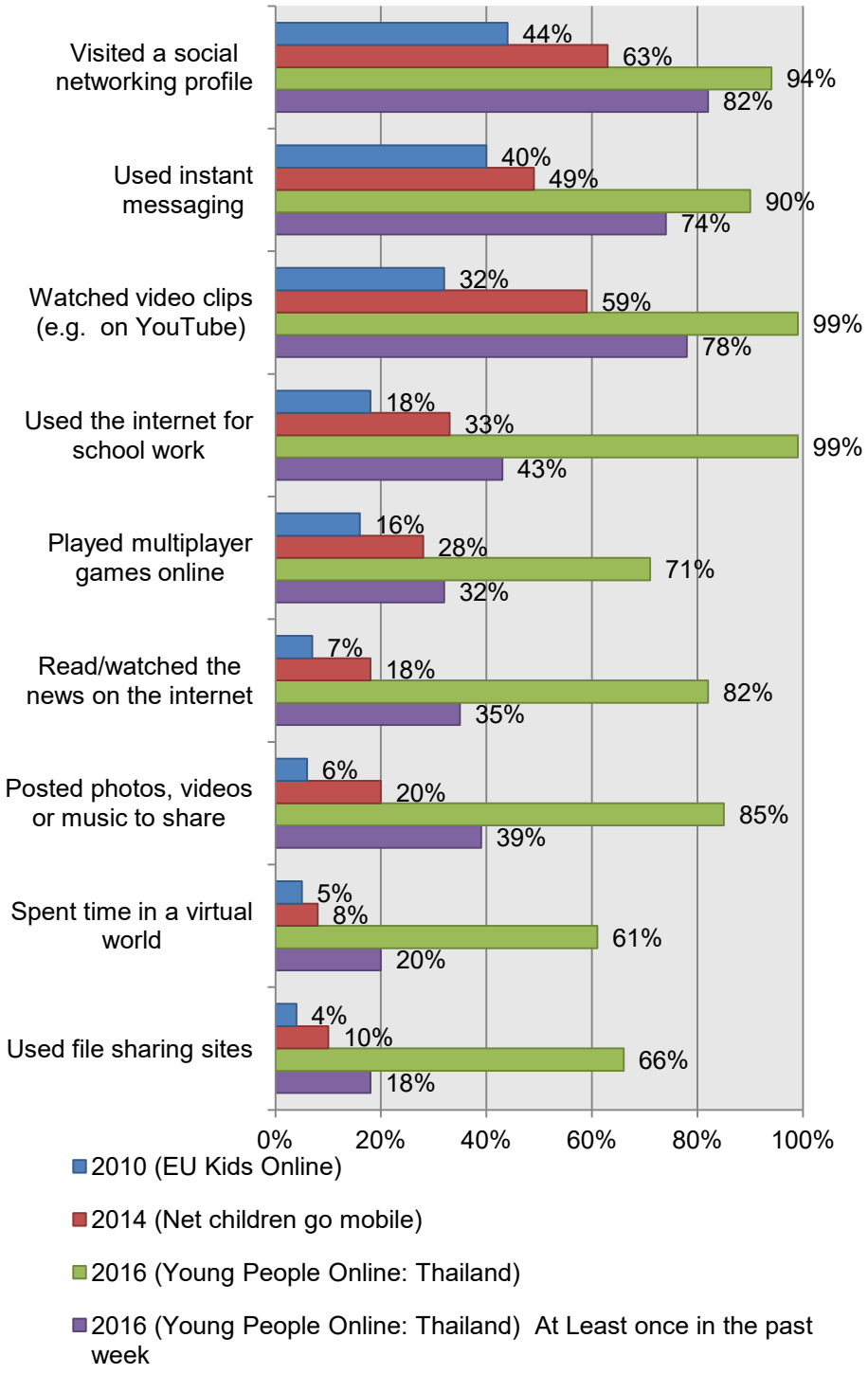
(Herkanaidu et al., 2017)

To reinforce smartphones as the main device for accessing the Internet just over a quarter, 26% used a computer to go online and 22% a notebook. This compares to the Kids online data from 2010 (Livingstone et al., 2011b, p. 21) whereby 58% accessed the Internet via a shared computer and 35% via their own personal computers.

In the Thai study the most common place they went online from was in their own home, 82% (71% in their bedroom) followed by 55% at school. The corresponding data in 2010 shows that young people went online at home more, 87% but fewer from their bedroom, 49%. From school the figure was 63%. The EU data given here are averages whereas in reality there was a wide variation between countries and different socio-economic groups within those countries. As an example, access from school in the UK in 2010 was 91% whereas in Italy it was only 36%, the latter lower than in Thailand.

This data clearly shows that these Thai students consume the Internet mainly via smartphones from home and to a lesser extent in schools. The majority do not have PCs or notebooks which are usually only encountered at school. One implication of using smartphones is that it is a private space as opposed to using a shared PC in the living room. This might lead to riskier online behaviour as the person may feel freer because they are not being watched over. This issue is discussed further below in Chapter 5 (section 5.3.6) as it was one of the questions explored during the interviews. Additionally, future studies will need to be carried out to determine whether being alone do lead to riskier behaviour and for it then to be incorporated into activities within an education programme.

Figure 4.2 below compares the Thai study with the EU Kids Online 2010 data and the more recent Net Children Go Mobile data from 2014 (Livingstone, Mascheroni, Ólafsson, & Haddon, 2014; Mascheroni, & Cuman, 2014).



Base: EU Kids Online & Net Children Go Mobile – All 11-16 year old children who use the Internet in Belgium, Denmark, Italy, Ireland, Portugal, Romania, UK.

Young People Online: Thailand – All students

Figure 4.2 Comparing Online Activities in the Past Month

(Herkanaidu et al., 2017)

One thing to note is that we have added activities that young people in Thailand did at least once per week as well as what they did over the past month. This gives us a better insight into how they are using the Internet. For example, while 99% of students said they had used the Internet for school work in the past month just 43% did so every week which is still higher than the 2014 figure of 33% and 2010, 18%.

If we take the most popular weekly activities in the Thai study they are the same as the most popular monthly activities from 2010 and 2014, namely

- visiting a social networking profile
- used instant messaging
- watched video clips

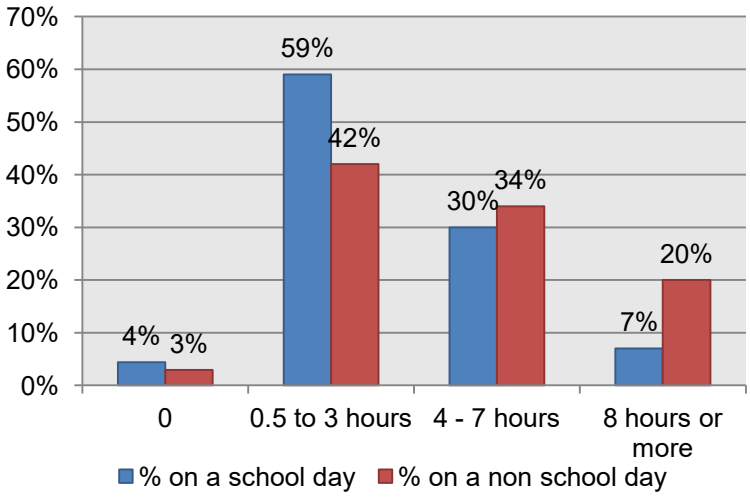
The first of these, “visiting a social networking profile” in the Thai case, refers to solely accessing Facebook via smartphones; 94% accessed it at least once during the month, 82% accessed it at least once a week and 65% said they accessed it every day or many times a day. This compares to 63% from 2014 and 44% in 2010. In both those studies participants were asked what activities they had done in the past month. It will be interesting to compare the Thai study to the next Kids Online study that (at the time of writing) is presently under way, i.e. to find out if European teenagers are using social media to the same extent as Thai teenagers are now.

While comparing the studies we need to keep in mind that the difference between the EU Kids Online study in 2010 and the Young People Online study in 2016 may partly be ascribed to the changing evolution of technology and its use. That is, smartphones are more generally owned and used by young people in 2016 than in 2010. The fourth stage of the EU Kids Online study looking at 2014-2018 is not yet released (at the time of writing) so will be interesting to compare the two studies once it has been.

No other social network comes close to the reach of Facebook in Thailand as it also has the largest presence in instant messaging with Facebook Messenger. From the survey, 90% had used it in the past month with 74% saying they used it at least once a week and 60% every day. The LINE messaging app is the only one that comes close with 84% using it at least once during the month, 52% at least once a week and 33% every day. The European studies in 2010 and 2014 had figures of 40% and 49% respectively for all instant messaging services.

For watching video clips the Thai study uses the data 'watching music and films online' to represent watching video clips online; 99% had done so at least once during the past month, 78% at least once a week and 53% every day. The figures for 2010 and 2014 are 32% and 59% respectively.

All other activities were much higher than the previous studies demonstrating that being online is an integral part of their lives and very much seen as the norm. This is reflected in the number of hours they spend online each day as shown in Figure 4.3.



Base: Young People Online: Thailand – All students: n=206

Figure 4.3 Number of Hours Spent Online

(Herkanaidu et al., 2017)

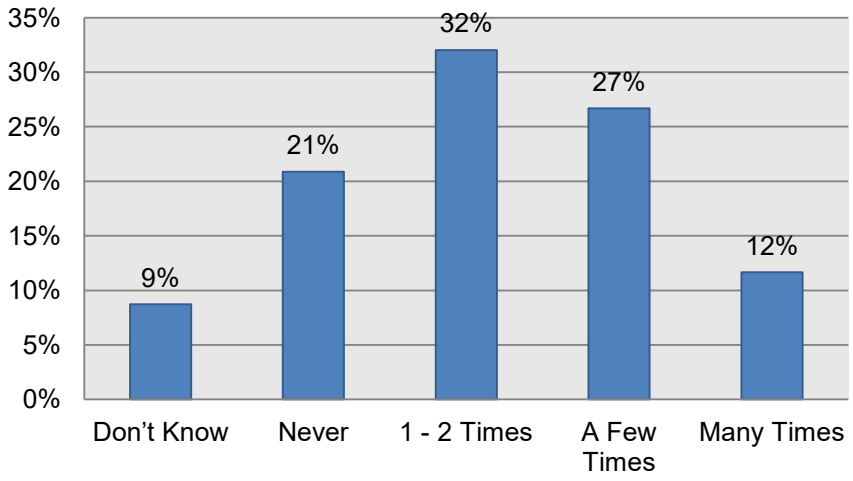
On a school day only 4% said they do not go online. Most, 59% spend between ½ an hour to 3 hours online with a further 30% between 4 and 7 hours. On a non school day 1 in 5 said they spend 8 hours or more online. If you add them to those who spend between 4 and 7 hours, it means more than half, 54% spend 4 hours or more online on a non school day.

4.1.7 Online Risks

Being online has many advantages like, widening your social circle, keeping up with the latest music, movies and news and improving your digital skills. However being connected all the time, inevitably, will lead to content (on purpose or by accident) that could potentially give rise to harm. Livingstone et al (2015) argue that often risks are interlinked and that:

> *"potentially harmful encounters online were as much or more a feature of the digital environment as they were a consequence of the child's activity, and further, that whether or not the risk (factors) resulted in actual harm was a question to be investigated rather than assumed"* (pg. 11).

The scope of the Thai study is on just quantifying the risk factors. Outcomes, i.e. benefits and harm of being online will be looked at in later studies. What can be said is that (as Figure 4.4 below shows) 71% of participants in the study had been upset at one time or another during the last year and just over more than one in ten, many times.

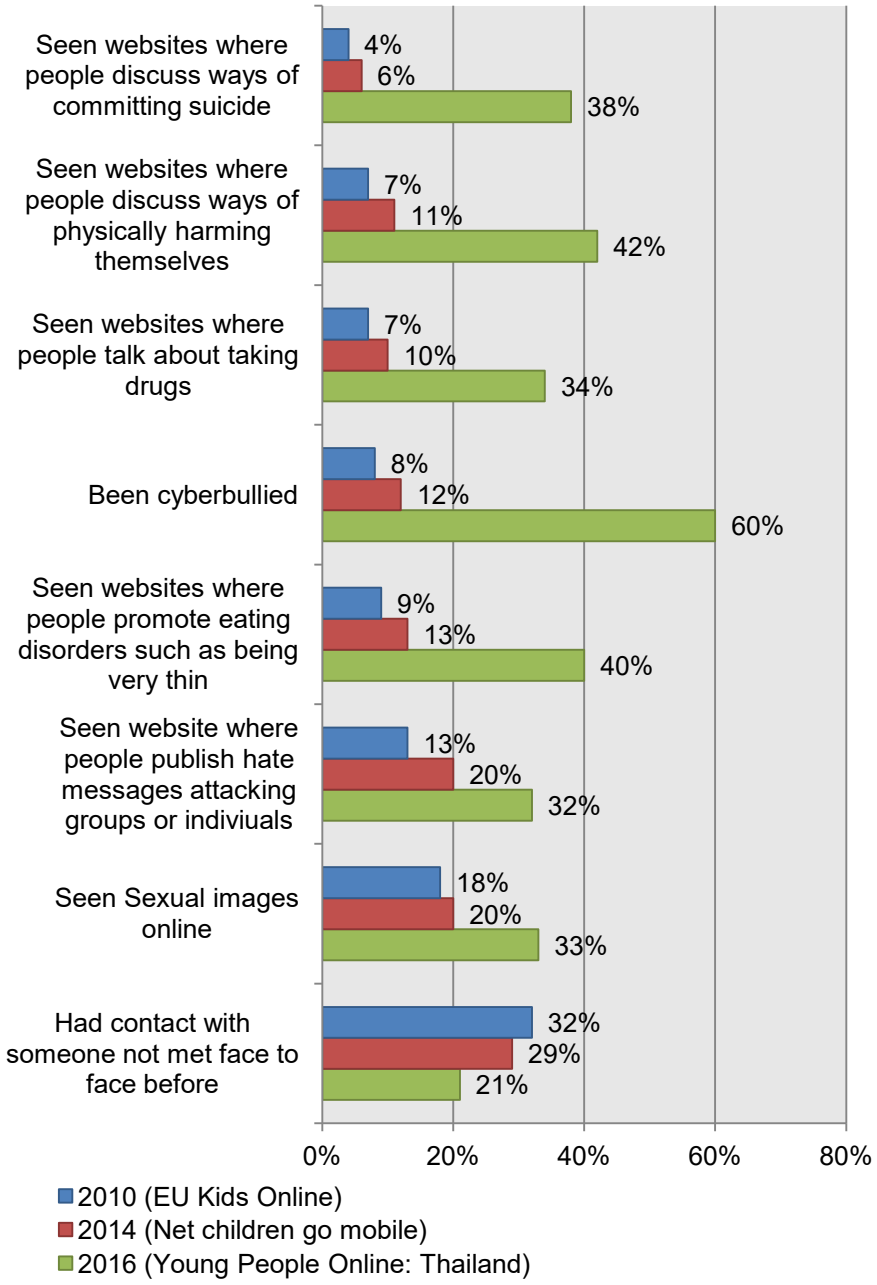


Base: Young People Online: Thailand – All students: n=206

Figure 4.4 Reply to "In the past 12 months, how often have you seen or experienced something online that has upset you?"

(Herkanaidu et al., 2017)

Some of the causes of these are given in Figure 4.5 below. As with Activities, we compare the Thai study with the EU Kids Online 2010 data and the Net Children Go Mobile data from 2014.



Base: EU Kids Online & Net Children Go Mobile – All 11-16 year old children who use the Internet in Belgium, Denmark, Italy, Ireland, Portugal, Romania, UK. Young People Online: Thailand – All students: n=206

Figure 4.5 Online Risk Factors

(Herkanaidu et al., 2017)

The Thai study suggests that students in Thailand have many online interactions that could lead to harm. The standout statistic is for the proportion of participants that had been cyber-bullied. It is derived from the question posed, “In the past 12 months has someone acted to you in a hurtful way online and if so, how upset were you?” 60% of

participants said that this had happened, with 18% being very upset by it, 31% a little upset, and 11% not upset. When asked if they had been the one that acted in a hurtful way, 44% admitted to doing so. These figures seem high but in the Thai context it is not so surprising. Sittichai and Smith cite a study conducted by the Wisdom Society for Public Opinion Research of Thailand in 2009 that 43% of students (aged 12 to 24) had been threatened over the Internet (2013, pg. 37). A study amongst LGBT students found that when asked, 55.7% had been bullied in the last month (Mahidol University, 2014). And at the nobullying.com website they state that bullying in Thailand is widespread and that it is seen, “as a normal experience children go through at schools to toughen up” (2015).

Compared to the 2010 and 2014 data the Thai study demonstrates that Thai students are exposed to more interactions and content that can potentially have a harmful effect. Two of the factors had significant gender differences. When asked if they had seen people talking about ways to be very thin nearly half of girls had, 49% whereas for boys it was 29%. For contact with strangers we substituted the question “Had contact with someone not met face to face before” with the more specific, “Sent a photo or video of myself to someone that I have never met face to face.” Just over 1 in 5 (21%) of respondents had. When they were asked if they had “Added people to my friends list or address book that I have never met face to face” 52% said yes. Girls were more likely to do this, 58% whereas for boys it was 46%.

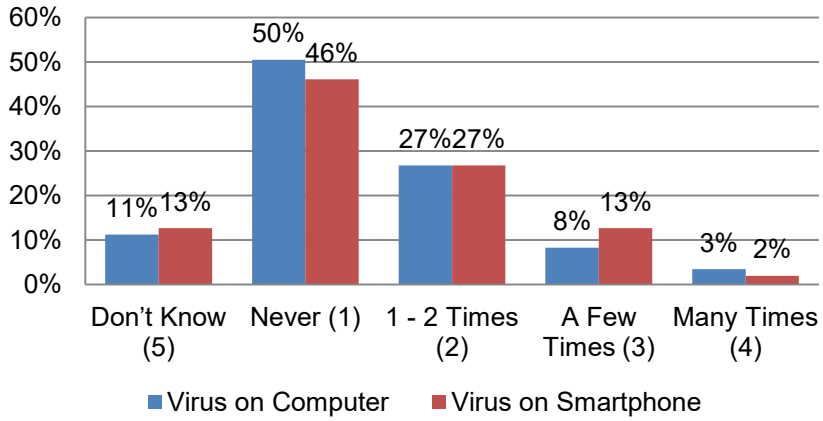
Of the others there were no significant gender differences, i.e. for viewing sexual images, hate messages, discussions of people physically harming themselves, committing suicide and talking about drugs. However, for all these factors at least one in three of the young people in the Thai study had encountered them online. This is significantly more than the 2010 and 2014 European studies.

The incidence of people using personal details of others was also high. When asked if in the past 12 months whether anyone had used their password to access information or pretended to be them, a third replied that this had happened to them. How and why this is happening will be a focus of follow up studies – for example, are they using easy to guess passwords? Do they share their passwords? Does the anonymity of the Internet give them a freedom to behave in a way that they would not normally act in the offline world? If this last one is true, it may in part, explain some of the other risk factors. As a flipside to this, a further revealing aspect was

that around a fifth of the participants responded positively when asked whether they had pretended to be a different kind of person on the Internet from who they really are. While this does not directly indicate whether they had used someone else's online identity or were just trying to convey a different persona, it does imply that the online context is making them feel at liberty to behave in a way that they would not do in the physical world – which is perhaps one of the key enablers of some of the undesirable behaviour that they are actually reporting elsewhere. As such, it highlights a potential need for further education to highlight that their online interactions and behaviour are still ultimately occurring with other people – even though they cannot see them.

Much of the above has been to do with the online safety and well-being of the individuals, but the survey also revealed a security risk to the devices they use. As Figure 4.6 shows, when asked, if their smartphone had got a virus in the past 12 months, 41% admitted to this (with varying degrees of frequency) with a further 13% who were unsure. For computers the figure was similar 38% and 11% respectively. One thing to point out though is that, as mentioned in Table 4.1 above, only 26% access a computer at least once a week and 22% a notebook. As such, their exposure to malware through this route would potentially be less frequent than via their smartphone.

In Chapter 5 below we will discuss computer security issues such as; how the devices get infected, how the students know they have been infected and whether they run anti-malware software. However, it is clear from the above findings that this represents another area in which further risk awareness and education would be of likely value.



Base: Young People Online: Thailand – All students: n=206

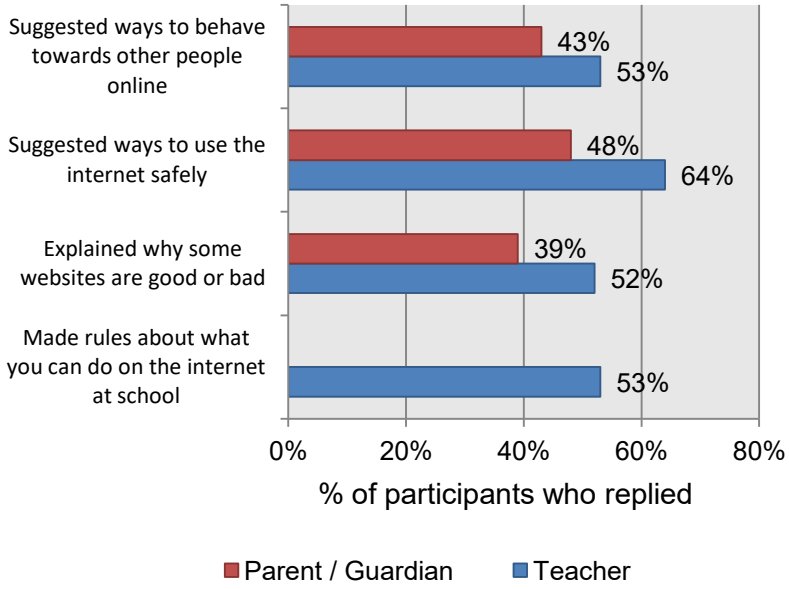
Figure 4.6 Reply to "In the past 12 months, how often has any of the following happened to you on the Internet?"

(Herkanaidu et al., 2017)

4.1.8 Mediation

When students were asked if they had talked to anyone if they got upset from an online interaction, 35% said they had talked to one of their parents and 13% to a teacher. They are, though, most likely to turn to one of their friends. Over half, 53% said they talked to a friend about their experience. In terms of education using their peers may be a good way to improve awareness of the benefits and harm of being online.

Parents and teachers do seem to play a role. Figure 4.7 below shows a few key questions that were asked relating to this. For example, students said that 48% of parents / guardians and 64% of teachers had suggested ways to use the Internet safely. At school, over half, 53% said that teachers had made rules about what you can do on the Internet.



Base: Young People Online: Thailand – All students: n=206

Figure 4.7 Mediation by Parents / Guardians and Teachers

(Herkanaidu et al., 2017)

There seems to be an inconsistency, however, between the online interactions of young people and the advice and rules they say they are receiving. As there are no national campaigns or education programmes that addresses online safety what guidance, rules and support do parents and teachers provide? This is discussed below in the interview stage in Chapter 5.

4.1.9 Summary of Nong Khai Surveys

This was a pilot study to find out how young people in Thailand interacted online. Primarily, it is to provide evidence based information in order to help design awareness raising education material. It looked at how and where they access, what apps / services they consume, potentially harmful interactions and lastly, the role of parents and teachers.

It was found that the majority of young people went online using smartphones. Facebook and Facebook Messenger are the most popular apps for social networking and instant messaging respectively and along with watching music and movies online form the basis of their digital lives.

Not all interactions are positive. Bullying is a concern offline and now it is also a concern online with over half reporting that they have been upset by others. Just under half admitted to being perpetrators. Over a third of the participants had seen discussions or images relating to; sexual images, hate messages, being thin, committing suicide and taking drugs. Furthermore, a fifth had sent photos or videos to a stranger online (refer back to Figure 4.5). A third also had others use their passwords or pretended to be them online. Lastly, just over 40% said that their smartphone had got a virus.

When they did have a negative experience and become upset they were most likely to speak to friends about it, followed by parents and teachers. The young people did say that they got advice from parents and teachers on how to be safe online, about what websites were good or bad, and just over a half agreed that there were some rules on what they can do online at school.

While useful insight was gained on the online activities of young people in Thailand there are a couple of considerations to keep in mind. Firstly, compared to the European studies, the sample size of 206 is relatively small and, secondly, the participating students were drawn from just two schools. While both cater for children from lower socio-economic families one was based in town and one in a village setting. We cannot generalise the findings to the whole of the Thai population, but they are likely to be representative of a defined subset of it. What we can say is that, the results above suggests that there is a need to raise the awareness and skills of these young people to enable them to protect themselves and have good online experiences. It will be left to follow up studies and education programmes, discussed below, to determine the impact of the exposure to all these diverse but inter-related factors.

4.2 Phase 2: Roi Et Surveys

The researcher was invited by Dr. Kriangsak Srisombut, Vice President for Student Development at Roi Et Rajabhat University to carry out the research in Roi Et Province. He had three school directors enrolled on postgraduate studies at the university that were interested in taking part in the research. There was an initial meeting where the exact nature and goals of the research were outlined. As in the Nong Khai surveys consent had to be sought from students and their parents /

guardians. They all agreed that they would try to do this ahead of the planned visit. As the province is located around 177 miles (284km) south of Nong Khai it was decided that the researcher and Tharabun would stay at the university's hotel for two weeks. One of the schools is located on the university grounds and the other two are a short drive away. To make the most of the opportunity a select number of students were chosen for one-on-one interviews and as we already had results from the Nong Khai surveys, online safety workshops would be carried out at each of the schools following the action research method. The next section will focus on just the survey and compare it with the Nong Khai results. Later chapters below will discuss the interviews (both in Nong Khai and Roi Et) and the online safety workshops.

4.2.1 Roi Et Survey Overview

In the last two weeks of May 2018, from the three schools, 146 students took part in the survey. At the first school students were given the information sheet and consent forms. Most filled out the student forms during the class while the researcher with Tharabun translating explained the nature of the survey and that they would be asked to answer some sensitive questions and that at any stage they would be free to stop and not continue. The next day all 48 students (from two classes) brought back the signed consent from their parents / guardians. At the other two schools the information sheet and consent forms had already been distributed to the students and parents / guardians. This meant that all that was needed in this respect was to collect the signed consent forms.

4.2.2 Technical Considerations

At the first school there were 18 computers available for the survey. Since carrying out the Nong Khai survey the researcher found out that the University of Plymouth hosted the LimeSurvey platform. The survey was transferred to the University server and this proved to be more reliable as all 18 computers could be utilised concurrently. The other two schools had far fewer computers but the researcher made use of the four mini iPads that the University had loaned which proved very helpful and saved a lot of time. The researcher had also created a Firefox Portable folder which could be copied onto all machines. This folder contained the Firefox browser and a link to the survey. This meant there was no need to configure existing

browsers and once the survey was completed it could be simply deleted from the computer.

4.2.3 Survey Results and Comparison with Nong Khai

All three Roi Et schools were private fee paying schools though the students attending them were from a mixture of middle income and lower income socio-economic groups. Some students had parents that were teachers or local government officers and others had parents that were drivers or supermarket workers. This is in slight contrast to Nong Khai where most were from the lower socio-economic group. Some of the differences in the statistics may reflect this. Another factor is time. The second survey was carried out almost 18 months after the first which in terms of technology and the Internet is a substantial amount of time. Again this may be reflected in the statistics.

Table 4.3 Young People Online: Nong Khai - Roi Et Comparison

Description	2016	2018	Combined
Smartphone ownership	Girls: 94% Boys: 85%	Girls: 90% Boys: 91%	Girls: 93% Boys: 88%
Top 5 apps			
Beetalk	9%	6%	8%
Instagram	20%	22%	21%
LINE	33%	42%	37%
FB Messenger	60%	75%	66%
FB	65%	76%	70%
Top activities			
Visited a social networking profile	82%	86%	84%
Used instant messaging	74%	84%	78%
Taken a photo and posted it online	39%	33%	36%
Used the internet for school work	43%	22%	34%
Watched video clips (e.g. on YouTube	78%	78%	78%
Played multiplayer games online	32%	60%	43%
Read/watched the news on the internet	35%	39%	37%
Dark Side of the web			
Upset by something online	70%	67%	69%

Been cyber-bullied	60%	49%	55%
The cyber-bully	44%	38%	41%
Seen websites where people discuss ways of physically harming themselves	42%	38%	40%
Sent personal information to someone that I have never met face to face	26%	19%	23%
Seen Sexual images online	33%	32%	32%
Seen website where people publish hate messages attacking groups or individuals	32%	27%	30%
Seen websites where people promote eating disorders such as being very thin	40%	34%	37%
Seen websites where people talk about taking drugs	34%	34%	34%
Seen websites where people discuss ways of committing suicide	38%	34%	36%
Facebook			
Students that use fb daily	65%	76%	70%
Students that use fb messenger daily	60%	75%	66%
Have an account	Girls: 96% Boys: 93%	Girls: 96% Boys: 94%	Girls: 96% Boys: 93%
Av. No. of friends	Girls: 1538 Boys:886	Girls: 1567 Boys:890	Girls: 1548 Boys:888
Between 2000 - 5000 friends	Girls: 33% Boys: 11%	Girls: 32% Boys: 15%	Girls: 33% Boys: 13%
Daily activities			
Like	54%	60%	57%
Groupchat	43%	61%	50%
Freecall	42%	60%	49%
Comment	27%	25%	26%
Check-in	25%	26%	25%
Tag	24%	23%	24%
Shared a celebrity's Story	20%	21%	21%
Cyber-bullying			
Bullied			
By mobile phone	41%	33%	38%
On FB	30%	30%	30%
In a group chat	19%	22%	20%

By Text message	16%	16%	16%
On a media sharing platform	12%	12%	12%
By IM	8%	10%	9%
By email	5%	9%	7%
On a gaming website	8%	14%	11%
Bully			
By mobile phone	48%	50%	49%
On FB	32%	37%	34%
In a group chat	24%	38%	30%
By Text message	17%	23%	19%
On a media sharing platform	13%	16%	14%
By IM	9%	12%	11%
By email	8%	12%	10%
On a gaming website	9%	21%	14%

(Young People Online Surveys 2016-2018)

Table 4.3 above was created to produce a set of infographics (see Appendix D) to publicise this research and was sent to various bodies including UNICEF Bangkok and the Global Kids Online project. It shows that smartphone use amongst boys had grown since 2016 from 85% to 91%. The figure for girls actually fell, from 94% to 90%. Overall though the combined figures of 93% for Girls and 88% for boys highlight the very high smartphone use amongst all young people in Thailand.

The 2018 Roi Et surveys also reveal the increasing dominance of Facebook and Facebook messenger as the main social network and messaging app respectively. For both, three out of four respondents said that they used them daily. In the 2016 Nong Khai survey it was six out of every 10 people that engaged with Facebook. Gaming especially multi-player online games had increased in popularity too. In 2016, 32% said they played multi-player online games every day whereas in 2018 this nearly doubled to 60%. Some activities did not change like watching video clips online. In both sets of surveys 78% reported they did this daily.

In terms of negative experiences the key statistics were similar except for the number of people that had been cyber-bullied; derived from the question, “In the past 12 months has someone acted to you in a hurtful way online and if so, how upset were you?” In 2018 just under half, 49% said they had been bullied down from 60%.

The combined result of 55% represent over half of all respondents and as such, according to the survey, is the most challenging issue facing young people in Thailand. Interestingly, the figures for admitting to being the bully, i.e. acted in a hurtful way to others, was narrower, 44% (2016) and 38% (2018). The combined result of 41% means that four in 10 admit to acting as a bully. The top ways were by mobile phone (49%), on Facebook (34%) and in group chats (30%).

Overall, 69% of respondents had seen or experienced something online that had upset them. This includes; looking on websites where people discuss ways of physically harming themselves (40%), websites that promote eating disorders (37%), websites where people discuss committing suicide (36%) and websites associated with drug taking (34%).

One consistent finding from the two set of surveys is the gender difference between males and females for the number of friends. The average number of friends for boys in 2016 was 886 and in 2018, 890 and combined 888. For girls the figures are very much higher 1538 (2016), 1567 (2018) and combined 1548. Additionally, 33% of girls had between 2000 – 5000 Facebook friends. The proportion for boys were far fewer, 13%. The reason(s) behind the high number of friends for both genders and whether it plays a role in their online well-being could be a topic to be explored in future online safety workshops.

4.3 Conclusion

The 352 students that took part in the surveys were from five schools in two provinces. The Nong Khai surveys took place at the end of 2016 and the Roi Et Surveys the last 2 weeks of May 2018. Apart from a few notable differences (see above) the results obtained were consistent. Therefore we can be fairly confident that it is representative of at least this subset of young people in Thailand. Future studies will be able to use it as a baseline for their work and may be of particular interest for longitudinal researchers looking at changes in attitudes and behaviour over time.

The next chapter will present the finding of the interviews carried out in Nong Khai and Roi Et provinces. This is the qualitative element of the research. The survey results in this chapter relates to numbers and percentages which provides an important overview of the state of young people’s online interactions. To get a full

picture, however, and understand the reasons behind some of the numbers it will be useful to ask the young people themselves. For example, in our survey nearly half of respondents said that parents had suggested ways to use the Internet safely. This figure rises to almost two thirds with respect to teachers. If there are no national programmes or messaging to do with online safety what is the nature of the advice they receive? This and other key questions will be explored next.

5. Interviewing Young Online Users in Thailand

5.1 Overview

In Figure 3.2 above we visualised the relationship between the quantitative and qualitative aspects of this research. The two approaches are complimentary in that the qualitative element (in-person interviews) builds upon the quantitative element (survey). They are both influenced and to a large extent directed by the literature review (Chapter 2) and by ethical considerations. The survey generates a large amount of data that requires analysis. The interviews offer an opportunity to explore interesting findings as well as seemingly anomalous or contradictory findings. For example, what determines whether a person shares passwords or keep them private. The interviews serve another purpose in that we get first hand stories on young people's online experiences. The survey data will tell us the percentage of people that have been upset by an online interaction, the interviews will describe the experience of what led to them being upset and as such provides valuable context which we can then draw from when developing education material.

The first stage of interviews took place in December 2017 a year after the initial survey. It was conducted at one of the schools that took part in the Nong Khai survey. Together with one of the young English teachers, Kru Tem, we interviewed 13 students over a one week period. The researcher spoke in English, the interviewees in Thai and the teacher in the middle doing the translation back and forth. Most interviews lasted around 10 minutes and were recorded using the voice recorder app on a smartphone.

The second stage was in Roi Et in May 2018 and 12 students participated, a few from each of the three schools that took part in the survey. This time the translator was Tharabun who was helping conduct the surveys at the same time. For both of the interview stages the students had signed the consent form (as well as their parents / guardians) and were told that if they felt uncomfortable answering any questions they could simply say that they preferred not to answer or to stop the interview altogether. We also told them that we would record their age and gender but not their names. The two teachers helping seemed to have very good rapport

with the students and all spoke quite candidly. This could also be a reflection of Thai Culture where hierarchy is very important and if a teacher asks you to do something generally a student will comply (see section 6.4.5.7).

The first set of interviews was transcribed using a free application called, Listen n Write. The second set was transcribed using the University of Plymouth's provided application, Audio Notetaker. All transcribed interviews were fed into NVivo 11, a qualitative data analysis tool which was again provided by the University. See Appendix C for an example of a transcribed interview.

5.2 Interview Questions

The questions were designed with two aims in mind. Firstly, to find out a little about their family circumstances which will give us an indication of their socio-economic status. This may or may not be a factor in their online behaviour and attitude. Secondly, to try and add the social context to the key findings of the Nong Khai surveys. The structure of the interviews was formed around a set of pre determined questions and depending on the replies follow up questions would be posed to get further insight and / or clarification. The set of questions posed were:

- What do you do on the Internet?
- Do you have a computer or laptop at home?
- How much time do you spend on a smartphone / online?
- Has anything bad happened online?
- What mediation is there by parents or teachers?
- Do you know about computer viruses?
- Do you share passwords?
- Do you feel freer to do what you want on the Internet when alone?
- What is your favourite thing to do online?
- Do you have a question for me or want to say something else?

5.3 Interview Findings

As we shall see below the interviews proved very useful in contextualising the survey findings. Figure 4.8 below is a word cloud of the top words that the students relayed personally and through their translator during the interviews. It lists the most

common words in their replies and as such gives us a visual snapshot of some of the most important elements of their online experiences.

Figure 4.8 Word Cloud from Interviewee Replies

5.3.1 Family Background

The first stage of interviews took place in a rural village school. The students came from families involved in farming (rice, rubber), working in shops, restaurants and the building trade. Some were living with grandparents as one or both of their parents had moved to another province (or even out of the country) to find work. The students themselves worked on their family farm, shop or restaurant and very few had a computer or laptop at home. By contrast the students in Roi Et came from families with more diverse backgrounds. As well as food sellers and shop workers

there were teachers, office and bank workers and local government officials. Of the 12 students eight had access to a desktop, laptop or tablet at home as well as their own smartphone.

However there were no discernible differences between the two groups in their replies to questions on their online behaviour and experience.

5.3.2 Online Activities

All interviews started off by asking the student what they did on the Internet. Many of the replies were similar in that at first they would give you a reply that they think you want to hear. It is another example of Thainess where the respondent tries to figure out what the questioner want and give an answer accordingly. This is expounded upon below in the culture section, 6.4.5. In this case they answered variations of, “search for information,” “for learning,” “for homework.”

Most students went on to say that they used Facebook and Facebook Messenger primarily for chatting. This included keeping in touch with relatives in other provinces and abroad. The other answers they gave reflected the survey findings; Google is the primary tool for searching, YouTube is used for watching video clips and listening to music and online multiplayer games like ROV (https://rov.in.th/) is very popular with both genders.

For time spent online this ranged from 1 to 2 hours during the week to 12 hours at the weekend. Most said that they spent 3 to 4 hours during the week and 5 to 6 hours during the weekend. This largely reflects the finding of the survey.

5.3.3 Online Experience

In the survey 69% of young people said they had been upset by something online. The students spoke about their own experiences including cases of cyber-bullying. Below in Table 5.1 are their replies as relayed by the translators:

Table 5.1 Negative Online Experiences

Negative Online Experiences
Photo someone hit a dog and parent he's out [with] their children. She tell me that she think it is not good but she understand the parents maybe they have some reason to do that.
There is like a case someone that she don't know like send a naked photo in like a Facebook messenger.
She got like a virus on Facebook that automatically shared a naked video so she don't know why. She thinks it's a virus so she go to set her privacy.
A boy fight and like a girl hit each other.
He saw many bad things on the Facebook. For example violence video.
Yes, his friends send some bad word but just for fun.
She has seen violence video and naked video and naked photo.
She saw some friends they have agreement and another side post like a bad status and other side comment but give bad comment.
She had a bad experience about sharing password when she share with her friends and her friends go to her Facebook and post some bad status.
Bad news about criminals about porn about fighting.
She found bad live video she has seen criminal video about bad mother bully her kids.
He a little bit seen bad picture or video for some time because he said he not always use facebook only sometime but he had bad experience because sometime he post his own picture on Facebook his friend comes to talk to him about his picture as ugly.
His friend use to be hacked facebook account and the criminal used that account to borrow some money from the other one.
[Student indicate arm being cut] Interviewer: Self harm? Interviewee: Yes.
She use to see live video about self harm.
He said he use to use BeeTalk, you know BeeTalk? It finds the people near their location, it shows somebody about 100m if you're online at the same time someone he never know before asked him to talk and they talk about 1 or 2 days..... After 2 days that one he is a ladyboy. He wants to see him he tried to invite him to go out to see and want to do something with him and do a bad thing but after that he is afraid. That one will give him 3000 baht for the meeting. He decide to block.

Naked photos and to a lesser extent naked and violent videos were the main cause of upset for both girls and boys. When asked how they felt the responses ranged from just ignoring it, to bemusement as to why that kind of content is on there, to being very upset and deleting it from their feed and blocking the person that had shared it. One of the reasons they cite doing this is that they do not want others to see it on their feed and then be viewed as a bad person. Two of the interviewees (one boy, one girl) spoke about seeing self harm videos. The boy just smiled and shrugged when asked how he felt but the girl said she felt fearful afterwards. The last entry in Table 5.1 is a boy retelling a bad experience he had using the chat app

BeeTalk. Someone tried to lure him into a meeting and promised to pay him money. At that point he got fearful and blocked the person.

5.3.4 Passwords

When asked if they shared their passwords the replies were mixed. Those that did not share any of their passwords said that it was private, a secret to not tell anyone. A few feared that others would do something bad, “She afraid somebody will access her facebook and then use facebook to do a bad thing.” Others have had a bad experience and now do not share, “his computer use to be hacked so after that he doesn't tell anybody about his password.”

For those that do share passwords it is normally with a boyfriend or girlfriend and / or sometimes with close friends. Some replies were, “trust, she want him to trust in her,” “she exchange her password between her and him she know his password he know her password,” “first she trust in her friend she let them access her account to see something to help or to talk to share something at school.”

The idea that to really trust someone means you should share your password is something that can be explored in a future workshop. It also partly explains why in the findings of the Nong Khai survey (Chapter 4) a third of respondents had said yes when asked whether anyone had used their password to access information or pretended to be them in the past 12 months.

5.3.5 Viruses

The students were asked if they knew about computer viruses and most said that they did. Though, when probed it turns out that they have heard the term but not much more than that. Typical responses were, “he thinks that when he use computer and it slower than before ... it's maybe because of virus,” “she heard of it but she doesn't get it,” “virus infect her smartphone she had to reset restart more times and she said virus can make computer slowly, broken.”

A few did try and define it, “she knows, it is something to destroy, break our computer,” “it's a program that destroy to destruct to the computer, bad software.” And even fewer knew if they had an anti-malware solution installed or not, “she knows about computer viruses because customer come with usb to put at computer

at photo shop and infect her computer," "she has anti-virus on computer. Her father make automatic anti-virus like anti-usb virus automatically."

The level of knowledge around computer viruses was very basic amounting to not much more than having heard the name over the Internet and that it is bad for computers and smartphones. Most did not know if they have anti-malware installed or not and just assumed that they had a virus if their device started to run slow like this student, "virus infect her smartphone she had to reset restart more times and she said virus can make computer slowly, broken."

Part of the reason for this lack of awareness of online safety is that they are not exposed to such information either at school or elsewhere. Only one student said they had seen something on awareness; it was to do with Facebook privacy settings, "privacy and protect and not share everything public." No one else had seen anything either in traditional media or online.

5.3.6 Online Behaviour When Alone

One of the questions that was as a result of the Nong Khai survey findings is; does the anonymity of the Internet give them (the young people) a freedom to behave in a way that they would not normally act in the offline world? This would help explaining why young people seem to engage in potentially harmful online behaviour. The researcher had trouble formulating a question that the translators could understand and was not sure the correct meaning was being passed on to the students. The question posed to the students was all slight variations of the following:

- Does he / she feel more free when they are alone to do things on the Internet, than when they are with family or people around?
- If he/ she is by themself do they feel free to do things and watch movies they want?

The phrase, 'feel more free' was problematic as it was being interpreted as 'allowed to' and the typical answers received were, "yes she feels free when she is alone," and "feel free. She feel free to use her smartphone to visit anything such as talking to friends, boyfriend or see some website about DIY do it yourself like how to do makeup."

Some of the answers hinted at the communal nature of Thai people (section 6.3.5.9), “he said that he feel good when he use Internet and there are many friends around,” “he like use Internet with friends because when he is alone he just watch alone but when he is with friends he can share and watch together and tell how he feel about this on the Internet,” “... it feels free better to stay with friend because if stay with friend, friend will come to see what we are doing,” “when she is alone she feel free to do everything that she wants to do but sometimes she doesn't want to stay alone she wants to stay with her friends it's bore sometime she stay only one.”

However, some responses did reveal some insights, “sometime, she is happy to be alone because she doesn't want anyone to see what she is doing,” “when she is alone she feel very free because nobody comes to see what she is doing or come to joke her or come to observe her but website that she visits such as watching online movie, series, Korean,” “he feels free, he use to watch video of porn, violence on YouTube.”

5.3.7 Mediation

The interviews revealed that there is very little in the way of parental or teacher mediation (see Table 5.2 below). This is not only as a result of a lack of technical knowledge (on the part of parents and teachers) but is a consequence of the hierarchal nature of Thai society. This will be discussed below, in the culture section, 6.4.5.7. In practice, what this means is that young people will seldom bring up issues with their elders. When asked who they told if they were upset by something online typical replies were, “she don't tell anyone,” “he just ignore it,” “she said that she doesn't tell anyone if it is not important and is not related with her but she tell family that something important to her.”

In the Nong Khai survey findings 48% of students reported that their parents / guardians had given them advice on how to use the Internet safely. The corresponding percentage for teachers was 64%.

Table 5.2 Parental / Teacher Advice

Parental Advice
Don't chat with some boys don't use spend too much time on playing game.
Her parents tell her don't do bad thing or don't share some bad news or some bad video.
Her father tell them that don't accept people they don't know and don't reply on chat with people they don't know, just block or delete.
His father tells him don't take too much time to play smartphone or Internet because it will have a problem or affect to his study.
Look there's bad things, just look, just know, just see but don't follow don't do that.
Her parents give her rule or advice if she sees some bad one or stranger be careful, can talk but have to careful herself, if someone especially stranger try to invite her to go out the parents say stop talking. And they give her advice don't do bad behaviour on the Internet such as don't wear revealing clothes.
Teacher Advice
Teacher talk about the advantage of the Internet and the bad side of it the Internet.
Yes teacher tell her don't use Internet for doing bad thing use Internet for doing some good thing.
Don't go to some bad websites because it is not good, maybe some teacher will punish.
Don't spend much time on the Internet.
Some teacher tell him that don't spend much time on the Internet and use in a good way like a for homework or for something that make him better

In terms of rules these are few and far between. For one student, “her father gives her a rule to play Internet on mobile phone for some time.” Another father forbade his daughter from using Facebook because, “it's dangerous online he afraid his daughter will be seen by someone online.”

In only one of the five schools was there a policy on smartphone use. Students, “in the morning they leave their smartphone at the basket of the teacher at lunch they can bring it back to play after lunch they bring it back again and before back home they go to bring it back from the teacher.” In other schools whether students were allowed to use smartphones was up to individual teachers, “no rule for using. If have something to use smartphone to do exercise then teacher allow them to use their smartphone.”

5.3.8 Good Experiences

Students were given an opportunity to talk about their positive experiences online so as to not only having to talk about negative issues. When asked what they liked about being online, most like the social aspects like chatting, “she feel very happy to have like a Facebook because it's for free you know if she don’t have like credit

some money to call another friend she can use like Facebook for free to chat with friends," and "she use benefit of online using messenger to connect with friend connect to talk to teacher about learning."

Other responses were; "searching for information and makes them relax," "he like Internet because it's easy to use he doesn't have time to go to like a library to find some information it is easy to use," "listening to music," "watch cartoon, play game."

A few talked about the positives and negatives, "he said that there are two sides of using Internet bad and good. For good he said that it's good he can see the worldwide but it is quite dangerous because you don't know people well," "she said what's good from the Internet she can use the Internet such as messenger, she can connect to her friends to talk about something or do some work together but the bad thing about the Internet is during she is using the computer maybe some bad thing such as porn picture or video come to her screen. Sometime she stay with her younger sister. They ask her what's that she says it's not good for young children to do that."

5.4 Conclusion

The 25 students that took part in the interviews give us an insight into how they use the Internet by sharing their online experiences. If something has upset them online they are more likely to ignore it or tell a friend rather than talk to a parent or teacher. Advice they received were basic in that they are told to only use the Internet for good things and not bad things. They did not receive online safety awareness education at school and only one student had seen something online about this issue. Some students shared their password with their boyfriend / girlfriend or a close friend as a show of trust. Knowledge of computer viruses and computer safety was very low. We did not really find out whether being alone influenced their behaviour online. This will be one of the topics that the education framework described in the next chapter can help address.

The interviews together with the surveys have revealed many facets of Thai young people's online behaviour along with their motivations of why (or why not) they engage in certain practices.

In the next chapter we move on to the setup of this research's proposed education framework. It builds upon the Young People Online model and the findings of the surveys and interviews.

6. Young People Online Education Framework

6.1 Overview

The proposed education framework is derived from the literature review, the Young People Online model (Figure 3.6) henceforth referred to as the YPO model and the above analysis of the surveys and interviews with students. It is designed to be an integrative security awareness framework for emerging digital cultures borne from evidence based research. The emphasis will be on attitudes and behaviour of young people rather than the specific technology they use. This is a reflection of the fast moving technological landscape on the one hand and on the other that our attitudes and behaviour remain largely the same. This will mean there will be less reliance on technology. As this framework is specifically for emerging digital cultures the education material should be able to be delivered in areas where technological resources / infrastructure may be fairly basic.

The main objectives will be to raise awareness of online safety issues and to build young people's resilience to better manage the risks and benefits of being online. Here we should be precise by what we mean by online safety awareness and resilience so the following descriptions are offered:

- **Online Safety Awareness:** This is synonymous with Internet safety awareness. It is both the knowledge of and skills required in relation to the risks and benefits of being connected to digital services or apps such as, email, social media, online games etc.

- **Resilience:** This is the ability of an individual to cope with potentially harmful experiences. Livingstone et al. (2015) describes it as "a dynamic process and can only be developed through exposure to risk or stress" (p. 3). They go on to say that, "resilience is also a multi dimensional construct, including both psychological variables (i.e., emotional development) and coping skills (i.e., capacities for adequate coping). It is this combination of elements that explains why some children who have been exposed to

adversities are better capable of dealing with stressful or traumatic life events" (p. 3).

6.2 Young People Online Education Framework – High Level Overview

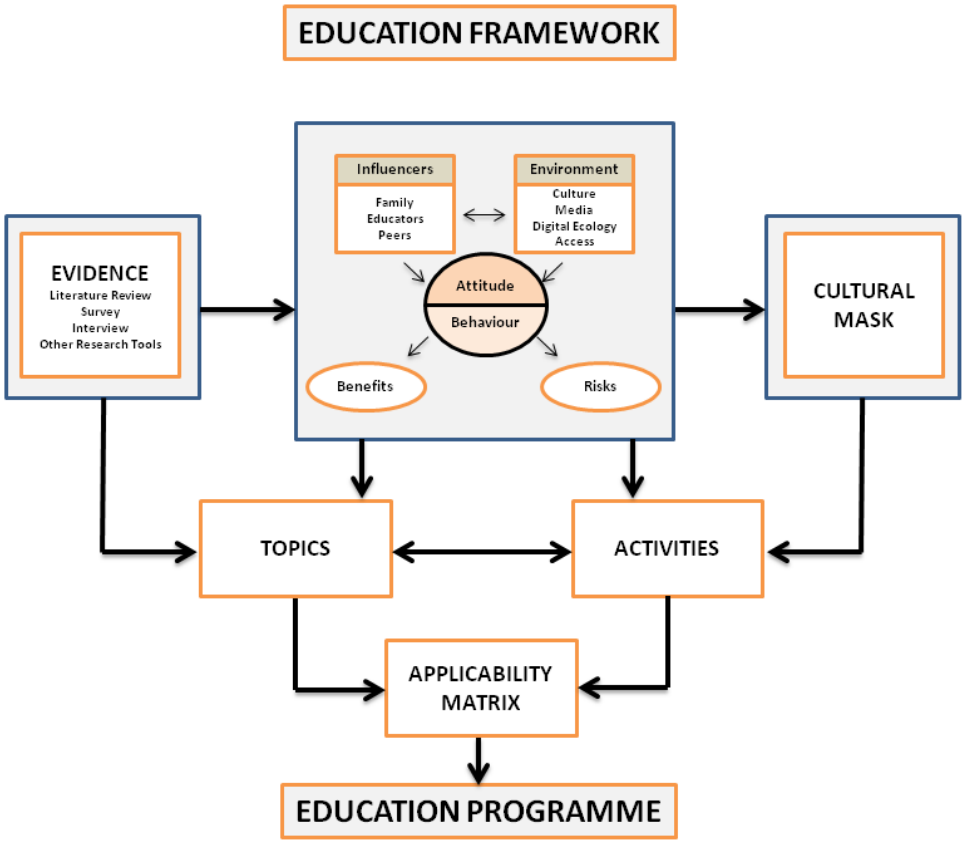


Figure 6.1 YPO Education Framework

Figure 6.1 gives us a high-level overview of the proposed YPO Education Framework. By working through the YPO model (explained in detail below) it will inform us of the cultural norms of the society including political and social factors. In the framework this is described as a ***Cultural Mask*** as it will influence how and what kind of activities can be carried out. For example, in our case study LDC, Thailand, it is against the law to say anything negative about the royal family (lese majeste law). A class on 'what and what not to post on social media' should probably highlight this as an issue.

All LDCs and indeed all countries face similar online safety issues but as the literature review above shows the weightings of each concern can differ. To recap, gaming addiction is a big issue in China whereas in South Korea it is the general addiction to the Internet that is of concern. In Thailand the emphasis is on being a good digital citizen i.e. be polite and only do good things online. For this reason, in each LDC, where the framework will be applied to, it should not be assumed that we know what the issues are. By following the YPO model we can review existing research that others have done (like GKO studies in Brazil and South Africa) or do original research (like in Thailand) to find out what are the most important issues facing the LDC are.

6.3 Applicability of Education Framework

The proposed education framework seeks to address the issue of online safety awareness teaching in LDCs. It could be adapted to other contexts as many of the factors such as teaching approaches are pertinent to other topics. It could also be adapted to non LDC countries too however this may be moot as there is already an abundance of online safety awareness educational material and messaging. Furthermore, the devisers of the material and their intended audience are within the same cultural makeup so the factors in the framework that involves culture may not be so important. Of course, if the school (or other educational institution) is multi-ethnic and multi-cultural than working through the steps of the framework may help to deliver more effective classes and avoid inappropriate or culturally insensitive material.

Whether the framework is applicable will be determined largely by the evidence, either by existing research and education programmes as determined by a literature review or if none exists or insufficient by conducting original research. In Thailand this was done by use of surveys and interviews as described in Chapters 4 and 5 respectively.

We will now explore the other segments of the framework starting with the YPO model and concluding with the resulting applicability matrix from which an education programme can be derived.

6.4 Young People Online Model Revisited

In the YPO model there are two sets of factors that help determine the attitudes and behaviour of young people, Influencers and the Environment. The Influencers are young people's peers, family and teachers. The Environment includes, culture (social, political), media, the digital ecology and access. These will be discussed in turn below in relation to our LDC case country, Thailand. If we were to apply the framework in another country the steps would be the same. How much work would be involved would depend on the state of research within the country and how far developed online safety awareness education, policy and messaging are.

6.4.1 Influencers

The Surveys and interviews that were conducted have given us an insight into how young people are influenced by their peers, parents / guardians and teachers. One of the main findings is that bullying is a concern online just as it is in the offline world with 55% reporting that they have been upset by an online interaction. They also engaged in potentially harmful risky behaviour. Over a third of the participants had seen discussions or images relating to; sexual images, hate messages, being thin, committing suicide and taking drugs. Furthermore, a fifth had sent photos or videos to a stranger online, a third had others use their passwords and just over 40% said that their smartphone had got a virus.

When they did have a negative experience and become upset they were most likely to stay silent and only sometimes speak to friends about it. They rarely spoke to their parents or teachers about something that upset them online. The young people did say that they got advice from parents and teachers on how to be safe online but during the interviews we found out that this just amounted to being polite and to not do anything bad. None of the schools that participated in the research taught online safety which was not surprising as there are no local or national programmes (to the researcher's knowledge) in Thailand. What they do have are ad hoc rules which are usually left up to individual teachers to administer.

6.4.2 Environment: Access

The majority of young people in Thailand go online using smartphones. In the survey, 93% of girls and 88% of boys had their own smartphones. Internet and Wi-Fi

access are widely available in Thailand. The YPO surveys carried out in Nong Khai (2016) and Roi Et (2018) were mostly in agreement with a few notable exceptions which can be seen in Table 6.1 below.

Table 6.1 Accessing the Internet in Thailand

Source: YPO Surveys 2016-18

Access	Female		Male		Sub -Totals		Total
	NK	RE	NK	RE	NK	RE	
From Bedroom	82%	81%	58%	77%	71%	78%	74%
From Home	85%	92%	77%	90%	82%	91%	86%
At School	60%	25%	51%	31%	54%	29%	44%
At a Cafe/Eating Place	20%	29%	23%	19%	21%	23%	22%
Used a Computer to Go Online	27%	17%	24%	33%	26%	27%	26%
Used a Notebook to Go Online	23%	23%	22%	23%	22%	23%	23%

NK: Nong Khai = 206 Students

RE: Roi Et = 146 Students

Combined around three quarters of young people accessed the Internet from their bedroom and girls more so than boys. In fact eight out of 10 girls in both rounds of surveys used the Internet from their bedrooms. For boys, 58% in Nong Khai said they accessed the Internet from their bedroom whereas in Roi Et it was much higher at 77%. When it comes to going online at home in general Nong Khai boys did so less than the other groups at 77%, though that still is almost eight out of 10. In Roi Et however for both girls and boys it was over 90%. From this we can surmise that more young people are going online at home and in their bedrooms. Above, in section 5.3.6 'Online Behaviour When Alone', we discussed whether being alone led to more risky behaviour. The fact that it seems that they are spending more time at home and in particular in their bedrooms where they are more likely to be online alone should be explored further within the education framework to find out if this leads to riskier behaviour.

For going online at school, in Nong Khai the figure was 54% and Roi Et 29%. All five schools had limited resources to computers and the Internet. However, in Roi Et

students had less time on the computers plus there were stricter rules using smartphones especially at one of the three schools where students had to hand in their phones.

Most students lived in villages where there are fewer cafe type meeting places. Therefore, it is unsurprising that only one in five students went online in such places. In urban areas cafes are plentiful and you can find many young people in them to be with friends and family and often doing their school assignments too.

Across the surveys the use of computers and notebooks to go online ranged from 22% to 33% and this is usually at school. Their online life is predominantly via their smartphones.

6.4.3 Environment: Media

Traditional media like television, newspapers and magazines are starting to give way to online media (see next section) but they still play an important part in Thai life. The Bangkok post, (Kewaleewongsatorn, 2013) reported that, “consumers are viewing more content on computers, smartphones and tablets, but TV remains the dominant platform.” It goes on to give figures from the market research firm, ACNielsen to highlight this; TV ownership is “99.6% of the 22.688 million households, up from a 92.8% rate in 2008” (Kewaleewongsatorn, 2013).

For newspapers and magazines the online news website, Asian Correspondent, provides the National Statistics Office of Thailand’s bleak outlook, “readerships for newspapers and magazines dropped by seven percent between 2013 and 2015. Only 50.1 percent of Thais aged 15–24 said they read magazines in 2015, down from 61.7 percent in 2013” (Thitipol, 2016).

6.4.4 Environment: Digital Ecology

Thailand has a technologically advanced digital and cellular infrastructure. Figure 6.2 below uses data from Internet World Stats (2018) and a Bangkok Post article by Leesa-Nguansuk (2016). It shows that out of a population of 69 million there are 83 million phone subscriptions. This means there are many people with more than one phone (or have a two sim phone), maybe one for business and one for personal use. Of the 69 million, 82% are connected to the Internet and 67% or two thirds have a

Facebook profile. The average for Asia is just over half at 52% (Internet World Stats, 2018).

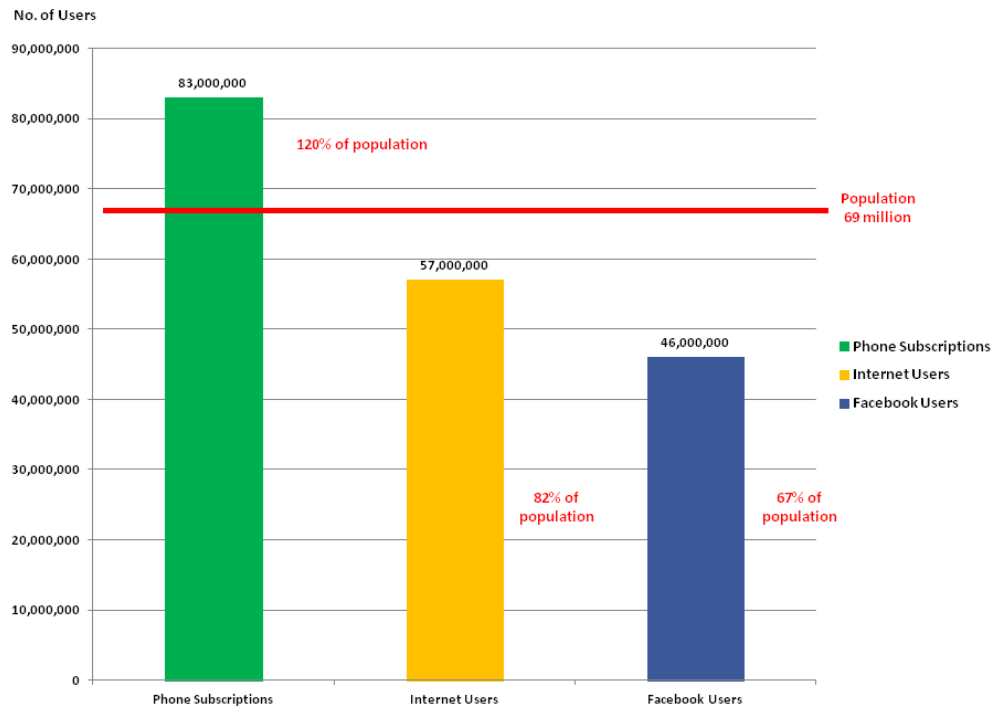


Figure 6.2 Phone & Internet Use in Thailand

One of the reasons for the abundance of phone subscriptions is that smartphones and the contracts that go with them are relatively cheap in Thailand. A quick check at one of the many online traders, Invade IT:

https://www.invadeit.co.th/category/smartphones/sort/price/asc/

shows their cheapest phones at 2000 to 4000 baht around 50 to 100 British Pounds (See Figure 6.3). These, as well as second hand phones, are plentiful in the many small booths located in shopping malls.

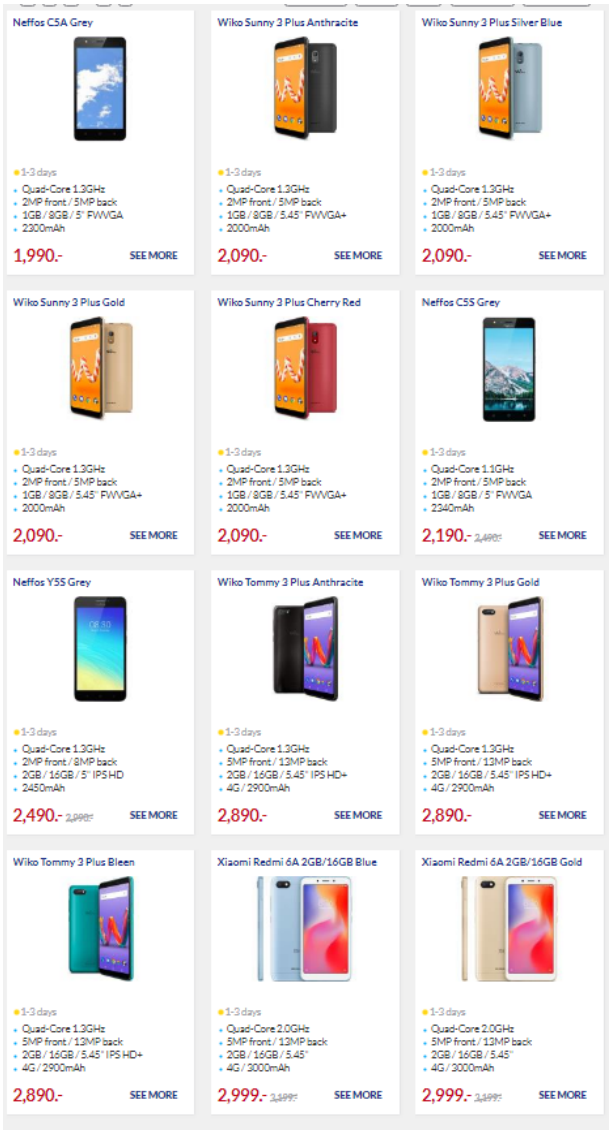


Figure 6.3 Smartphone Prices in Thailand (2019)

(https://www.invadeit.co.th/category/smartphones/sort/price/asc/)

Most places including shops, restaurants and cafes offer free WiFi. For connectivity on the move they use their cheap data plan. At the time of writing, the Thai mobile network operator, Dtac offers a monthly 10GB data plan for 250 Baht which is about six British pounds per month, https://www.dtac.co.th/en/move-to-dtac/.

In summary, Thailand has a well connected and engaged digital population. This is true in the rural as well as the urban areas of the country. It is therefore not a surprise that around nine out of 10 young people (see Table 4.2 above) own their own smartphone.

6.4.5 Environment: Culture

The term **'Culture'** has many different aspects to it. It includes; customs, religion, institutions, music, clothes and much besides which collectively is seen as the 'way of doing things' or the 'norms' of a specific group of people. Hall (1976) argues that amongst the varying interpretations of culture they all share three main features:

- it is not innate but learned
- the various facets of culture are interrelated
- it is shared and in effect defines the boundaries of different groups

Every aspect of who we are is affected by culture:

> *"how people express themselves (including showing emotion), the way they think, how they move, how problems are solved, how their cities are planned and laid out, how transportation systems function and are organised, as well as how economic and government systems are put together and function"* (Hall, p.16-17, 1976).

In the rest of this section we take theoretical constructs of culture and relate them to how they manifest in our case study country Thailand and in particular in the education arena. For similar studies in other countries the same theories can be used to determine their cultural make up and the type of learning styles and methods that may be effective.

6.4.5.1 Buddhism

The overwhelming majority of Thais are Buddhist. They practice a form called Theravada Buddhism, 'teaching of the elders' (Browell, 2000) and it:

> *"manifests itself in terms of respect for the elderly within families and society in general. Buddhism is a philosophy, a way of life and a code of ethics that cultivate wisdom and compassion rather than a religion in the true sense of the word"* (Browell, 2000, p. 109).

Browell goes on to note that:

> *"in Thailand, the relationship between Buddhism and the national identity and culture has always been important and continues to be so. It has been a significant intellectual and cultural influence and a feature of Thailand's development"* (p. 110).

It is omnipresent in Thailand. Many Thais visit their temple on a regular basis. Monks also make visits to homes, schools and places of business usually for good luck ceremonies. If you have a new home or open a new business or a teacher is leaving their school a ceremony will usually take place where monks give their blessings.

Monks themselves have special status in Thai society. They have seats reserved on public transportation and at airport waiting lounges where they are the first in line to board their flight. While many are monks for life others do it for a short time as a spiritual retreat, perhaps for a few months before marrying or starting a new job.

6.4.5.2 High-Context, Low-Context

Thailand is known as the 'land of smiles' (Browell, 2000) but what is less known is that Thais smile when they are happy, sad or angry. To show negative emotions such as anger or frustration is to, 'lose face'. The concept of losing face is closely aligned to 'kreng jai' explained below. It is an example of what the influential anthropologist, Edward T. Hall (Hall, 1976) describe as a facet of a high-context culture. Knutson et al. (2003) explains that:

> *"high-context, collective societies display unique communication characteristics, quite different from low-context, individualistic cultures ... relatively little information is contained in the explicit message and members of high-context cultures exhibit considerable sensitivity to nonverbal cues. Low-context cultures, the opposite of high-context cultures, rely on the explicit message to carry most of the information"* (p. 65).

Then citing Deng (1992) who says that:

> *"individualistic, or low-context cultures indicate a preference of direct and overt communication style, confrontational and aggressive behaviors, a clear self identification, and a priority of personal interest and achievement. Collectivistic, or high-context, cultures manifest a preference of indirect and covert communication style, an obedient and conforming behavior, a clear group identification, and a priority of group interest and harmony"* (p. 38).

High-context countries tend to be Asian or South American countries whereas low-context countries are European or North American (Knutson et al., 2003). This though is a rough rule of thumb and within each culture and its institutions the balance of high-context to low-context behaviour will differ.

6.4.5.3 Hofstede's Four Dimensions of Culture

After his analysis of over 116,000 employees across 72 countries between 1967-1973 (Eldridge & Cranston, 2009, p. 70) Geert Hofstede introduced the four dimensions of culture. These dimensions are measurable and therefore cross-comparable between countries. The four dimensions are:

- Measure of individualism
- Power distance (How unequal a society is)
- Measure of Masculinity (and femininity)
- Uncertainty avoidance

This represents a more nuanced way of representing high-context and low-context cultures. High-context countries like Thailand have a low measure of individualism, that is to say, they are more collectivistic. Power distance is a way to measure how hierarchal a society is and its adherence to authority which we discuss below in section 6.4.5.7.

Uncertainty avoidance is related to power distance and measures "the extent to which the members of a culture feel threatened by ambiguous or unknown situations" (Hofstede, G., Hofstede G. J., & Minkov, 2010, p. 191). Cultures that strongly try to avoid uncertainty are more likely to adhere to rules and regulations. Thailand in, Hofstede et al. (2010), uncertainty avoidance index is in the high mid range, 64 whereas the UK is 35 and Russia is 95. Eldridge & Cranston (2009) adds that, "high uncertainty avoidance can also result in a preference for structured learning situations in the classroom" (p. 72).

The measure of masculinity versus femininity, as Hofstede et al. (2010) argues, is a little tricky as what constitutes their respective traits can be construed differently in different cultures. Taking this on board, they reason the following:

> *"A society is called masculine when emotional gender roles are clearly distinct: men are supposed to be assertive, tough, and focused on material success, whereas women are supposed to be more modest, tender, and concerned with the quality of life. A society is called feminine when emotional gender roles overlap: both men and women are supposed to be modest, tender, and concerned with the quality of life"* (Hofstede et al, 2010, p. 140).

In this respect, Kainzbauer and Hunt (2016) argue that in Thailand, “values such as caring for others and their feelings, building and maintaining social relationships, expected reciprocity and obligations in personal relationships, and decision-making based in intuition rather than logic all point to a feminine-type culture” (p. 60). In Figure 6.4 below, Hofstede et al. (2010) plots the measure of masculinity versus individualism. It shows that an individualistic country can be feminine or masculine and that the same is true for collectivist countries. Thailand is clearly seen as a collectivist and feminine country.

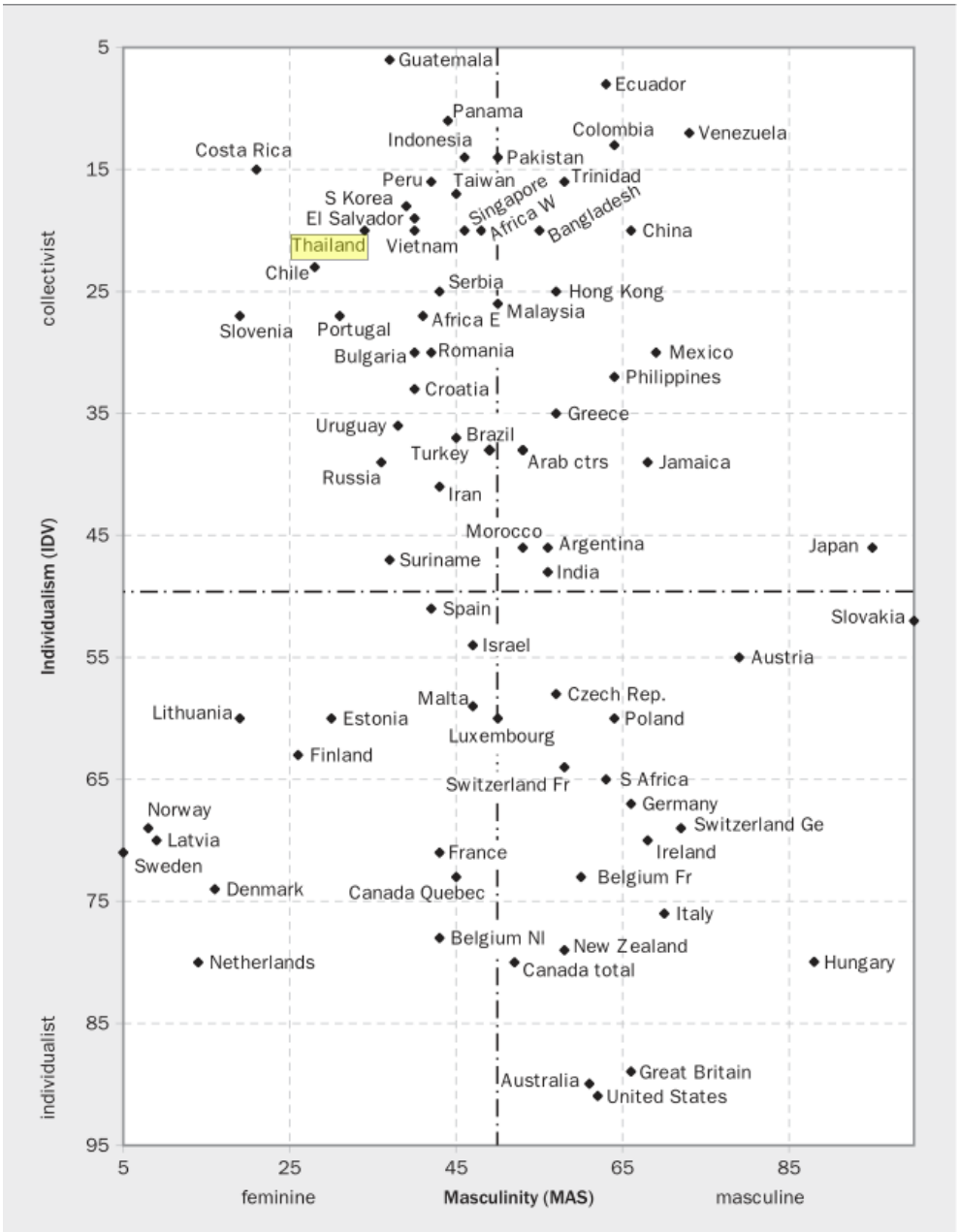


Figure 6.4 Masculinity versus Individualism

(Hofstede et al., 2010, p 147)

6.4.5.4 Concept of Time

Once we understand whether a culture is high-context or low-context we can plan and accommodate accordingly. High-context cultures value interpersonal relationships to a great extent. They very much nurture social relations and harmony. One consequence of this is that time keeping become less important. Hall (1976) called this Polychronic or P-time, where interaction and process are more important than getting something done at a particular time. That 'thing' will get done but maybe not exactly when scheduled.

Low-context cultures are generally more Monochronic or M-time oriented (Hall, 1976). Here, agendas and schedules are important. Low-context cultures tend to adhere more to what is said, there is less room for confusion or misunderstandings. If a meeting is scheduled for 9 am then it will take place at that time.

In Malaysia and Ecuador, two high-context countries the researcher took part in events that demonstrated their very generous and hospitable nature. The events did not run perfectly on time but no one seemed to mind. In contrast, similar events held in countries like Germany and the UK were equally as successful but there was far less pomp and ceremony and generally everything ran according to schedule.

6.4.5.5 Iceberg Model of Culture

The work of Hall led to more focus on the study of cross-cultural communications. He described culture as having visible and invisible parts. This inspired the iceberg model of culture. Figure 6.5, below is one version of the iceberg model. Here it is visualised as three layers. The surface layer is the visible, the observable expressions of culture like, music, food and clothes. This is the etiquette level where one can learn the do's and don'ts of a particular culture. In Thailand, for example, a definite don't is to touch another person's head.

The second level is the values or understanding layer (shallow culture in our diagram) and lies just beneath the surface. At this level, a visitor if they spent enough time learning can start to understand and value the reasons behind some of the ways the culture work. In our example of not touching a person's head this is because it is the highest most important part of the body. In Buddhism it is the sacred part and the font of knowledge.

The third level is the sensitivity or empathy layer (deep culture in our diagram). This can only come about after spending a considerable amount of time truly embedded in a culture. When you reach this level you not only understand the reasons for why you do or don't do certain actions, it becomes part of who you are. At this level you would not even contemplate touching a person's head as it would just feel so wrong.

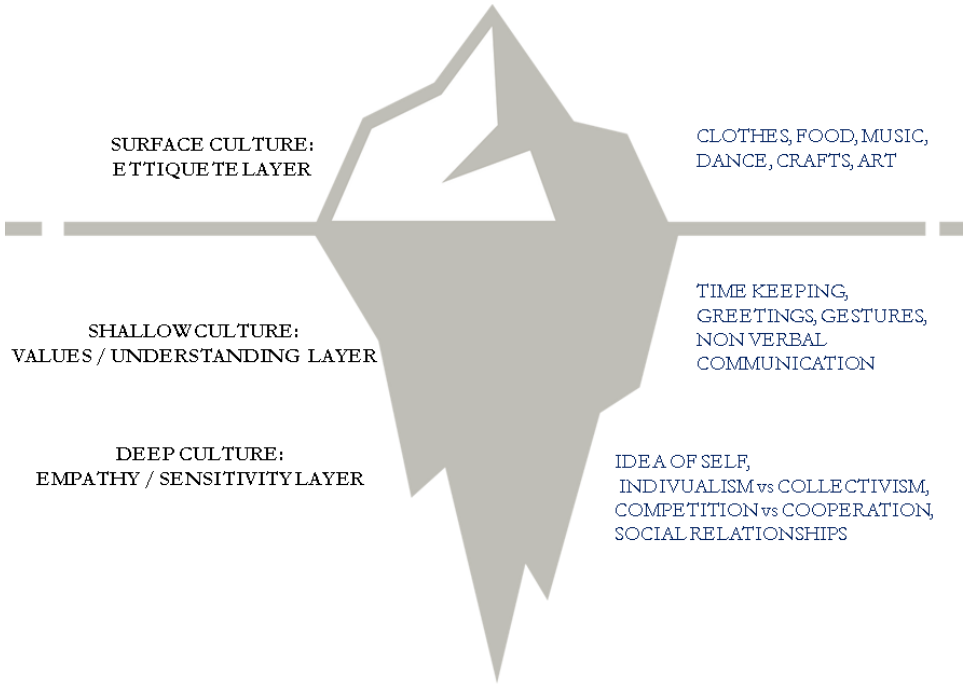


Figure 6.5 Iceberg Model of Culture

(Vector Image by Darwin Laganzon from Pixabay)

6.4.5.6 Kreng Jai

In a high-context country like Thailand most people will go out of their way to avoid conflict or perceived conflict in order to keep the social harmony. Kainzbauer and Hunt (2016) put this down to the concept of 'kreng jai' which is "an unwillingness to disturb others, especially people more senior" (p. 63). There is no direct translation in English to convey the exact meaning, it's associated to not wanting to inconvenience or cause discomfort to others.

This can manifest in different ways. For example, a teacher may ask their students to come to class a little earlier the next day, say at 9 am and they will all say yes. Come nine the next morning, no students! This scenario actually happened to the researcher when he was managing a student camp. The mistake was to ask the students a direct question, "can you come early tomorrow?" The students all

answered yes because that was the answer the teacher was looking for. To say no would have meant their teacher losing face and as explained below this would have made them feel uncomfortable. Instead they chose to keep the teacher happy, at least until 9 am the next morning. As it transpired the reason they could not make it was that the camp had over 30 students and the morning rituals of cleaning, showering and eating breakfast meant that they would not be ready until at least 9:30 am. In a low-context environment the students would have simply explained why they could not attend earlier than 9:30 and it would have been accepted. In Thailand, kreng jai usually gets in the way of this. All is not lost however; there are ways to navigate around this. Rather than asking a direct question that will elicit a yes or no answer it is far better to ask questions in a roundabout manner, “maybe you would like to start at 9am tomorrow morning?” This gives the other person(s) a way out. They might come back and say, “maybe 9:30 is better?” When a Thai person uses the word ‘maybe’ they really mean ‘can’. For example, if they ask you, “maybe you are hungry and want to have lunch” what they really mean is that “I am hungry let’s have lunch!”

6.4.5.7 Hierarchy

Kreng Jai is associated with another facet of Thai society, the importance of and adherence to hierarchy with the king and the royal family at the top. When first meeting a Thai very often one of the first questions they will ask you is your age. This is not considered rude, as in some cultures, what they want to find out is how to address you. If you are:

- older then they will be deferential to you
- both about the same age then you treat each other as equals
- younger you are expected to be the deferential one

Occupation and rank also determines your status and how others treat you. For their paper on, ‘Meeting the challenges of teaching in a different cultural environment – evidence from graduate management schools in Thailand’, Kainzbauer and Hunt (2016) interviewed several foreign and Thai university teachers that had received good scores from student evaluations. The purpose was to find out how the teachers adapted their teaching to suit a Thai classroom environment. The Thai teachers that

took part had taught abroad as well as in Thailand so would be tuned in to the differences in the Thai context. They found that:

> *"In Thai classrooms (at all levels of education), the teacher is the authority-figure .... Thai culture is characterized by high power distance such that the teacher is held in great respect by the body of students. In Thai language, university teachers are called 'Ajarn' which carries the admiring connotation of "master", in a similar sense to "sensei" in Japan. At the same time the teacher has high levels of "duty of care" (in loco parentis) towards the students and particularly towards their successful learning"* (pp. 60-61).

Teachers have very high status but they are held responsible for the success or otherwise of their students. Kainzbauer and Hunt (2016) found that, "teachers are perceived to be responsible for the learning success of their students ... if students fail the exam, the teacher did not do a good job" (p. 64). Therefore it is imperative for teachers to monitor their students carefully to ensure they succeed. This can be difficult as you do want to criticise your student directly as they will lose face. Instead you have to find alternative ways as this respondent teacher in Kainzbauer and Hunt's (2016) study relates:

> *"You never say 'you have screwed up'; you may say 'oh boy, did we screw up, didn't we? ... maybe I did not show you what I really wanted, therefore you could not really give me what I wanted'. I found them quite responsive to that. You are making a joke but they understand that the joke is actually serious. But you say it with a smile, and you say it softly"* (p. 63).

The teacher needs to be 'jai dee' (kind hearted) and 'jai yen' (cool, easy going) and not 'jai ron' (hot hearted equivalent to hot headed). Thai's express all emotions and feeling in terms of 'jai' (heart). For a teacher to be 'jai ron' would mean they have lost face, lost control and as a consequence students will be less open to them.

Teachers who are jai dee and jai yen are more successful and do not only limit their time with the students in the classroom but make themselves accessible at other times which encourages students to be more comfortable and open (Kainzbauer & Hunt, 2016, p. 63).

6.4.5.8 Sanuk

When Thai's are evaluating whether a task or activity is worthwhile they ask whether it is 'sanuk' (fun). Kainzbauer and Hunt (2016) from their research found that this "is a key attribute of Thai culture and involves a light-hearted approach to life. From a Thai perspective, something that is not fun is not worth doing" (p. 62). One of the teacher replies from their study notes:

> *"I say 'look we got some serious things to achieve in the class, but along the way we are going to have a bit of fun'. And I try to put it in that context. I try to assure the students that we will have a bit of fun"* (p. 62).

Another teacher had to change their style because their class was being perceived as too difficult. They recall, "I feel that if it is too easy it is impossible to have the motivation to learn. Fun with no challenge is boring, if there is too much challenge and no fun they give up" (p. 63). Getting the right balance is key to classroom management and educational outcomes.

6.4.5.9 Collectivistic Style of Thai Learners

When you enter a Thai classroom as a foreign teacher there is a formal greeting that always take place. In each class there is one student that acts as the class captain and they are the ones that start the process as described here from:

http://www.english-room.com/classroom_thai.html

> Class Captain: "Please stand up." The students stand up.
> Everyone: "Good morning teacher!"
> Teacher: "Good morning everyone. How are you?"
> Everyone: "I am fine thank you, and you?"
> Teacher: "I am fine thank you. Please sit down."
> Everyone: "Thank you." The students sit down.

At the end of class they will all stand up again and say, "Thank you teacher see you again next time."

During the lesson itself it is very noticeable that when you are asking one student a question others are very eager to help them if they are stuck. If you ask a student to write something on the board and they are struggling, others will come and try to

help. If you ask them to write something down they are always looking and checking each other's papers. Of course this is a generalisation but in the researcher's experience this is fairly typical. Therefore, it is better to use this to your advantage and make group work the norm:

> *"In a group-oriented society such as Thailand this allows students to choose group members that they already know and with whom they feel socially at ease. Thai students tend to be very shy and reluctant to share their opinion for fear of losing face (sia naa) in front of others. Another reason for their reluctance to speak up is that they do not want to be seen as "aw naa" (showing off) which has a negative connotation in Thai classrooms"* (Kainzbauer & Hunt, 2016, p 64-65).

A teacher that comes in and is very strict will not be seen as jai dee or jai yen and students will be very reluctant to engage. At the end of the class if the teacher asks, "did you understand?" whether they did or not they will reply yes. This teacher will not be successful, though they might not realise this.

It is not enough to be a teacher in the classroom. To be successful a teacher needs to socialise (within school) with students and for them to get to know you and be at ease with you. The researcher remembers an experienced teacher who went to a rural village to teach some young people on how to be forest guides. After a couple of weeks it was clear that things were not working out. The teacher complained that students were walking in and out of class and sometimes they would not be there at all. They ended their stay prematurely. The villagers had found the teacher to be very strict whereas actually they had many chores on their farms as well as other activities. It was not possible to attend classes all the time. Sometime after, a young volunteer with no teaching experience went to the same village. Rather than having formal lessons she integrated herself within the community, learnt a bit of their language and taught ad hoc i.e. whenever they were free to learn and not just in a classroom setting. By being 'jai yen' she was much more successful then the experienced teacher.

6.4.5.10 Mai Pen Rai

One last aspect of Thai culture that will help a visitor is the concept of 'mai pen rai'. The direct translation is 'it does not exist' and is equivalent to 'no problem' or 'no

worries'. It is used in many situations in order to keep social harmony, avoid conflict and to not lose face. For example, if someone is late to meet you then you should be jai yen, smile and say, mai pen rai. This is even if you are not feeling particularly jai yen.

6.5 Cultural Mask

6.5.1 Definition & Role within the Education Framework

A central proposition that this research is putting forward is the idea of a **'Cultural Mask'**. Above in section 6.4.5 we defined the many facets that collectively make up culture as 'ways of doing things' that are the 'norms' for a specific group. The term 'mask' in its literal sense, "is a piece of cloth or other material, which you wear over your face so that people cannot see who you are, or so that you look like someone or something else, "(https://www.collinsdictionary.com/dictionary/english/mask). In our framework the cultural mask has a double meaning. First, it refers to how culture acts as a mask to the understanding of people within a country grouping. It hides (to the outsider) what is really going on in any given situation. For example, Hall (1976) an American, recalls how he had a particularly perplexing experience in Japan. While working there and staying in hotels, without notice, he would be moved to another room. This could happen several times during a stay. Part of him thought that there must be something going on that he did not understand but another part, which he calls the 'mammalian part', thought he was being treated shabbily. It was only a few years later that a friend told him that once you check-in at a hotel you are no longer an outsider; you become part of the family and are treated as honoured guests and is actually a mark of respect. Whereas, with his American mindset being moved around (especially without any notice) was seen as a lack of respect. Interestingly, the larger hotel chains which catered more for international clienteles noticed that they did not really like being moved around and thus did not accord this mark of respect to them.

The second meaning follows on from the first in that once we understand that this cultural mask exist we can use it as a filter for all information. We can use our cultural models (above in section 6.4.5) to help us navigate and disseminate the information to construct the best educational pathways leading to more effective learning. In a low context, M-time country where agendas and schedules are more

closely adhered to you can plan to teach in one way. For a high context, P-time country it may be that you may need to adhere less to timetables and more on social aspects of learning. There are many other aspects to take into considerations such as; the 'do's and don'ts', how to address people appropriately and the teacher – student relationship dynamic.

In the YPO Education Framework the cultural mask plays an important role. All topics and activities that will form the education program have to be filtered through the lens of the culture it operates in. Hall (1976) puts it this way:

> *"Each culture is not only an integrated whole but has its own rules for learning. These are reinforced by different patterns of over-all organizations. An important part of understanding a different culture is learning how things are organized and how one goes about learning them ... the reason one cannot get into another culture by applying the 'let's-fit-the-pieces-together' is the total complexity of any culture"* (p. 131).

This means that if we can understand the cultural context of learning and learners the better the chances that any education programme will succeed in any particular LDC. The same goes for non LDCs though as we stated above in section 6.4 most education programmes aimed at online safety has been created in non LDCs for students in those countries. However, this model could still be useful if the target group was multi-ethnic and multi-cultural.

In the previous chapter in section 6.4.5 we discussed theories of culture and applied it to Thailand and in particular how it manifest in classrooms. Next we will take it a step further and discuss how an online safety awareness programme can be implemented successfully in Thailand. It should be noted, that in each LDC (and sometimes different regions within an LDC) the appropriate research should be undertaken. That is, to follow through the processes within the YPO framework.

6.5.2 Thai Education System

Thailand has near universal free or subsidised education for girls and boys. From the UN's sustainable website it states that "more than 90 per cent of school age children are enjoying subsidized 15-year basic education available to all children in the land, regardless of their nationalities or migrant status. The government is promoting

vocational study in particular dual education with an aim to increasing quality workforce in real sectors" (United Nations, n.d., The Progress).

Unfortunately the quality of that education leaves a lot to be desired. Thailand routinely does poorly in international comparisons like the OECD's PISA test for 15 year olds. In 2015 Thailand came 54th out of 70 countries for science, reading and maths (OECD, 2016). Baxter, Grossman, and Wegner (2017) in their in-depth look at Thailand's sustainable development goals discuss the current state of education. They note that, schools and teachers still practice rote learning, that "grinding and stultifying process of drilling, memorizing and copying that leads to passive students who lack critical thinking skills and have trouble competing in a world where innovation and initiative matter most" (pg 57). They go on to cite part of an address to the nation in June 2014 by the then prime minister, General Prayuth Chan-ocha, who said that schools should promote 'Thainess' i.e. being good proud Thai citizens that respects the monarchy, "the purpose is to instill discipline, strengthen the physical and mental state, and reinforce conscience and social responsibility" (Baxter et al., 2017, p. 59). This is despite the fact that a more student centric approach has been the official government policy since 2000. However this has been continually thwarted by, "bureaucratic inertia, weak implementation, lack of accountability and policy discontinuity resulting from unstable politics" (Baxter et al., 2017, p. 61).

6.5.3 Sufficiency Economy Philosophy

There are initiatives underway to try to address the education issues and one of the most promising is based on the principle of 'Sufficiency Economy Philosophy' (SEP) which was inspired by their revered late king, his majesty King Bhumibol Adulyadej. The Chaipattana Foundation, (n.d.) outlines the philosophical underpinnings of SEP and its three pillars:

- **Moderation:** On an individual and societal level to temper what one produces or consumes
- **Reasonableness:** Need to act rationally and with consideration taking into account all factors that are impacted by decisions taken
- **Risk management:** Decisions should be weighed up based upon their future impact

We should also promote virtue “comprising the awareness of honesty, patience, perseverance, and intelligence in leading one’s life” (The Chaipattana Foundation, n.d.).

These SEP principles have been incorporated into the school curriculum to promote sustainability and the “overall aim of the philosophy is to instil sufficiency-based attitudes and practices that help students form lifelong habits of thinking and doing that ultimately support the building of a sustainable society” (Baxter et al., 2017, p. 60). Over 21,000 schools have been certified as ‘sufficiency based schools’ (Baxter et al., 2017, p. 63) and these SEP schools try to teach by being guides to students rather than just being passive receptacles being fed knowledge. These SEP schools promote the following core learning principles:

- Learning by doing
- Questioning
- Planning
- Acting
- Reflecting

Students are taught to use reasoning, prudence and carefulness. Knowledge should be applied to the betterment of their school and communities. 21st Century Skills that students should be learning are:

- Life skills
- Communication
- Logic
- Problem solving
- IT literacy

Some important elements include:

- Student centred learning
- Civic / ethical literacy
- Critical thinking skills
- Creativity
- Synthesizing information
- Research skills

- Self direction
- Digital skills
- Financial skills

The SEP learning approach can be incorporated into the YPO education framework and be used as a reference for when designing classes / workshops. They can be then promoted in Thailand as SEP aligned which may result in faster acceptance and adoption. It is relevant to other LDCs as well because the student centric model and problem based learning approach can be applied universally. Of course in each territory we should work through the model and framework and tailor the education programme accordingly.

Part of the purpose of this research is to not only be theoretical but also practical. That is, to create an education programme (or at least elements of it) and deliver them to see if they are effective or not. In Chapter 7 we will discuss how some of the SEP ideas were implemented in a series of workshops in Nong Khai and Roi Et.

6.6 Online Safety Awareness Topics

We have now worked through the YPO model, uncovering the online attitudes and behaviour of young people in Thailand. We did this by use of surveys (quantitative method) and interviews (qualitative method). We are now in a position to list the online safety awareness (OSA) topics that are most relevant to Thailand. They will form the basis of the exploratory workshops discussed in the next chapter. The following list is in alphabetical order:

- **Digital resilience**
    - Well-being, risk & benefits of being online, harmful content, coping mechanisms, reporting
- **Computer security**
    - Good & bad practices, passwords, malware, identity theft, hackers
- **Cyber-bullying**
    - What it is, why it happens, what you can do about it
- **Inappropriate content**
    - Sites that show or discuss
        - Ways of physically harming oneself

        - Committing suicide
        - Sexual content
        - Taking drugs
        - Promotion of eating disorders
- **Mediation**
    - Parents / guardians and Educators online safety role
- **Online addiction**
    - Screen time
    - Online gaming
- **Social media**
    - How to use it responsibility
    - Your online reputation / brand
    - Interacting with strangers, the risks & benefits

The above list would make for a very good online safety awareness programme. It is interesting to compare and contrast it with content from a developed country. In section 2.1 above we briefly described the main issues listed on the UK based Internet Matters website: https://www.internetmatters.org/issues/.

Their list (in alphabetical order) contains:

- Cyber-bullying
- Inappropriate content
    - Pornographic, violent, gambling and ideological content
- Online grooming
- Online pornography
- Online reputation
- Privacy & identity theft
- Radicalisation
- Screen time
- Self-harm
- Sexting

The researcher in 2018 also completed an online safety mooc (massive open online course) run by the European Schoolnet Academy

https://www.europeanschoolnetacademy.eu/

Their modules were:

- Cyber-bullying
- Hate speech and radicalisation
- Media literacy and fake news
- Online relationships and sexting

Cyber-bullying is the one topic that is prominent on all three lists. Internet Matters focuses very much on inappropriate content and dangers like online grooming and screen time. Privacy and Identity theft are also listed. Interestingly, in the Thai research, when asked during interviews if they behaved differently online when alone many of the students said they preferred to be with other people (see section 5.3.6). This hints at the communal nature of Thais explained above in section 6.4.5. However, this issue should not be dismissed altogether as behaviour can change and may be an interesting focus for future research.

One of Schoolnet's modules highlights the issue of fake news and trust in information sources which (in 2020) are topical issues. Again, just as in the case of privacy issues this was not really explored in the Thai research but may be worthwhile to explore in future studies and workshops. In particular, given the hierarchical nature of Thai culture and adherence to authority (section 6.4.5.7) whether this influences how Thai young people perceive information and its trustworthiness.

Both Internet Matters and Schoolnet highlight 'radicalisation' another topical issue. This though (in 2020) is not a topic of conversation but as we have seen elsewhere this can change quickly. There are internal, regional conflicts within Thailand which could make this issue relevant.

One area that neither Internet Matters or Schoolnet addresses is computer security. There is no mention of; how to keep your computer, smartphone or other device secure, anti-malware, passwords or VPNs. From the Thai research, we found out that young people did not know about anti-malware, had poor password practices and generally did not think about such issues. Therefore workshops such as the 'password challenge' (section 7.1.2) are (in the researcher's view) essential.

6.6.1 OSA & Sufficiency Economy Philosophy

In section 6.5.3 we discussed the core principles of SEP and how it relates to education. There are now SEP schools that promote a more student centric model of learning by doing rather than the traditional rote learning style practiced in primary and secondary education. OSA lends itself to the more 'hands on' interactive SEP approach. In Chapter 7, below, we will see how using workshop style classes can be effective in learning outcomes. Students are not passive listeners, they have to actively participate in lessons. Many of the important elements of SEP such as, digital skills, communication skills and critical & creative thinking are integral to the workshops that were carried out.

6.7 Young People Online Activities

When conducting the exploratory workshops (Chapter 7) activities need to be highly interactive and engage student to want to learn more. The principles of active learning (section 3.4.3) should be incorporated, that is, using problem based, inquiry based learning and gamification techniques.

The activity types below were as a result of the researcher's personal experience and a desktop Internet search around the topic of teaching / training methods. Below are a few of the sites that helped in producing the list:

- https://www.wisegeek.com/what-are-some-different-teaching-methods.htm
- https://www.edsys.in/16-innovative-ideas-make-teaching-methods-effective/
- https://www.quizalize.com/blog/2018/02/23/teaching-strategies/
- https://en.wikipedia.org/wiki/Teaching_method
- https://corehr.wordpress.com/2013/05/15/training-and-development-methods/

Participation

- Individual tasks
  - Students work on their own
- Group work
  - Students are put (or asked to self organise) into small groups

- Whole class
    - Activity involves the teacher / facilitator and all students participating together

Activity type

- Art
    - This includes drawing, painting, model making etc.
- Competition
    - Two or more individuals / groups are pitted against each other
- Debate
    - Two or more individuals / groups are assigned to argue for opposing standpoints on a topic
- Demonstration
    - Teacher / facilitator show students how to accomplish a given task
- Digital media (audio/video)
    - Using audio and video to stimulate interest, such as use of a song or movie clip
- Discussion
    - Students engage in a dialogue on a given topic
- Games
    - Students use play in competitive and non competitive activities.
- Music
    - Using music and song to engage students
- Physical activity
    - Active tasks that require students to move
- Presentation
    - Lecture style with or without slides or props
- Role play
    - Students take part in a performance to dramatise the given topic

In the next section we present the YPO Applicability matrix which details for each activity the; activity type, resources / technology required, age range, class size and cultural context (to provide the facilitator with some background information).

6.8 Young People Online Applicability Matrix

Activity Type	Activity	Resource/Technology Required	Age	Class Size	Cultural Context: Thailand
Game Whole Class	What do you do online? Students are given a few minutes to write down the apps and services they use when they are online. To gamify the activity each student writes an item from their list onto the board. The next student has to write something new and so on.	Black/White board Chalk/Marker pens Pencils/Pens Paper No Technology Required	12-18	Any: If more than 30 students maybe consider putting students into smaller groups	Smartphones are ubiquitous. Students spend a great deal of time online
Game Physical Activity Whole Class	How online news spread All students are given a post-it note (or small piece of paper). They are asked to look around and note down 2 other students in the class (or ask them to get 2 students to sign their paper. The facilitator calls (at random) on one student to stand up and call out the names on their list. Those then have to stand up and do the same. The objective is to see how many people stand up. They are then given the analogy of how news can spread virally online.	Pencils/Pens Post-it notes or paper cut into small pieces	12-18	Ideally suited to large groups as the effect can more easily be seen.	Most students are active on social media but not always aware of the reach /effect of what they post online.
Art Group Work Presentation	Positive & Negative Aspects of the Internet Students are divided into small teams. They are then given an amount of time to discuss and come up with 2 lists, one for positive aspects of being on the Internet and one for the negative side. An additional task could be to ask them to draw one item from each list. Each team then has to present their findings	Pencils/Pens Colouring pens Paper	12-18	Any	In many schools this type of group activity is not common. Presenting is also a challenge.

Activity Type	Activity	Resource/Technology Required	Age	Class Size	Cultural Context: Thailand
Digital Media (Audio/Video) Discussion Whole Class	What is Cyber-bullying? And what can you do about it? Students are shown a short video on Cyber-bullying followed by a discussion about its prevalence, mediation by parents/teachers and coping strategies.	Laptop/Computer Internet Connection(if video has not been downloaded) Display (TV, Projector) Speakers	12-18	Any (though smaller class sizes may lead to better discussion with more participation)	There is no direct translation of the term 'bully' in Thai even though it is very common in schools. The YPO survey also showed that Cyber-bullying is common online too with nearly 70% been upset by an online interaction.
Demonstration Discussion Physical Activity Whole Class	Using Sati (mindfulness) in building resilience Sati is the Buddhist practice mindfulness and being aware of your thoughts and emotions. Students are asked how they feel when someone says/post something bad about them online and what they do. The teacher demonstrates how to do the breathing (this could be from a video if teacher is unsure) and lead the students to do the same. The practice of Sati can be a way to calm one self and not react to negative comments/posts while upset or angry. Essentially to think before acting.	If video demonstration needed then: Laptop/Computer Internet Connection(if video has not been downloaded) Display (TV, Projector) Speakers	12-18	Any (though smaller class sizes may lead to better discussion with more participation)	Thailand is an overwhelmingly Buddhist country and so this exercise is well suited to Thai students
Art Competition	Poster competition Students are asked to come up with a poster to highlight a particular danger of the Internet. The class then votes on which are the best designs Idea: The top designs could be featured in a calendar The activity can be spread over multiple lessons and/or given as homework	Art materials Paper	12-18	Any	In many schools this type of group activity is not common.

Activity Type	Activity	Resource/Technology Required	Age	Class Size	Cultural Context: Thailand
Competition Game Group Work Physical Activity	QR code Treasure hunt An activity best for outside spaces. Can be done inside buildings but may be disruptive. First QR (quick response) codes are generated which have questions and a clue to the location of the next QR code. These codes are then fixed in their respective locations. Students are divided into teams. Each team is required to have QR scanner app on their phone. Teams are given different starting positions. Points are awarded for the quickest teams but also for the answers to the online safety questions which should be recorded in their answer book.	Large space smartphone with a QR scanner app (Internet access not required) Pencil/Pen Answer book	12-18	Can be scaled to very large groups	
Competition Demonstration Game	Password Challenge Students are asked to enter one of their passwords on a password strength meter app. Each of their scores are recorded. They are then given tips on how to make strong passwords using passphrases and a formula. They are given a few minutes to come up with passphrase and formula. They then input their new passwords on the password strength meter to see the improvement from their original score and how they compare to others in the class	Laptop/computer with Internet connection Black/White board Chalk/Marker Pens Pencil/Pens Paper Password strength meter(e.g. https://www.cscan.org/PasswordStrength or http://www.passwordmeter.com)	12-18	Best suited to smaller groups	Wifi is ubiquitous in Thailand. Many public places use their respective phone number for the password. Many students have adopted this for their passwords.

Activity Type	Activity	Resource/Technology Required	Age	Class Size	Cultural Context: Thailand
Demonstration Game Whole Class	Encryption (Secret Messages) Workshop The objective is to learn how to create encrypted (secret) messages and how to decrypt them. Students are handed a sheet with the 2 wheels that make up a Caesar wheel. With scissors they have to cut them out the wheels and fix in place using a paper clip or a drawing pin. They are given a demonstration on how to create a secret message and the reverse i.e. how to decrypt. They then have a few minutes to create their own messages. Each student in turn goes to the board and writes their secret message and what key they used for the encryption. The rest of the class have to figure out the message.	Caesar Wheel worksheet Paperclip / drawing pins Black/White board Chalk/Marker Pens Pencil/Pens Paper	12 - 18	Best suited to smaller groups	

6.9 Conclusion

From the outset, the YPO education framework has been designed to be driven by evidence based research. The first components that make up the framework is a literature review of existing research and if necessary new research on the online attitudes and behaviour of young people. Thailand (our case study country) did not have much existing research in this field so quantitative and qualitative projects were initiated by means of surveys and interviews, respectively. Collectively, they provide the necessary information for the YPO model such as what influence do family, educators and peers have on young people's online experience. Gaining knowledge of their environment such as cultural norms, exposure to traditional media like newspapers and television, the prevalence of digital technology and the ease of access to it. At the end of this process, we get an informed view of the risks and benefits of being online as a young person. We can then start answering the question of what are the types of risky behaviour they engage in that may be potentially harmful. From this we get the topics that are most relevant for the target audience. In Thailand, for example, the biggest issue is that of cyber-bullying. Initially, at least, this would be the main thrust of any online safety awareness education programme in the country.

One aspect that is important to take into account is the cultural mask. As detailed above, the deeper we understand the underlying nature of a society the more successful we are likely to be delivering educational material. The mask acts as a guide and filter to the types of activities that would do well in a classroom as well as influencing the content. In Thailand, the collectivistic style of the culture means that group work is usually preferred over individual tasks. Thailand's Sufficiency Economy Philosophy education initiative fits in very well with the objectives of an online safety awareness programme and can therefore act as an effective vehicle for delivering the content.

Once we have the topics and the types of activities we can start creating content. The applicability matrix helps us sort them based on; activity type, resources / technology required, age range, class size and cultural context. In our applicability matrix above we have a list of nine activities. Some, like the poster competition, came through the literature review process; others were as the result of road testing

ideas and methods through exploratory workshops described below in Chapter 7. Together they provide a set of activities that an online safety awareness programme / campaign can base itself around. Additional activities will be added to the applicability matrix over time to increase the pool of relevant material. This can come from best practice elsewhere, from new research and from innovation and feedback delivering the education material.

The next chapter discusses the exploratory workshops that were undertaken as part of this research. Many types of activities are included in the workshops. These are evaluated using the action research approach to ascertain which work well within the Thai context and an online safety awareness workshop.

7. Findings & Analysis

The previous chapter discussed the theoretical YPO Education Framework by working through its component parts and applying it to our case study country, Thailand. An effective education programme does need to be based on sound research and be evidence based. However, its practical implementation is also very important. It needs to be tested in real world scenarios, that is, in front of the target audience. Described below is a series of workshops delivered to Thai students in several schools.

7.1 Exploratory Workshops

7.1.1 Online Safety Awareness Approaches

Awareness raising can be accomplished by a number of means. Thailand's Sufficiency Economy Philosophy (described above in section 6.4.2) applied to education, promotes approaches that are student centric and problem based and inquiry based (section 3.4.3). Learning is by doing and students are taught how to think critically and creatively rather than being taught what to think.

In the literature review, above, we discussed Reid and Van Niekerk's poster competition and von Solms and von Solms cartoon videos. These are examples of innovative and interactive ways of engaging with young minds. The poster competition is especially interesting because it uses the concept of gamification (section 3.4.3) which is the use of game design. By turning the learning process into a competition they hoped that it would motivate the participants.

With this in mind the researcher devised two workshops one on a basic but essential topic that of passwords and the second on encryption. These were based on the researcher's background as a security researcher and the literature review rather than the YPO findings which had yet to be fully carried out at that time. The work produced two short papers that were presented at two educational conferences in Thailand. The first, 'Using Gamification in Effective Online Safety Awareness Education' was presented at the 10th International Conference on Educational Research (ICER) 2017, 9 – 10 September 2017, Khon Kaen University, Thailand.

The second, which built upon the previous paper, ‘Using Gamification in Cyber Security Education’ was presented at the 1st International Conference December 3 - 4, 2017, Mahachulalongkornrajavidhalaya University, Nakhon Phanom, Thailand. See Appendix E for details and abstract of the paper. Below is an adapted summary of the main points including the results of the workshops.

7.1.2 Using Gamification in Effective Online Safety Awareness Education

The teaching of online safety awareness is becoming increasingly important. Von Solms & von Solms (2015) argue that, “cyber safety has become critical in today's world. Young children specifically need to be educated to operate in a safe manner in cyberspace and to protect themselves in the process” (p. 14). This endeavour however, faces a number of challenges to teaching including, “keeping up to date with a rapidly changing landscape; not just in e-safety, but in general terms of trying to understand the technologies” (Atkinson, Furnell & Phippen, 2009, p. 17). Looking at it from another perspective, this provides opportunities for educators and other stakeholders to try out new, innovative ways to approach the issue of online safety.

For the online safety awareness workshop, ‘how to create good passwords’ was chosen as the topic. Creating passwords is one of the most basic security practices that anyone with an email or social networking account will have had to set up, though as Furnell (2014) points out, “passwords are perhaps the most maligned example of security technology” (p. 5). He goes on to say, “fundamentally, it is not impossible to use passwords more effectively ... the challenge is not so much the technology, but getting people to use it correctly” (p. 5). The purpose of the workshop is to enable students to do just that, i.e. to create strong passwords that are easy to remember and unique for every resource that they use it for.

7.1.2.1 Design

Huang and Soman (2013) outline a useful process for designing a gamified lesson or programme. This is given below in Figure 7.1 and using its method we will describe the design of the password workshop.

Figure 7.1 Applying Gamification in Education

(Huang & Soman, 2013)

7.1.2.2 Understanding the Target Audience and the Context

The target audience in this case were Thai students from two schools in Nong Khai in the North East of Thailand. They were all between 16 and 17 years old, seven were from a local secondary school (five girls and two boys) and 14 were novices from a Buddhist temple school. In each case the password workshop took the place of their normal computer lesson. The workshop was facilitated by the researcher with the aid of Kru Eve at the secondary school and Tharabun at the temple school to do the translation between English and Thai.

7.1.2.3 Defining Learning Objectives

The workshop has one overriding intention and that is to enable students to create strong passwords that are easy to remember and unique for every resource that requires one.

7.1.2.4 Structuring the Experience

The 'Password Challenge' workshop is in 5 segments:

- **Introduction:** The students are asked to list all the resources where they require a password. They are asked how they create their passwords, if they think they are secure and whether they use the same password in many places.
- **Round 1:** All students are asked to enter one of their real passwords on Plymouth University's online 'Rate Your Password' app described in the 'Identifying Resources' section below. Their score which is given as a percentage is recorded next to their name on the board.

- **Password guidance:** The students are shown a method on how to create strong passwords. They are then given around 10 minutes to use this method to create their own password.
- **Round 2:** Using their newly created password they test to see if it is better than their old one using the 'Rate Your Password' app. Their new score is listed on the board next to their old score. The person(s) with the highest percentage score is deemed the winner of the password challenge.
- **Review:** A recap on what the password challenge is about, how to construct strong passwords and why it is important.

7.1.2.5 Identifying Resources

The main resource for this exercise was Plymouth University's online 'Rate Your Password' meter app, (https://www.cscan.org/passwordstrength), see Figure 7.2 below. It incorporates a strength meter as well as guidelines on how to create strong passwords. There have been a number of investigations including, Carnavalet and Mannan (2015), Furnell and Bär (2013), Furnell and Esmael (2017) and Ur et al. (2012), all concluding that the presence of guidelines and in particular meters encourages people to create better passwords. Ur et al. (2012) noted comments from participants, "the meter 'motivated [him] to use symbols,' while another 'just started adding numbers and letters to the end of it until the high score was reached.' Participants also said that the meter encouraged or reminded them to use a more secure password" (p. 12). This motivating effect demonstrates why meters are such a useful gaming element.

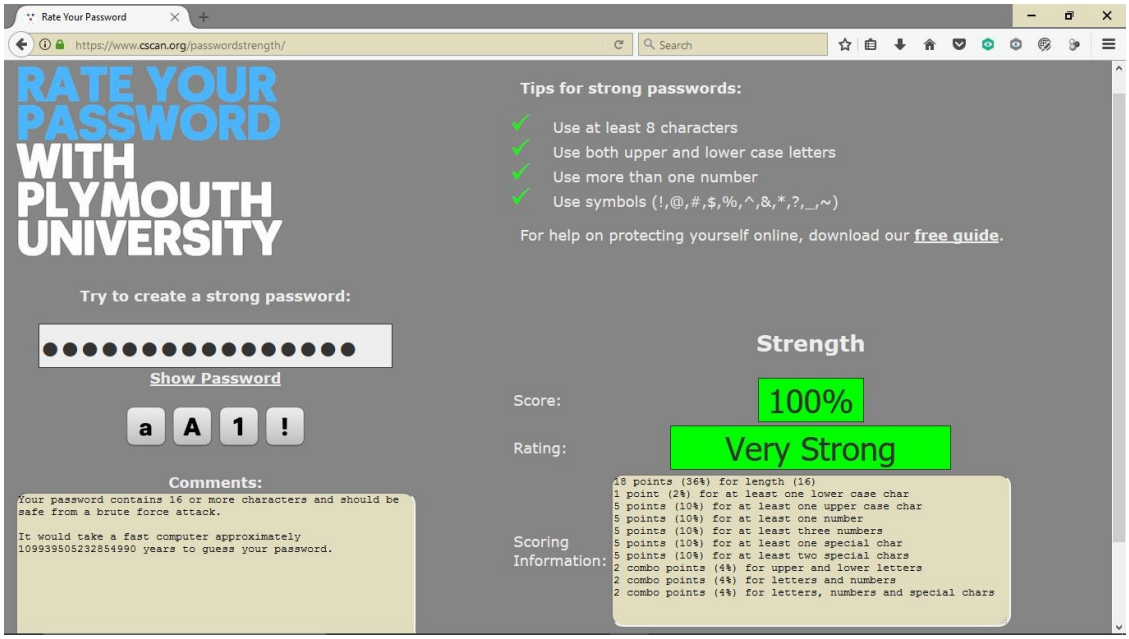


Figure 7.2 Plymouth University's Online Password Strength Meter

(https://www.cscan.org/passwordstrength)

It can be seen from Figure 7.2 above that the 'Rate Your Password' meter, because it is a learning tool, goes further than most meters by giving the user information on how their score was arrived at. It combines a score measured in percentage and a rating system which goes from, 'Very Weak' to 'Very Strong'. In the comments section it gives a running commentary of what it thinks of your password so far. In our example we achieved 100% but if, for example, our password was, 'elephant' it would give us a score of, 26% and a rating of, very weak. In the comments section it advises to add a combination of characters and not just to use lower case. It also adds that it appears 454th out of the top 10,000 passwords.

To create strong passwords, students were shown how to use a passphrase, a term coined by Sigmund Porter in 1982, (Porter, 1982). Instead of trying to remember a password the idea is to use a phrase instead. Emm (2013) gives the example, 'A stitch in time saves nine'. He suggests using the first letter of each word which gives, 'asitsn'. You then apply a formula to it.

(a) Capitalise the fourth character.

(b) Put the name of the account you're logging into after the second character.

(c) Put the number 3 after the fourth character.

(d) Put a percentage sign after the eighth character.

(e) Move the sixth character to the front.

He gives two examples, Amazon becomes, 'aasAm3zo%niTsn' and Mybank,'basMy3an%kiTsn', (Emm, 2013). In this way you can create unique complex passwords but rather than having to remember each password all you have to do is know your passphrase and your formula. A simplified version, shown below, was used for the workshop.

We used the following phrase, 'I love Thailand' and the formula:

(a) First 2 characters of the name of the account you're logging into at the front in capitals

(b) For all instances of letter 0 change to number 0

(c) For all instances of letter I change to number 1

(d) Add the characters :) at the end

For Facebook this becomes FA1l0vetha1land:)

For Gmail it will be, GM1l0vetha1land:)

This formula gives a score of 90% and a rating of, 'Very Strong'.

In terms of material resources, as the meter is an online app a computer with Internet connection is required. If possible it should be hooked up to a large screen monitor so it can easily be seen by all participants. Lastly, a black or white board where all names and scores can be recorded.

7.1.2.6 Applying Gamification Elements

By naming the workshop 'Password Challenge' it gives the impression that some kind of game play will be involved. As stated above, the challenge consists of two rounds. In the first round they are asked to enter a password that they currently used. As each participant enters their password everyone is able to see what score they achieve. This is then recorded on a whiteboard next to their name. All participants can then see where they rank next to the others.

After they have been given advice on creating strong passwords they are given 10 minutes to create their own passphrase and formula. In round 2, they and everyone

else watch as they enter their new password to see if they can beat their first score as well as their fellow participants.

7.1.2.7 Workshop Results

Both workshops proved to be fun and as Figure 7.3 below shows, effective in improving the participants password strength.

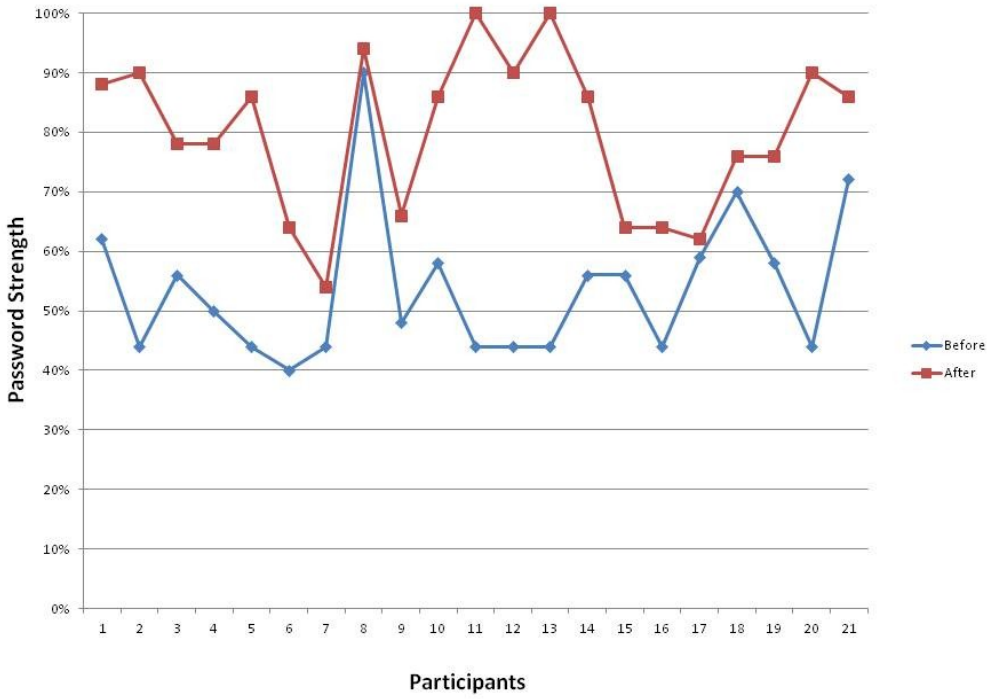


Figure 7.3 Password Challenge Workshop Results

The average percentage point improvement for both workshops (i.e. across all 21 participants) was 26, with the lowest and highest being 3 and 56 respectively. Two participants went from having weak passwords with a score of 44% to very strong at 100%. It was noticeable that even after the workshops some students and teachers continued to engage with the password meter app in order to try and get the maximum score of 100%. This meant reading the password tips and comments (the game rules) in detail and, in particular, noting that to get the highest score (for this meter at least) you need to use at least 16 characters.

7.1.2.8 Future Considerations

While the workshop fulfilled its goal of improving participants' passwords, some gamification elements could be enhanced. For example, instead of just writing names on a board, a leader board prop whereby names can be interchanged depending on someone's score could be used. After each participant's go, the leader board gets updated. This will add interest and may incentivise at least some participants to create better passwords.

Dicheva et al. (2014) notes that, "efficient gamification efforts include more than points and badges − they contain challenges and a continual feedback, as well as a high level of interactivity" (p. 90). Therefore the social, cooperative nature of gamification could be included. Instead of working individually they could work in teams to create the passwords. After the second round they can reveal their phrases and formulas and the group as a whole can have an opportunity to discuss and give their feedback.

7.1.2.9 Summary

The password challenge workshop demonstrates how using gamification elements can enhance engagement and motivation of participants in learning a basic yet important security measure, that of creating strong, unique passwords for every resource they use. All participants improved their passwords and some quite dramatically, from weak passwords to very strong. Of course the workshop in isolation will not necessarily improve the security practices of the participants. However if it was included as part of a wider online safety awareness programme underpinned by elements of gamification it could help improve engagement and motivation of participants.

It was not only the student participants that were taken with the password meter app, teachers too were trying their best to create passwords that would achieve a very strong rating and a score of 100%. And as other studies, mentioned above, have shown the use of guidelines and strength meters are effective in improving people's passwords. Arnold (2014) argues that, "gamification is also rapidly becoming an important strategy for all kinds of organizations to drive employee engagement and loyalty... motivating users to complete mandatory and optional training" (Contemporary Gamification, para. 2). Therefore the use of such workshop

techniques need not be limited to young people. It is feasible that they could be used within staff activities in organisations forming part of an employee's induction or training programme enlivening the understanding of password policies beyond the basic guidance document that is normally presented. Furthermore, a strength meter and guideline can be displayed whenever an employee is asked to create or change a password. In this way it will reinforce the learning they have already undertaken. The workshops were written up as a blog post for International Thai Foundation, available here:

https://thai-charity.org/password-challenge-in-nong-khai/

7.1.3 Using Gamification in Cyber Security Education

Cyber Security is the modern term we use for computer security. The United Nation's agency, International Telecommunication Union (ITU) states that, "Cybersecurity is the collection of tools, policies, security concepts, security safeguards, guidelines, risk management approaches, actions, training, best practices, assurance and technologies that can be used to protect the cyber environment and organization and user's assets." (International Telecommunication Union, 2017).

As more and more people are getting online especially via smartphones, raising awareness of the risks and how to mitigate them are becoming ever more important. However, little attention has been paid to educating learners. Ólafsson, Livingstone and Haddon (2013) notes that "the rapidity with which children and young people are gaining access to online, convergent, mobile and networked technologies is unprecedented in the history of technological innovation and diffusion" (p. 6). Therefore it is up to educators to try and keep up with this rapid pace in order to equip their young learners with the awareness of the risks and benefits.

7.1.3.1 Encryption Workshop

According to Wikipedia, "encryption is the process of encoding a message or information in such a way that only authorized parties can access it" (Encryption, 2017). Most modern communications involve some kind of encryption for data integrity and security reasons. However, sending encrypted or secret messages has a long history. It was known that "the Roman ruler Julius Caesar (100 B.C. – 44 B.C.) used a very simple cipher for secret communication. He substituted each letter of the alphabet with a letter three positions further along. Later, any cipher that used

this ‘displacement’ concept for the creation of a cipher alphabet was referred to as a Caesar cipher” (Secret Code Breaker, 2017).

Figure 7.4 below shows this represented as two interlocking wheels with the alphabet written on both. This is commonly called the Caesar wheel.

Figure 7.4 Caesar Wheel

(Secret Code Breaker, 2017)

Julius Caesar as mentioned above substituted a letter with one 3 further along. Using the Caesar Wheel you start with both wheels aligned so that each letter shown on the inner wheel is the same as on the outer wheel. So letter A on the inner wheel will be under letter A on the outer wheel. To use Julius Caesar’s method we would move the inner wheel left (counter-clockwise) by 3 letters. We term this ‘Shift 3’ or key = 3. By doing this the letter D on the inner wheel will be under the letter A on the outer wheel.

The students were given examples of how to create secret messages. For example if you want to encrypt the word CAT on the outer circle you go to the letter C and then write down the corresponding letter on the inner circle which is letter F and so on for the other letters. Below are examples using different keys.

- Key = 3 CAT → FDW
- Key = 5 CAT → HFY

All students were then given a Caesar wheel and were set some challenges to decipher some secret messages on the board. Once they were comfortable in doing this they were told to create their own message. Once they were ready each participant in turn wrote their message on the board and told the class the key they had used. Using their Caesar wheel they would then try to decipher the secret message.

7.1.4 Workshop Result

The workshop proved to be a good introduction to the topic of encryption. The students were interested in creating secret messages and especially the gamification element of trying to solve other people's messages which was both challenging and fun.

7.2 Roi Et Online Safety Workshops

In Roi Et at the same time as carrying out the surveys and interviews, four workshops were delivered to test out some ideas and activities. The workshops were written up as a blog post for International Thai Foundation, available here:

https://thai-charity.org/online-safety-and-cyberbullying-workshops-in-roi-et/

and on the Young People Online Facebook page which was designed to promote the research:

https://www.facebook.com/onlinestaysafe

The action research approach (described above in section 3.4) was used to assess the workshops for their effectiveness and suitability. This phase of the research was written up as a paper entitled "Designing an Effective Anti-Cyberbullying Programme in Thailand" and was presented at the 12th International Symposium on Human Aspects of Information Security & Assurance on 29-31 August 2018 at Abertay University, Dundee, Scotland. Below is an adapted and revised version of the analysis section of the paper.

7.2.1 Roi Et Workshop

Originally the workshop was titled, 'Anti-cyberbullying Workshop.' However the word bully has no direct translation into Thai (Section 3.7.2) and it was thought that it would be best to not jump straight into the subject matter. Therefore it was given a more generic title, 'Online Safety Workshop.'

The first workshop was divided into 5 distinct activities, as outlined below.

Activity 1: Write 5 things you do online. The objective is to get students to think about all the different ways they consume online services.

Activity 2: In groups discuss and write down 5 good things and 5 bad things about being online. They are not told what constitutes a 'good thing' as opposed to a 'bad thing'. They would then present their findings in front of the class.

Activity 3: What is cyber-bullying? This question is posed on the board and the class as one group are asked (with help from the teachers) what it is. This is tricky as there is no direct translation of 'bully' into Thai (section 3.7.2).

This activity is meant to generate discussion of aspects of bullying and how it relates to online behaviour.

Activity 4: Reporting / Mediation. This is another class discussion on what a person should do if they are being cyber-bullied and what advice should parents / guardians and educators advise.

Activity 5: Sati (mindfulness). Thailand is an overwhelmingly Buddhist nation so it was thought that maybe employing some Buddhist teaching within the context of the workshop would be an effective way to communicate with students. This is especially so as one of the workshop facilitators, Tharabun, is an ex Buddhist monk. Grossman and Van Dam (2011) defines Sati as:

> *"a practice or process ... ranging from mindfulness of bodily sensations to awareness of more expansive mental content and processes, such as emotion and altered view of self. It connotes several features: (1) deliberate, open-hearted awareness of moment-to-moment perceptible experience; (2) a process held and sustained by such qualities as kindness, tolerance, patience and courage (as underpinnings of a stance of nonjudgmentalness and acceptance); (3) a practice of nondiscursive, non-analytic investigation of*

ongoing experience; (4) an awareness markedly different from everyday modes of attention" (p 221).

This activity is meant to bring the workshop to a positive conclusion and give students a means to becoming more resilient from upsetting online interactions.

7.2.2 Workshops 1 & 2

These workshops were delivered to 21 M2 (13 year olds) and 28 M3 (14 year olds) students at the first of the three schools taking part in our study in Roi Et Province in the North East of Thailand, May 2018. The lessons were conducted in English by the researcher with Tharabun doing the translating into Thai. Each one hour workshop progressed in a similar fashion.

For the first activity the students were given around five minutes to write down what they did online. They were then asked in turn to name one item on their list. The catch was that they could not repeat what someone else had said already. Their answers were written on the board in Thai and in English. M2 students came up with 19 activities and M3 16 activities. The most popular were; searching for information, using Facebook, YouTube, Messenger, LINE and playing various games.

For activity 2 they were asked to organise themselves into groups of four or five. They were then given 10 minutes to come up with five good and five bad things about being online. Some groups were more active than others and some students allowed others to do all the work. When they presented (In Thai) we insisted that all students had to speak at least once.

After the presentations the word 'Cyber-bullying' was written on the board. In both workshops no one had heard of the term. They were given a few definitions (as above) and asked for more possible definitions and examples. The most common one was the sending and receiving of bad chat messages. When asked what they do if they received a bad message some said they would send a bad message back, others would block that person. When asked if they would talk to a parent or teacher all said no. They would sometimes talk to a friend but, more likely than not, they would just try and ignore it.

For the last activity, learning how to practice sati, they were introduced to its principles by Tharabun who also gave them a demonstration. They were told that

they should never reply back or take rash actions when angry. By using sati it could be a way to calm themselves down. The last part was to get them to close their eyes and to practice the sati breathing technique.

7.2.3 Reflection on Workshops 1 & 2

Following the workshops, the researcher and Tharabun held a meeting to discuss their respective thoughts on how it all went. They agreed that the two workshops, which were held back to back, followed a similar pattern. Most students were engaged though this in part was due to the novelty of the lesson. The facilitators only had assistance from a school teacher at the start of the first workshop. It would have been very helpful if their usual teacher was present for the whole lesson. As there was a native English speaker it was thought that maybe it would make sense to turn the workshop into an English lesson as well an online safety awareness one.

For activity 1, to make it more interactive rather than shouting out answers students should come up to the board and write the answers. In activity 2, the students self organised themselves into groups. This process took quite a long time while students were negotiating with each other. In the first workshop one girl was left on her own until a group was found for her. From a time management point of view another way should be found to make up groups. Some students did not seem interested and let others do the thinking and writing. The presentations were fairly poor, most elicited only one or two words before passing the paper (with the list of good and bad things about being online) to another group member.

Activities 3 and 4 effectively became one. No one had heard the term cyber-bullying and when they were asked for possible definitions and examples they were not forthcoming. It is possible they did not understand what was expected of them. Maybe giving them more information at the start of the activity would have helped. When asked how they cope with aspects of cyber-bullying like, for example, if someone wrote something bad about them some said they would retaliate in kind and others said they would just ignore it. They tend not to speak to parents or teachers and only sometimes their friends. A few boys joked about calling the police.

Introducing them to sati in activity 5 was supposed to give them one way to cope with cyber-bullying. M3 took this a little more seriously than the younger M2

students, asking more questions about what it was and how to do it properly. Both sets were fairly noisy throughout though.

7.2.4 Workshop 3

This was carried out with 16 M3 students at our second school in Roi Et. Following the action research method, we implemented the ideas from the workshop reflection process. We agreed with the director of the school to make the workshop into an English lesson and requested for the English teacher to assist us if possible. For activity 1 they needed to list their online activities in English. The students then in turn had to write on the board, again in English. This turned out to be quite a fun exercise with the students helping each other with the spelling of the words. As we discussed above in section 6.3.5.9 Thais have a preference for working collectively.

For activity 2 students were already arranged in groups of four. With the help of the two Thai/English speakers they would write in Thai and English and then present their respective lists in English. Activity 3 was now the combined 'what is cyber-bullying?' and what to do if you have been cyber-bullied. More information and examples were given at the start so they could better understand the concept. Their replies on how they react if cyber-bullied were the same as the first 2 workshops. They would either react in kind or try to ignore it and they would not report it to parents or teachers. For activity 4, the practice of sati, again more information was given at the beginning to explain what it was and how it could help.

7.2.5 Reflection on Workshop 3

Turning the workshop into an English lesson was mostly positive. In activity 1 the students were more engaged and seemed to like the challenge of having to write in English. Activity 2 turned out very hard work for Tharabun. The school's English teacher disappeared for some time. The facilitators suspect that it is because her English is not very good. As we discussed above in section 6.3.5 in Thai culture losing face (i.e. losing respect) is to be avoided. Teachers are supposed to have the answers, in this case translating Thai into English for the students. Instead, Tharabun had to do this for all the groups and so extra time was allowed for the activity.

Front loading more information at the start of the cyber-bullying and sati sections seemed to work better than the first two workshops. For the latter especially the students were very attentive and followed instructions on how to practice sati well.

7.2.6 Workshop 4

At our third school the workshop was with 18 M3 students. The only innovation from the previous workshops was the introduction of a short Thai video on cyber-bullying, (Figure 7.5 below).

Figure 7.5 Thai Cyber-bullying Video

(https://www.youtube.com/watch?v=9AMvJJgJMOs, 2018)

(Permission to reproduce this still image has been granted by MinuteVideos Thailand)

7.2.7 Reflection on Workshop 4

There was excellent cooperation from the young English teacher who as well as good English skills had very good classroom management in maintaining order and motivating the students. In activity 1, everyone wanted to write on the board realising that it is easier to be one of the first rather than one of the last (i.e. because you cannot repeat the same item). Activity 2 was similar to the other workshops in that only one or two individuals in each group were active. Presentations too were not very good; students seemed nervous and gave one-word answers while looking at each other or on the floor. It may be a good idea to include presentation skills

training as part of the programme especially as it can be a way to build confidence and self esteem.

During the playing of the video the students were very attentive. It was the best short video that the facilitators could find on the subject matter in Thai. Most Thai videos on this subject matter have quite gory content on issues such as self-harm and suicide. This one too (see Figure 7.5 above) had a hanging scene but it is over fairly quickly and is an animation rather than featuring live performers. The researcher interviewed the teacher after the workshop to ask for her thoughts on how she felt it went. With respect to the video she thought it was appropriate and informative for her students. The students were asked if they thought cyber-bullying was a common feature of their lives. Quite a few agreed that it happens a lot. When asked if they reported it, just like in the other workshops, they said they would not tell teachers or parents just, maybe sometime discuss it with friends.

7.2.8 Summary

These workshops demonstrated that there is a need for online safety and cyber-bullying awareness in Thailand. Of the three schools in this study two did have rules about the use of phones. At one, students had to hand in their phones and collect them for use during lunchtime and after school. The other had a ‘no phone in class’ rule though some were seen being used. The third school left it to individual teachers. None of the schools had a policy on cyber-bullying or a reporting mechanism for students. Actually, no teacher or student from the three schools had even heard the term, cyber-bullying. In creating a programme thought will have to be given on how to involve teachers and parents as there is lack of general awareness of online safety issues and how to deal with them.

The action research approach whereby reflecting after each workshop to evaluate its effectiveness proved to be a good way at determining the kind of activities Thai students responded well to. It was found that for activity 1 getting the students to write by themselves on the board and encourage them to help each other was a much more fun way than to just reply verbally. As there was a native English speaker turning the lesson into an English class was mostly positive as well. This is as long as you have the school’s own teacher motivated to help deliver the content as was the case in the last workshop.

Activity 2 proved problematic throughout all four workshops. Some students were disengaged and left it to other to write the list of good things and bad things about being online. The presentations too were poor both in Thai and in English. Over the course of the workshops there were 19 groups that completed this activity. Table 7.1 below gives a list of the top answers for both good and bad that had three or more mentions.

Table 7.1 Activity 2: Roi Et Workshops

Good	Mentions	Bad	Mentions
Find information	13	Porn	12
LINE /Messenger chat	9	Being cheated/deceived	8
Online Shopping	9	Addicted to Phone	7
Watch News	6	Hack Facebook Account	4
Online translation	4	Hacking	4
Listen to music	4	Bad to Eyes	3
Facebook	4	Pay Money	3
Learning	3		

The facilitators were very careful not to tell them what constituted a good or bad thing. In this way we get an unbiased insight into what they think of as good or bad. By collecting such information it can inform the content on future workshops. It's interesting to note that in the bad column there was not one mention of online harassment or other activity directly related to cyber-bullying.

In the first two workshops the facilitators tried to get students to come up with their own terms of what constitutes cyber-bullying. As mentioned above, there is no direct translation of this word into Thai. This proved not to be so successful. In the third workshop they were given the different definitions and then asked for examples. However, it was not until the fourth workshop when the Thai cyber-bullying video was shown that they truly engaged and discussed more openly. This is probably because they understood the concept much more clearly than the students in the previous workshops. In all the workshops when asked how they deal with cyber-bullying all said they would not talk to parents or teachers and only sometimes with friends. This aspect will need to be addressed in future workshops. Material should be created for schools including best practice guides on policies and rules. Teacher

and parent guides on online safety and cyber-bullying awareness would prove useful too.

As we noted above in section 6.4.5 on culture, in Thai society problems and conflicts are often ignored and not discussed to keep social harmony and for no one to lose face. The commonly used phrase, 'mai pen rai' (section 6.4.5.10) is often said in these situations. Young (2013) adds that this "can be translated as 'never mind,' 'don't worry about it,' 'forget it,' or 'don't bother. Yet it also implies the assumption that since problems and adversary will eventually become better, worrying about them will achieve nothing" (p 5). In other words, Thai's in general do not discuss problems directly with each other and actively try to avoid any kind of conflict. Cheyjuny (2018) with reference to young people being bullied notes:

> *"there might be some coping behaviors influenced by the victim's culture, i.e. some victims are reluctant to reveal the problem to their parents or their teachers or some subordinates keep their cyber victimized problem caused by their superior in secret, due to a high power distance in Thai society"* (p. 12).

In their study of 136 young Thai people aged 15 to 24, Samoh et al. (2019) found that:

> *"they would only consult their parents as the last resort. Youth generally don't expect their parents to help solve problems and are also afraid their parents might react by forbidding their use of online media. Therefore, youth turn to their friends first if they felt they need help in managing a cyberbullying problem, while many would just try doing so on their own" (p. 250).*

This reinforces the findings of the workshops as well as the interviews that preceded them. Any programme will need to treat this issue in an intelligent and culturally sensitive way.

The last activity introduced the Buddhist teaching of sati or mindfulness. In the first two workshops the students were quite noisy and were not that attentive. The latter two workshops were more successful possibly because there was more explanation about the concept and what practicing its teachings can achieve. Finding and adding other Thai aspects to complement the existing activities would be beneficial as the students may relate to them more easily.

These workshops proved to be a useful first step into creating an anti cyber-bullying programme as part of a wider online safety initiative. More types of activities such as the use of art, games and role playing needs to be explored and incorporated into the programme. In conjunction with creating activities for students, material also need to be created for schools, teachers and parents.

7.3 Nong Khai Online Safety Workshop

In January 2019 the last exploratory workshop was carried out at a Nong Khai technical college. Whereas previous workshops were with 13 – 15 year olds this one was with 18 year olds. It benefitted from the fact that it could take into account the analyses of the surveys and interviews from Nong Khai and Roi Et. The workshop was written up as a blog post for International Thai Foundation, available here:

https://thai-charity.org/online-safety-and-cyberbullying-workshop-in-nong-khai/

and the photos can be found on the Young People Online Facebook page:

https://www.facebook.com/onlinestaysafe

As well as being older this was also the largest group of students, 38 in total. The researcher was assisted by an excellent teacher and classroom manager, Kru Pao to facilitate the workshop.

7.3.1 Workshop Activities

The workshop was in place of the students two hour English lesson. This afforded us more time for each activity than the typical 40-50 minutes that we had been use to thus far. The first activity was the same as in Roi Et whereby students are asked to write on the board what they did online. This has become a good starter activity. It gets students to start thinking about what they do online plus they are able to move and help each other.

The second activity was adapted from an online lesson found at:

http://azoomee.com/index.php/searchitup_lessonplans_mypopstardisaster/

Each student was given a piece of paper (or post-it note). They were asked to get two other students to write their names on the paper. Once this is done one student was chosen at random to stand up and name the students on their piece of paper. Those students then had to get up and call out the names they had on their

respective list. All those named had to remain standing. The facilitators had to restart the process a couple of times before the majority of the students were standing up.

At the end they were asked to imagine that instead of names on a piece of paper, what if, they were to send a private message or photo to a couple of friends and they had forwarded it to a couple of their friends. They were then posed the question of how quickly this could be spread online.

The third activity was the listing of five advantages and five disadvantages of being online. As before (see 7.2 Roi Et Online Safety Workshops above) they were to do this in small teams. As we had much more time they were asked to draw the advantages and disadvantages. They were given around 30 minutes to do this. They were then asked to do a small presentation in English to explain their lists and drawings. Figure 7.6 below gives an example from one of the teams.

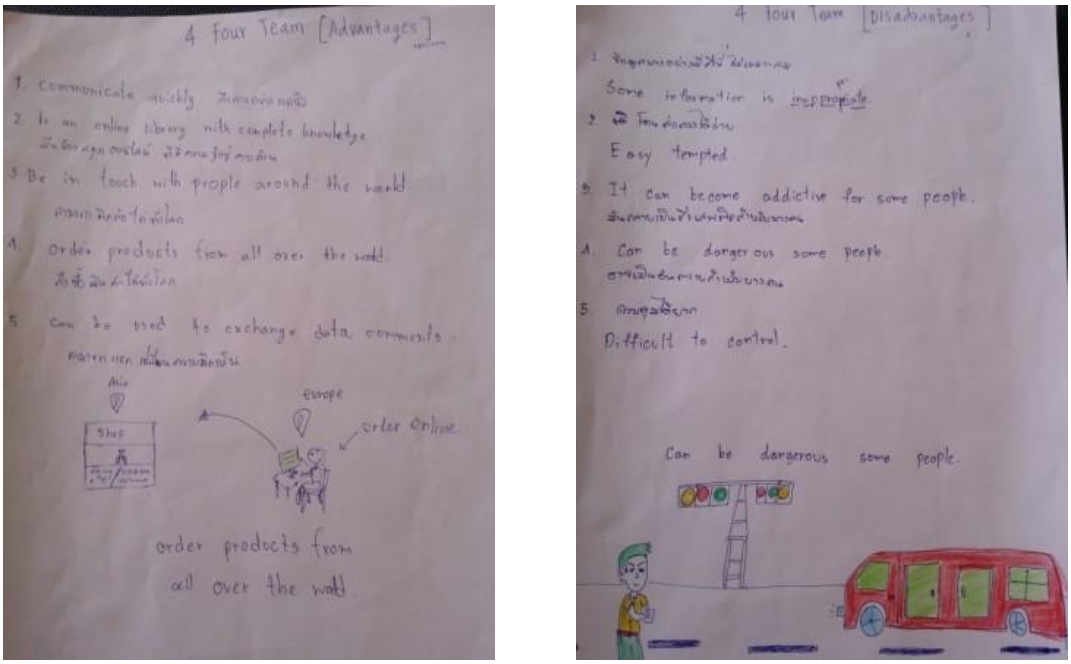


Figure 7.6 Drawings of Advantages & Disadvantages of Being Online

The fourth activity was watching the cyber-bullying video (Figure 7.5) followed by a short discussion. Initially, they were a little reticent in talking about this issue but after a little while they did start to open up. Like in the previous workshop they said cyber-bullying was common but they did not really talk about it. It was not important to tell

parents or teachers about it and that they could be the ones that are blamed for it happening. It was best to keep quiet.

The last activity was a short discussion on the Buddhist practice of Sati (see section 7.2.1). Kru Pao explained to them in Thai how using Sati or mindfulness could be one way of coping with negative experiences online.

7.3.2 Summary

The students were asked to give their feedback on the workshop. All said they that enjoyed it as it was not the usual kind of lesson they normally have. Kru Pao confirmed this afterwards and said they had genuinely enjoyed the lesson. The activity that resonated the most was about cyber-bullying. The presentations were again delivered poorly. As noted above it would be apt to include some presentation skills training as part of an education programme as it would be useful in other areas as well. The new activity that was introduced, ‘how news can spread quickly online’ was also well received and a good visual way to demonstrate how a message or photo can quickly go viral.

7.4 Review of Workshops

In section 6.5.2 we described the Thai education system. Although a plan is in place to move away from the traditional rote learning style where students are considered like vessels to be filled up by a teacher’s knowledge, it is still the norm in Thai schools. The SEP initiatives (Baxter et al., 2017) seek to address this issue but progress is slow. A YPO online safety awareness education programme can fit in with the core aims of SEP which promotes problem / project based learning through critical and creative thinking.

Classes organised as workshops proved mostly successful even though students and teachers are not use to this style of teaching. Utilising active learning techniques (sections 3.4.3, 7.1.2) like, for example, in the password challenge turning the workshop into a competition worked very well. Activities in which students cooperated rather than competed also worked well. The starter activity in the Roi Et and Nong Khai workshops, ‘list what you do online’ did not really come alive until they were asked to write them on the board and they could help each other.

An important aspect of active learning and gamification in particular is the instant feedback you receive from doing an activity (sections, 3.4.2, 3.4.3, 7.1.2). The password meter in the password challenge gives you a score out of a 100. For deciphering secret messages the resultant answer either makes sense or not. For other activities like the discussions on cyber-bullying and sati it is more difficult to ascertain whether the concepts have been fully understood. Therefore, it may be worthwhile, to introduce short evaluations at the end to test understanding. It could be in-class or made available online to be completed within a specified time. Even here gamification could play a part. For example, a reward badge could be awarded for each completed section of the course.

In section 3.4.3.2 inquiry based learning was discussed and how it relied on guidance from the teacher / facilitator. For online safety issues like cyber-bullying where there is little awareness some of the strategies like, scaffolding, heuristics and explanations should be employed. In the first of the Roi Et workshop when discussing cyber-bullying very little information was given up front to the students with the intention of getting them to come up with their own definitions. This did not work successfully. In subsequent workshops more explanations were offered at the start. However, it was the introduction of the Thai short video on cyber-bullying that really proved to be an effective springboard to meaningful discussions. Other videos, if well chosen, can help introduce a topic to students and encourage them to discuss what they have seen. In future workshops students could be tasked to create their own videos which will bring a multi-disciplinary aspect to their learning, role-play (acting), storyboarding, videoing, directing, editing, etc.

One area that could be improved substantially is presentation skills. Whether in Thai or in English the presentations were universally poor. This is probably due to a mixture of reasons including being used to the rote learning style and lack of confidence. Presentation skills training can be included into the overall programme. However, it is not one of the core modules and can be instead moved to another programme, if appropriate, as it will be beneficial for students generally.

In most cases, the workshops replaced an English class. Going forward it will probably be delivered by non computer specialists, e.g. social studies teachers. This is because there is a general lack of computer teachers in Thailand especially in rural areas. For example, at one school the researcher volunteered at, the sports

teacher acted as the computer teacher. Unfortunately, their technical knowledge was limited so not wanting to lose face the teacher left the researcher to teach on their own. To an unwary foreign teacher, not knowing the cultural context of this action, they could be left daunted and confused.

7.5 Conclusion

Overall, the workshops were a success and showed what was possible in the current Thai education system. There was an appetite amongst students and some teachers for more active learning classes using competitive and co-operative activities. Delivering online safety awareness education lends itself easily to this learning approach.

The next Chapter will reflect on the survey, interview and workshop phases of this research. The technical, cultural and other challenges will be discussed. Lastly, each component part of the education framework is evaluated.

8. Discussion & Reflection of Proposed Framework and Research Findings

8.1 Overview

The proposed online safety awareness education framework (Figure 6.1) for LDCs is an evidence based construct that does not assume what is taught elsewhere (in particular in developed countries) can be just transposed and taught in the same manner. Integral to this is the YPO model (Figure 3.6). It outlines the factors that impact the attitudes and behaviour of young people and also the benefits and risks that they experience online. This includes influencers, their peers, family and teachers. Then the environment they are brought up in including, accessibility to technology, traditional and online media and cultural norms. This information should be sought from existing research or if it has not been undertaken (like in Thailand) new research should be got underway. However best practices from other LDCs and developed countries could be applied using an approach like action research so its effectiveness can be gauged and added to the pool of research.

The YPO model was based on the European Kids Online (now Global Kids Online) and their research tools including their survey questions meant that we could compare and contrast between countries and regions as we did above in Chapter 4. The Thai survey had to be carried out early on in the research as there were no comparable studies to draw on. Once the Nong Khai surveys were completed and analysed we compared it to two previous European surveys and found that smartphone use was much greater in Thailand amongst young people, around 90% compared to 31% (see Table 4.2 above). The European figure is from 2010, when the latest EU Kids Online is published that figure will no doubt rise significantly. However, whereas young people in Europe have the opportunity to go online using a myriad of connected devices such as tablets, notebooks and home computers, in Thailand the majority will only use their smartphone as their gateway to the Internet.

8.1.1 Surveys

The YPO Surveys found that Facebook is the dominant social network and Facebook Messenger the most used messaging service. Connecting and socialising are not the only benefits; many use it for educational purposes finding information for their homework and for entertainment like movies, music and games. The majority of young people, 69%, have had negative experiences and been upset by some kind of online interaction, be it on Facebook or in chat or by visiting websites where people discuss taking drugs, self harm and being very thin. They have also seen content that depicts violence, are gory or show sexual images. Over half of young people (55%) had been cyber-bullied and four in 10 said they were the cyber-bully. It makes this issue, in Thailand at least, the most pressing one. As a result of this the subsequent exploratory workshops revolved around how best to address it.

8.1.2 Interviews

Interviews were conducted to give a qualitative element to the research. Whereas the surveys provided us with statistics, the interviews give us actual experiences and stories from young people. Some of the topics that were explored are:

- Passwords: A third of respondents had said others had used their password to access information
- Internet freedom: Does the anonymity of the internet give them a freedom to behave in a way that they would not normally act in the offline world?
- Basic computer security: Do they know what a computer virus is? If they have been infected with a virus how do they know?
- Mediation: What online safety advice do they get from their family and educators?
- Media. What, if any, safety messages do they get from television, the Internet or other media.

Password sharing was seen as a sign of trust between boyfriends and girlfriends or close friends. A few recounted that this trust had been abused in the past and now they keep their passwords secret. They very rarely spoke to their parents / guardians or teachers when they had a bad experience online. Part of the reason is the Thai concept of kreng jai which was discussed in section 6.4.5.6. Students do not want to

bother or inconvenience parents or others and make them feel bad. Some too, were afraid that they would be the ones to blame for any bad experiences. For this reason they normally try to keep quiet and ignore the issue as if it does not exist, (mai pen rai). Parents / guardians and teachers advice to be safe online boiled down to being told to be good and not to do bad things. They were not exposed to online safety awareness messaging from either traditional or online media. Their knowledge of computer security like anti-malware and VPNs was very basic.

Most were open and candid during the interviews when talking about issues around cyber-bullying, watching inappropriate content and self harm. There were three in particular that struck the researcher as very telling (see section 5.3.3). The first was a 13 year old girl that had been sent a naked photo on Facebook (when she was 12) and her father seeing it and blaming her for looking at such things. That experience has convinced her that she would not 'dare tell her father' if something similar happened again. The second was a boy who had seen online content about self harm and the third another boy that was being offered money by an unknown man to a meeting, he declined and blocked them.

8.1.3 Workshops

The two early workshops played around with the active learning approach and in particular gamification elements like the use of progress bars and leader boards in the Password Challenge and competition as well as cooperation in solving messages in the Encryption Workshop. It was found that students (as well as teachers) were motivated and engaged. For the workshops in Roi Et when creating the activities active learning elements were added wherever possible. There were four workshops in Roi Et followed by a further one in Nong Khai. The action research approach was used to gauge the success or otherwise of the various activities. When discussing cyber-bullying the first three workshops did not really engage the students. Only when we introduced a short video (Figure 7.5) on cyber-bullying did they fully engage and discuss the issue. The only activity that did not really work was when they were asked to present to the rest of the class five good (advantages) and five bad (disadvantages) of being online. Due to their lack of experience in presenting in Thai and in English all presentations were fairly poor. This though can

be partly remedied by creating more activities that have a presentation element and by giving specific presentation skills training.

8.2 Cultural Challenges

Building relationships slowly over a long period of time, being relaxed and flexible i.e. jai yen and going with the flow are essential to carrying out successful research in a high-context country like Thailand (refer to section 6.4.5.2). Meetings and other arrangements can be changed or cancelled at the last minute. For example, on the first day of the survey at one school, the researcher was instead taken on an extended lunch break followed by visits to regional government offices. This, as we discussed above in the culture section (6.4.5) was a mark of respect, to get to know their guest and show hospitality. The researcher is well versed in these kinds of customs and gestures so the survey was planned to take place over a two week period. In a low context country it may have taken just a few days to achieve the same results.

In Nong Khai province there was supposed to be a third school in the survey. Tharabun and the researcher followed the same procedure as at the other schools. On the first agreed day of the survey, the researcher arrived with their Thai assistant but found no teacher and just a few students. On the second day, as well as no teacher, there were no students and a locked room. It was decided at that point to just quietly drop from doing the survey at that school. An aspect of Thai culture, we discussed above, is the avoidance of confrontation or making someone lose face. For this reason, there was never an attempt to find out the reasons why the survey could not be carried out. Tharabun did meet the teacher at an event but the issue was never discussed.

8.3 Language

To carry out research successfully in a country where you do not speak the language it is important to have local champions that understand the nature of your research. They also need to have the motivation, time, means and contacts that will enable you to achieve your objectives. In this respect the main champion was Dr Tharabun Khuchinda, a long time friend and associate of the researcher. As a teacher in Nong Khai (and until 2018 a Buddhist monk) he is well respected in the community and at

the education authorities and schools. In particular he did the majority of the translations for:

- Information sheets and consent forms
- Permission letters to education authorities
- Survey questions

Additionally he helped facilitate most of the workshops.

8.4 Logistics

8.4.1 Consent

In Thailand, it is very important to be respectful of the hierarchal formalities in place. The researcher first had to seek permission from the education authorities and then the directors of the schools involved to carry out surveys and interviews. To this end official letters were drawn up on behalf of the researcher and the University of Plymouth. This was all that was required on the Thai side.

To satisfy the University of Plymouth's policy on the ethical principles for research involving human participants, clearance had to be sought from its Science and Engineering Human Ethics Committee. A necessary condition of being granted approval was that all students and their parents / guardians had to be provided with an information sheet regarding the nature of the research and to then sign a consent form before they could participate. In practice, this meant the time spent at each school would have to be extended. Typically, students would sign their consent forms in class and then return with their parents/ guardians form over the next two or three days. At Kru Bom's school (see section 4.1.2) it was necessary to get the headman of the village involved to disseminate the information sheets and consent forms. As expected in a hierarchal society, students, parents and guardians all complied with the request and signed the consent forms. Before each survey or interview session students were again told that this was on a voluntary basis and that at any time they could stop. The only occasions when a survey would be incomplete was from technical problems and not a student not wanting to complete it.

8.5 Technical Issues

8.5.1 Survey

The initial survey was paper based. After testing it with a few students (see section 3.7.3) it became apparent that it would not be a viable way to conduct the rest of the research. This was because it took several hours over a couple of days to input all the data from just six completed surveys.

After some investigation it was decided to use the open source LimeSurvey software hosted on the researcher's own web server. This was because other solutions such as SurveyMonkey limited the number of participants without joining their payment plans. Learning LimeSurvey and converting the paper form survey took around two months of work.

When it came time to carry out the surveys it was quickly found out that if there were more than 10 students partaking concurrently connection to the survey would drop apparently randomly. This was probably a combination of bandwidth issues on the web server and the Internet connection from the schools. A system had to be worked out so that as one student finishes the next take their place. When the survey was repeated in Roi Et it was hosted on the University of Plymouth's own server and provided better stability.

Another issue that arose at the Nong Khai schools was configuring the computers to access the online survey in the first place. Initially, links were created using whichever default web browser was being used, usually either Internet Explorer or Chrome. On many computers, when you opened the web browser, pop-up ads and other extensions would load. This made using the Internet slow.

Both Nong Khai schools used a program called Deepfreeze. Whenever a computer reboots the last 'frozen' state would start up so any changes in the last session would be lost. Neither school had access to the password so the computers could not be unfrozen.

The solution was to create a Firefox portable (https://www.firefox-usb.com/). Once configured with the relevant links the Firefox portable folder could simply be copied to the target computer. The survey (configured as the home page) could then be accessed by starting Firefox from within that folder.

8.6 Gender

The YPO survey does not ask students for personally identifiable information like their name or date of birth. It does though ask for their gender. The researcher discussed with Tharabun whether options other than male and female should be considered. This was in part due to the researcher's experience in Thai schools where some boys dressed as girls (including wearing makeup) and girls had short hair and dressed as boys. This should not be confused with being gay, as some may be and others not. Thailand is well known for 'lady-boys' or kathoeys. These terms are usually applied to transgender men but not always. Brummelhuis (1999) notes that:

> *"confusingly, the term has often been translated as "homo-sexual" and it is also not uncommonly used for any kind of man who has some feminine characteristics. But with the coming into existence of a masculine gay identity in Thailand, the term is more and more used exclusively for male cross-dressers. However, in this circle it is not a particularly well-liked term that can readily be used in addressing persons. Indeed, kathoey can be a threatening term for persons who are trying to pass as females*" (p. 123).

On the face of it Thailand seems accepting of this gender fluidity. This is partly ascribed to its culture being more feminine and collectivist oriented as we discussed above in section 6.3.5. Buddhism also plays its part. Browell (2000) notes that, "within Thailand, Buddhism is still a major force in its national identity, with Theravada Buddhism emphasizing tolerance" (p. 118) and Eldridge and Cranston (2009) adds that, "Thai Buddhism encourages traits that are typical of feminine societies, such as modesty and harmonious relationships." Unlike some other religions there are no religious precepts or teachings against same-sex relationships.

Insights can be found on online education and knowledge platforms such as Quora that reaffirms the research literature. They have a specific page on the topic at hand: https://www.quora.com/Why-does-Thailand-have-so-many-ladyboys.

This is a selection of relevant comments from the page.

- Homosexuality isn't particularly well regarded in most parts of Thailand, and by one partner performing a feminine role, it makes the coupling more acceptable.
- I've spoken with many lady boys (often with a friend translating) and many of them have told me that they are neither gay, nor transgender, do it because it pays much better than the sort of manual labor they would otherwise be performing.
- Thailand is a Buddhism country, where Katoey, Gay, Bisexual, Tomgirl, Di and Lesbian are more accepted by society comparing to Christian countries, where male marries female is the only righteousness thing.
- Thai men and women are not so obviously different genders, which is why it can be difficult to spot a Katoey. The men are as already said are slender and more feminine compared to Western men who tend to very masculine looking and usually are obvious transgenders/ transvestites.
- The issue of acceptance is more complex. On the face of it, it appears Thai society is open minded. In reality the law does not accept them, unlike a number of countries in Europe. In Thailand, if you are born a man or woman, you will always be that gender by law, including being conscripted into the forces.
- I think it's just about Thai culture, no not our openness to sexuality, not our tolerant to homosexual culture (your parent can be seriously disappointed if you turn out to be lady boy), and no it is because of our natural kindness (and the kindness is not always natural).
- For any Thai, family is more important than anything else in the world ... I guess that's what make us then most feminine country in the globe, and also that's why many more ladyboys are more accepted here than anywhere else.

The comments above encapsulate the situation on gender in Thailand. There is an acceptance of people to want and act as a different gender. Being a collectivist and feminine culture (using our definition in section 6.4.5.2) family is very important as is social harmony and the difference between male and female is not so great. Added to this, Buddhism, the main religion of Thailand is neutral on the subject of gender

choice and same-sex relationships. Against this background you have laws that only recognise two genders and the one you were assigned with at birth is set for life.

That last point may be why only three of the 352 students that took part in the survey chose to select the 3rd option 'T' (transgender) when selecting gender. This is even though it was explained to them in Thai, at the beginning of the survey, that we were using the term in a very general sense. That is, for all those that do not consider themselves exclusively male or female. In future studies it may be a good idea to widen the options and have specific questions (in surveys and interviews) that addresses issues around this topic.

8.7 Evaluation of the Education Framework

At the start of this PhD project the goal was to construct an evidence-based education framework that combined theory, practice and pedagogy. It can then act as a guide to researchers and educators wanting to introduce (or redesign) an online safety awareness programme. It is feasible that the framework can be adapted more generally but the purpose of the research is to investigate online safety awareness in LDCs. Later researchers can choose to expand the framework's scope.

In this section we examine the framework and its six component parts that, when followed, will steer researchers and educators towards an education programme that is comprised of evidence based activities on relevant topics that take into account the social and cultural contexts of the target audience.

1. **Evidence:** This refers to the existing research and education programmes on online safety awareness. It is part of the literature review that should be conducted in each region. If little or no research exists, then research should be undertaken. Thailand fit into the latter case as most LDCs do and in particular the Asia-Pacific region (section 2.6). A comprehensive online survey was conducted (Chapter 4) followed by interviews of young people (Chapter 5).

   A thorough literature review was undertaken to find out the state of online safety awareness research in Thailand as well as worldwide. It was found that the Kids Online project which became the Global Kids Online project (sections 2.2, 2.3) was the leading research resource on young people's digital lives. It was decided to follow their methodology and adopt their research tools as this would then

allow for cross country comparatives (section 4.1). An online survey comprising of the same set of their questions; translated and adapted for Thailand was produced (sections 3.7.1, 3.7.2). To get a better understanding of young people's Internet use a series of interviews were conducted based on the findings of the online survey.

The research found that around nine in ten students had their own smartphone and it was their primary way for accessing the Internet (Table 4.3, Appendix D). They had many online interactions that could lead to harm with cyber-bullying the main issue; 55% having been cyber-bullied and 41% admitting to being the cyber-bully.

In all, 352 students from five schools in two provinces in the North East of Thailand took part in the survey. Therefore, the findings can be said to be representative of this region and not for Thailand as a whole. More research is needed to validate the results from this study. It does, however, provide a baseline for other researchers to follow in Thailand and other LDCs.

2. **YPO Model:** The YPO Model (Figure 2.1) is an adapted version of the Kids Online Model (Figure 3.6) which in turn is influenced by Bronfenbrenner's ecological systems theory (section 3.6.1). If one was to compare the two models side by side it is clear that the Kids Online Model is more intricate. This is because it has evolved over several years as their researchers have gained more experience over several iterations of their project (section 2.2.1). The YPO model focuses on the factors that influence the risks and benefits of being online rather than the more nuanced concepts of well-being and digital rights. In this way, it concentrates on a narrower set of factors and set a baseline that future research can expand and develop on; either the way the Kids Online Model or perhaps in a new direction, i.e. depending on the findings.
3. **Cultural Mask:** One of the limitations of the Kids Online Model is that although culture is mentioned as a country factor (Figure 2.1) it is not given prominence (section 3.6.1). This research asserts that the culture of a country and indeed the sub cultures of different social groups within a country have an impact on education (section 6.5). It agrees with Hall's (1976) assertion that in each culture there are different rules, 'norms' for learning (section 6.5.1).

When working through the YPO Model the Culture component and especially how it relates to education and learning becomes very important. For Thailand this was worked through in section 6.4.5. A similar process should be followed for other LDCs where the model and framework are applied. As mentioned in section 6.3 on the applicability of the education framework could be applied to non LDCs. However, there is already a good amount of research and education materials along with best teaching practices in advanced economies. Still, it could provide a useful framework for teaching of minority groups and cultures within those advanced economies.

4. **Topics:** Once the evidence is gathered either by reviewing existing research and / or by conducting and analysing new research a list of the issues can be compiled. Section 6.6 above outlines the themes and issues pertaining to Thailand and then compares it to existing lists from developed economies, from the UK based online resource, Internetmatters.org and an online course delivered by the European Schoolnet Academy. Cyber-bullying was the main issue that featured on all lists. For Thailand though privacy, fake news and radicalisation are not topical issues. The Thai research found that there was a general lack of awareness about computer security, knowing about malware and keeping computers and smartphones clean. This area is not listed as an issue on the two other lists.

   If the same process was undertaken in other LDCs it would inform all stakeholders of what the main issues are and also their relative weightings. In Thailand, cyber-bullying is one of the main issues. In another place it could be gaming addiction or privacy or something else.

5. **Activities:** Activities that are included were a combination of the researcher's personal experience, desktop research (section 6.7) and using the principles of active learning (section 3.4.3) especially the use of gamification elements. The activities were then incorporated into workshops. The initial two workshops were carried out in Nong Khai on the topics of passwords and encryption. They were designed to investigate whether students engaged with problem based and gamification approaches. As pointed out in section 6.5.2 much of Thai education

is in the traditional rote learning style. As it turned out the students did engage and the workshops proved successful (section 7.1).

Using the action research methodology workshops based around the subject of cyber-bullying were carried out in Roi Et and Nong Khai (sections 7.2 & 7.3). Most activities did prove successful in that students learnt more about cyber-bullying and in particular, techniques to cope (gain resilience) when it did happen. The showing of a Thai cyber-bullying video followed by a whole class discussion was one of the highlights. Students were initially hesitant to speak but then quickly opened up. The least successful was the preparing and delivering of a presentation on the good and bad aspects of being on the Internet.

Future work will need to build upon and expand the number of activities in Thailand. They can also work as a starting point for others that would like to employ the framework.

6. **Applicability Matrix:** The Applicability matrix can be used by educators as a guide to the suitability of an activity for their environment in terms of; age, class size, resources needed and cultural context. This last point would need to be adapted for each LDC it is applied to, i.e. by working through the YPO model. The matrix provides readymade activities that have been road tested. Currently there are only a few activities listed and therefore future work is needed to both expand the number of activities and its applicability in other LDCs.

Whereas the Kids Online Model was designed for researchers the YPO education framework goes further. It offers researchers and educators a systematic approach in designing online safety awareness education programmes. This research too proceeded in a systematic way; determining a sound methodological approach, gathering the evidence, investigating pedagogical best practices, ascertaining relevant topics and testing out activities. Sections 8.2 to 8.6 above detail some of the issues / constraints including the language barrier, technical issues and logistics. In addition, the 352 students surveyed are all from two semi-rural provinces in the North East of Thailand. To get a comprehensive picture of the online attitudes and behaviour of Thai youth, surveys and interviews should be carried out in other regions including the urban areas. This is discussed below in section 9.2 and 9.4. This will then increase the validity of the framework and its utility.

8.8 Conclusion

This chapter reflects on the work that went into testing the proposed framework. A brief overview of the findings from the surveys, interviews and workshops followed by discussions of some of the considerations that the study had to take account of, especially cultural ones. As well, there were some technical issues that had to be overcome like the survey platform and computer resources at schools. Also discussed was the unexpectedly low numbers that identified as non-binary (i.e. not either male or female) and why that may be.

The education framework was then evaluated by stepping through and discussing each of its components in turn. Next, in the final chapter we discuss the contribution of this research project as well as the limitations and possible future work and development of the education framework.

9. Conclusion

This research aimed to create an education framework that would lead to effective online safety awareness education programmes in LDCs. The education framework is not only a theoretical construct based on good pedagogical and evidential grounds, it is also a vehicle that delivers practical resources (approaches and activities) researchers and educators can pick up and use. This is, as stated above in section 8.7, in contrast to the Kids Online Model which is primarily for researchers and policy makers.

To be effective, the researcher agrees with, Mascheroni and Cuman (2014) that parents and teachers should engender an online resilience in children. There are both opportunities and risks on the Internet but whether the latter will lead to actual harm depends on the child's resilience and coping mechanisms including who to talk / report to. A good education programme should have this as the core principal and aspiration.

9.1 Contributions of the Research Project

9.1.1 Research Contribution

As far as the researcher is aware, at the time of writing, this is the only major work of its kind undertaken in Thailand. It will be the first source to provide evidence based research on the online attitudes and behaviour of young people and in particular the ones that are potentially harmful. Initially, the education framework is aimed at 12-18 year olds as that was the demographic under study. It is derived from working through the YPO model as part of the YPO Education Framework and structured around relevant online safety awareness topics and activities. The research is exploring existing and new approaches of delivering the material that will be impactful, effective and engages students in a positive manner.

9.1.2 Aims & Objectives Revisited

Section 1.2 above lists the aims and objectives of this study. This section will discuss to what extent they have been achieved.

9.1.2.1 *Conduct a critical review of research studies on online safety awareness in different countries.*

A comprehensive literature review was undertaken of studies associated with young people's engagement with the online world (see Chapter 2). The leading research is by the European Kids Online Project which is now part of the Global Kids Online Project. As of early 2020 results were coming in from a number of LDCs including; Argentina, Brazil, Bulgaria, Chile, Ghana, Montenegro, the Philippines, Serbia, South Africa and Uruguay. Only two of them, Brazil and South Africa have established research studies and these were the ones discussed. In the Asia-Pacific region there is a dearth of quality research most of which focus on how people should be good digital citizens. Internet addiction and gaming are issues but potentially harmful interactions such as cyber-bullying and looking at inappropriate content (e.g. hate talk, self-harm, sexual, violence) are little discussed or researched. This research gap provides the main motivation and reasoning for the study as well as the lack of education programmes in LDCs that centre on issues around online safety.

9.1.2.2 *Design a research approach and conduct an investigation to determine the factors that influence online attitudes and behaviour of young people.*

There were three lines of investigation that this research explored:

- Online safety issues within an LDC
- Effective teaching methods
- The impact of culture on education

Each required a different approach. To determine the issues that young people faced while online the explanatory mixed methods design (section 3.3.1) was employed. This involved a quantitative survey which then informed the content for the qualitative part, i.e. the student interviews.

The quantitative survey comprised of 352 students from five schools in two Thai provinces, Nong Khai and Roi Et (see Chapter 4). Once analysed, interesting (e.g. students sharing their passwords) or seemingly anomalous (e.g. parent and teacher advice) findings are used in the qualitative part of the study, the interviews (see Chapter 5). In all, 25 students were interviewed. This provided enlightening information such as boyfriends and girlfriends (or close friends) sharing passwords as a mark of trust. Although students said (in the survey) that they did get advice

from parents and teachers it was very basic like, ‘be good and don’t do bad things on the Internet’. The interviews provided stories of Thai young people’s experiences online which provided context to the statistics. For example, as well as knowing that 69% of young people have been upset by an online interaction we now also know some of the ways this happens.

For the second line of investigation, effective teaching methods (discussed more fully in the next objective summary) it was tackled both theoretically via desktop research and practically by following the action research approach.

For the impact of culture on education this was drawn upon the researcher’s personal experience and desktop research. In particular, section 6.4.5 which looked at theoretical aspects of culture such as Hall’s Iceberg concept of culture and descriptions of high-context and low context cultures. There followed a discussion on Hofstede’s four dimensions of culture; measure of individualism, power distance, measure of masculinity (and femininity) and uncertainty avoidance. Then these theories were applied to the Thai context and especially in the classroom.

9.1.2.3 Investigate educational practices on effective approaches for teaching online safety awareness.

For any proposed education framework to be effective its pedagogical underpinning needs to be sound. Desktop research was conducted looking at educational best practices and innovations. One of the most promising areas is the use of gamification techniques (section 7.1.2) which employs elements of game design to enhance learning outcomes. This includes both competitive and cooperative elements such as using game-like rules, awarding points (or stars or badges) and leaderboards. The password challenge and encryption (secret messages) workshops were two early and successful attempts at introducing gamified lessons. The former used a password meter (0-100 strength) and a leader board (section 7.1.2). The latter challenged the students puzzle solving and teamworking skills in deciphering secret messages (section 7.1.3.1).

For the later workshops (after the initial survey and round of interviews) the action research approach was used to find out what kinds of activities were effective in exploring the topics of cyber-bullying and online safety (section 7.2, 7.3). At the end of the iterative process it was found that students engaged very well when they had

to be proactive. For example, section 7.2.7 describe how students, tasked with writing an online activity on the board (with no repeats) quickly realised it would be easier to be one of the first few rather than the last ones as it becomes progressively more difficult to come up with something new. This is in contrast to the first workshop where they were simply asked what they did online while one of the facilitators wrote on the board. The most successful aspect was the showing of a Thai cyberbullying video (Figure 7.5) and the subsequent discussion that it invoked from the students. The least successful aspect was to get them to create a presentation on the good and bad aspects of being online and then presenting it to the rest of the class. The Thai students in this research study were not used to doing this kind of activity and therefore more attention and resources may perhaps be required. Overall, the workshops provided a good introduction to online safety and in particular, the issues around cyber-bullying.

9.1.2.4 Develop an integrative security education framework for online safety awareness in LDCs.

At the heart of the proposed online safety awareness education framework, (Figure 6.1) is the YPO model (Figure 3.6). To gain understanding of which online safety topics are important and the types of activities that are best suited for a particular LDC one needs to work through each of the constituent parts of the YPO model. By doing so it gives us an evidence based position on the attitudes and behaviour of young people online and the risks (that can potentially lead to harm) and benefits. An important factor is the cultural makeup of the LDC and in particular its impact in the education sphere. This forms the ‘Cultural Mask’ component within the framework and determines the cultural considerations educators and policy makers need to take account of when deciding the topics and activities for an education programme and how best to deliver it. The framework combines educational research, best pedagogical approaches and practical activities that educators, researchers and policy makers can utilise for their respective needs.

9.1.2.5 Determine topics and activities to be included in the education framework.

The topics that get into an LDC’s education programme are determined by in-country research on young’s people digital lives. In Thailand there were no existing research studies (known to the researcher) of how and when young people went online or

what they were doing and how long they spent. An online survey followed by interviews produced a list of the main issues that Thai young people face, (categorised in section 6.6). The findings were compared and contrasted with existing resources pertaining to online safety. The issue of cyber-bullying is prominent on all lists. Others like hate speech and radicalisation are deemed important by the European Union linked institution, European Schoolnet academy but were largely missing as issues in the Thai study. Part of the reason is that in Thai society the aim is to promote social harmony (section 6.4.5.6, kreng jai). Even when there is conflict it is often brushed aside as if it did not exist (section 6.4.5.10, mai pen rai). This demonstrates that applying the cultural mask can enhance our understanding of why topics might be included while others are not and inform us how best to approach them.

Activities are also informed by the cultural mask. In the workshops conducted for this study (chapter 7) several different types of activities were explored. In Thai classrooms as in society there is a hierarchal structure (section 6.4.5.7) with the teacher the voice of authority and knowledge. Students are generally there to receive information, to write it down, memorise and in exams to reproduce it. However this is slowly changing. There are a few schools now that subscribe to the Sufficiency Economy Philosophy (section 6.5.3). Lessons are student centric and problem based with teachers acting as guides to learning and discovery rather than a repository of information. Classes and workshops utilising elements of gamification (section 7.1.2) fits in well within this approach and may well be suitable for all online safety education initiatives. As was done in Thailand, this would need to be investigated to determine its efficacy.

One of the key considerations for any activity will be that they should be designed so that they can be used in rural areas of LDCs. Expensive software, services or other resources should be avoided. Internet is now available mostly everywhere but not high speed Internet so any online resources used need to factor this in. Most young people in LDCs interact with the online world via smartphones and especially so in Thailand (section 4.1.6 & 4.2.3) where 90% of young people have their own smartphone. Although many do not have computers at home they do encounter them at school so awareness around the use of them is still needed.

9.1.2.6 Evaluate the education framework and its novel contribution.

One of the reasons to adapt the European Kids Online model and include it within the education framework was that we could use the same core questions that they provide to all researches. They have given access to their research tools precisely so cross country comparisons can be made. Section 4.1.3 gives a comparative between the Nong Khai survey and the European surveys. It was found that Thai young people; spent a lot more time on their smartphone, it was usually their only means of connecting to the Internet, and had more online interactions that were potentially harmful. One caveat to these findings is that the Nong Khai survey was in 2016 whereas the European ones were from two surveys 2010 and 2014 respectively. It will be interesting to compare their latest findings which at the time of writing is not yet released. However, the amount of time Thai young people are spending online together with the high number of potentially harmful interactions is concerning and warrants further investigation and education programmes to tackle the issues.

The cultural mask (section 6.5) represents the novel contribution within the YPO education framework. The central premise is that you should not take a copy and paste approach from another country's awareness programme even if outwardly they seem to be culturally similar. Furthermore, most existing education programmes and activities have been developed in advanced countries. Simply transposing a programme from elsewhere may or may not work. This uncertainty can be mitigated by working through the YPO Education Framework as outlined in chapter 6.

Theoretical models of culture were explored in section 6.4.5 when discussing the YPO model including cultural differences, misunderstandings and miscommunications which can lead to conflict. Then followed a discussion on how Thai culture effects education in schools. This is explored further in section 6.5 where it is proposed that an online safety awareness programme could fit in well with the Thai government's initiative for schools. It's called the Sufficiency Economy Philosophy and centres on student-centric, active learning strategies. By co-opting the Thai government's principles of the Sufficiency Economy Philosophy and incorporating it in the resulting education programme gives it a better chance of

being adopted and utilised. For this reason, it is worthwhile to put in the time and effort in learning and adapting to each LDC's cultural mask not least because you will be less susceptible to making a cultural faux pas.

Now we are at the end of this research period there is a body of work which includes; data on online awareness issues in Thailand, the start of an education programme that addresses these issues and an evaluation of the effectiveness of the initiatives. The research will inform researchers, educators and policy makers. It is hoped that these stakeholders will be motivated to expand the research scope, improve the education framework, create new education material and implement policies that will enhance the online experience of young people. This process is ongoing and cumulative with each piece of research or education programme building from earlier ones. The outcome will be to enable young people to have mostly positive interactions online and be resilient (i.e. be able to cope) with negative experiences especially potentially harmful interactions.

9.2 Limitations of the Research

This five-year research project was conducted in the field in the North East of Thailand. It has been a very rewarding learning experience in many respects however there were some limitations that need to be noted:

- The research was self-financed. As such a pragmatic approach was taken and costs minimised wherever possible.

- Not being a fluent Thai speaker also meant reliance on the kindness and generosity of others for translating, arranging meetings, transport and facilitating workshops. Thankfully, there were a number of people including university and school directors and teachers who were interested in the project who were motivated and willing to give their time, resources and effort. Special mention has to go to Tharabun who was the main collaborator without whom it would have been very difficult to carry out the research.

- The number of students that took part in the survey was 352 from five schools in two regions. Ideally, it would have been good to get more students and

ones from urban areas. Although communication was made with a number of other schools in different districts it did not lead to them taking part. While it would have been preferable to have a larger sample size, the researcher is confident that the main findings are representative of young people, at least for North Eastern Thailand. This area is commonly referred to as Isan and is largely semi-rural. The findings therefore may not be representative of urban areas like Bangkok.

9.3 International Comparison

A research team in South Africa from the University of Fort Hare are planning to conduct similar research. To this end they visited the researcher in Nong Khai as well as the schools taking part in the survey. At the end of the visit it was decided that there are enough similarities between the two regions, i.e. Nong Khai in Thailand and East London, Eastern Cape, South Africa that a comparative of the attitudes, awareness and behaviour of the young people would be interesting. Time wise they are at the start of their research process and the researcher will endeavour to assist in any way possible.

9.4 Future Work

The findings of this research set a baseline for future endeavours both in Thailand and in other LDCs. It is hoped that other researchers and educators will be motivated to use the findings and education material to do their own research and extend and expand the scope of online safety awareness education. This has already started to happen with interest from South Africa (section 9.3 above).

9.4.1 Cooperation with Government, Universities and Other Institutions

It is expected that the YPO model employed (Figure 3.6) and the YPO education framework (Figure 6) will be further developed especially in relation to factors that impact on young people's online use like cultural norms and ease of access.

To achieve this, the researcher intends to cultivate new and established relationships with universities. The most promising is a possible future collaboration with Ruthaychonnee (Ruth) Sittichai (cited 3.7.2, 4.1.7) of Prince of Songkla University's Children and Youth Research Unit. After presentations and discussions they are

interested in both conducting surveys and carrying out workshops. The university is situated in Hat Yai in the south of Thailand where there is a significant Muslim population. If surveys were extended to schools in this region it would make for an interesting comparison with the findings from the North East of Thailand.

Through Ruth the researcher has also had discussions with researchers at Thammasat University in Bangkok and a youth researcher in Chiang Mai. Further collaboration with Roi Et Rajabhat University is also an avenue that can be explored.

The research findings will be sent to UNESCO Bangkok, UNICEF and the Global Kids Online project. All three are aware of this research project and it is hoped it will be of use to them.

9.4.2 Workshops

More workshops similar to the exploratory ones on online safety, passwords and encryption will be developed. Other approaches, some of which have been described above in the literature review will be considered, for example:

- Talking workshops: Where students are encouraged to discuss their positive and negative experiences and to maybe come up with recommendations or guidelines themselves.
- Poster competition
- Online safety video competition
- Role Playing: Using drama to promote online safety messages
- Events: Promote activities around Safer Internet Day (https://www.saferinternetday.org/) and other safety focussed events

After running a number of activities follow up surveys can be carried out to check if attitudes and behaviour do change. With all of these activities we can use the action research approach. This will mean school teachers becoming active participants in the research. Their observations to the effectiveness or otherwise of the activities will provide useful feedback. Of course the most important stakeholders are the young people themselves and their participation and feedback will be valuable to direct the activities.

9.4.3 Open Research Questions

9.4.3.1 Tackling cyber-bullying

One of the main findings in this research is the prevalence of cyber-bullying. There is a strong cultural resistance to talk about problems (section 6.4.5.6). Because of this 'kreng jai' students do not want to inconvenience others especially parents and teachers with information that the latter would not want to hear. In the early workshops there was some reticent from students in talking about their negative online interactions. This was lessened somewhat when a cyber-bullying video was shown to them (Figure 7.5). Other ways need to be found to engage students and this aspect will need to be addressed in future workshops.

At the school level material should be created including best practice guides on policies and rules. Teacher and parent guides on online safety and cyber-bullying awareness would prove useful too. This will require engagement with education authorities which will be sought.

9.4.3.2 Transgender and Online Safety

This issue was discussed above in section 8.6. In our survey only three of the 352 respondents self-identified as transgender. Therefore no inferences could be made as to whether they face a greater (or different) threat from online interactions than other young people. It would be useful for a research project to look into this issue with the aim of creating material that focuses on this target group, i.e. if it is needed.

9.4.3.3 Online Privacy

In section 6.4.5 we discussed Thailand's culture and it being a collectivist society and in section 6.4.4 how out of a population of 69 million 82% are online and 67% are on Facebook. It's not an overstatement to say that Thai's have taken to the Internet and especially social media in a big way. This research did not delve into the question of privacy and how it is viewed in a collectivistic country such as Thailand compared to an individualistic one such as the UK. When we tried to ask questions about how they used the Internet different when in private a common reply was that they did not like it. They prefer to be with other people and to be alone seems to be an alien concept. A Thai travelling with the researcher in Sweden once asked,

"where are all the people?" It would be interesting for a specific research project to look at the relationship between privacy and culture. In particular, if given information on what is being collected from your smartphone, how you are being tracked and how it is being used without your explicit consent, will it change a person's behaviour?

9.4.3.4 Link between number of Facebook Friends and Risky behaviour

In section 4.2.3 we noted that from the findings of the YPO survey the average number of Facebook friends for boys was 888 and for girls 1548. Furthermore, 13% of boys and 33% of girls had between 2000 and 5000 friends. It would be interesting to find out the following:

- Why young people in Thailand have large number of Facebook friends
- Why is there a gender difference in the number of Facebook friends
- Is there a correlation between the number of Facebook friends and potentially harmful behaviour

9.4.4 Gamification of the Online Safety Education Programme

We have discussed how using elements of gamification can enhance workshops. The programme itself could be gamified. For example, each theme / topic could offer points or badges for attending workshops, completing tasks and assignments. At different levels a badge or certificate of achievement can be gained. The badges and certificates could be digital (so they have it on their smartphones), physical badges (like for scouts) or a combination of both. The purpose is to drive engagement, understanding of the issues and ultimately enhance their well-being by building resilience.

9.4.5 Teacher Training

Online safety is not currently being taught in schools. Therefore, together with education authorities, training material can be created and delivered to teachers. The researcher has already discussed with Tharabun about creating a teacher training course for delivering online safety awareness workshops. They both have experience in doing such workshops. All teachers in Thailand are given vouchers for their educational development and there exists a teacher development programme that can be tapped into.

9.5 Concluding Remarks

Technological change continues to advance apace bringing with it new innovations, new services and new ways for people to interact; in the home, at school, at work and on the move. In the near future we will be living in smart homes in smart cities, meaning everything will be inter-connected and online.

While our relationship with technology will continue to evolve our human motivations, behaviour and habits will largely remain the same. It just may be heightened as increasingly people live their digital lives around the clock.

This makes the topic of online safety awareness education even more urgent today. The goal is to deliver effective and meaningful programmes that build young people's resilience against negative online interactions while promoting the benefits and opportunities that the digital world can bring. For this to take place these programmes needs to understand their target audience as well as the most appropriate and culturally relevant approaches in terms of both the material and teaching practice. Even countries that may perhaps look the same on the surface can have different cultural norms (section 6.4.5). For each country it is applied to, the YPO Education Framework requires researchers and educators to take account of cultural factors and then use it as a Cultural Mask (section 6.5) to inform all teaching approaches, topics and activities. This can be in LDCs and non LDCs however most of the existing research and programmes are from non LDCs and therefore it is pertinent to focus the framework on the former.

In countries like Thailand, while there is talk of cyber security and cybercrime, online safety awareness for young people is little thought of and discussed even though it has become one of the most connected countries in recent years (Figure 6.2). It is important to raise awareness of the issue and get the relevant stakeholders involved. As discussed above in section 9.4 the researcher plans to build upon this work and expand it to other areas of Thailand. Integral in this, is to engage universities, education authorities and other interested parties in developing effective online safety awareness education in Thailand at first and then in other LDCs.

Lastly, this research is the culmination of five years of research. There were two main objectives, the first was theoretical and the second practical:

- to provide an evidence-based education framework for the effective teaching of online safety awareness in LDCs
- Teaching material and activities delivered as workshops that will be available to all to freely use

In the researcher's view both of these objectives have been met. It was important to the researcher to not do a purely theoretical piece that would inform other researchers and educator but to also provide practical evidence-based and 'road tested' activities that could be useful in the teaching of online safety awareness.

10. References

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Appendix A: Survey of Online Activity in Thailand

Survey of online activity in Thailand

Age: _____ Class: _____

Gender: M ☐ F ☐ T ☐

School: _____

Example

How often do you do the following?

	Many Times Every Day	Every Day	Every week	Less Often	Never	Don't Know
Eat Chocolate		✓				
Watch Movies					✓	

Access & Use

1. **How often do you go online or use the internet at the following places?**

	Many Times Every Day	Every Day	Every Week	Less Often	Never	Don't Know
Your bedroom						
At Home						
At School						
Outside						
Cafe / Eating Place						

2. **About how long do you spend online on an ordinary school day?**
   Tick the number of hours per day.

0	1/2	1	2	3	4	5	6	7	8+	Don't Know

3. **About how long do you spend online on a non-school day (weekend or holidays)?**
   Tick the number of hours per day.

0	1/2	1	2	3	4	5	6	7	8+	Don't Know

1

4. How often do you use the following devices to go online?

		Many Time Every Day	Every Day	Every Week	Less Often	Never	Don't Know
	Computer						
	Notebook						
	Smartphone						
	Tablet						
	E-book reader						
	Games console						
	Television						
	Other handheld devices						

5. How often have you done the following in the past month?

		Many Times Every Day	Every Day	Every Week	Less Often	Never	Don't Know
	Used internet for school work						
	Watched video clips						
	Watched music or films online						
	Read/watched the news online						
	Sent/received email						
	Facebook free call						
	Facebook group chat						
	Facebook Like						
	Facebook Tag						
	Facebook Comment						
	Shared a celebrity/sports person's story on Facebook						
	Played multi-player games online						
	Played single-player online games (include against computer)						
	Played in a virtual world e.g. minecraft						
	Made a Skype video call						
	Written a blog or online diary						
	Taken a photo and posted it online						
	Posted a video or music file to share with others online						
	Used file sharing sites						

Activities & Skills

6. Do you have your own smartphone?

Yes	No

7. If you have a smartphone how often have you done the following in the past month?

		Many Times Every Day	Every Day	Every Week	Less Often	Never	Don't Know
	Downloaded free Apps						
	Paid for downloading apps						
	Looked up maps / timetables						
	Listened to music online						
	Used Facebook Check-in						
	Read QR codes/scan barcodes						
	Read an E-book						
	Used a search engine						
	Bought things online						
	Watched TV/Movie						

8. If you have a smartphone how often have you used the following in the past month?

		Many Times Every Day	Every Day	Every Week	Less Often	Never	Don't Know
	Facebook						
	Facebook Messenger						
	Google						
	WhatsApp						
	Instagram						
	LINE						
	Viber						
	Twitter						
	WeChat						
	BeeTalk						
	Camfrog						

	Other Apps	

9. If you have a Facebook account about how many friends do you have? _____

10. How many times are you in contact with the following using your smartphone?

	Many Times Every Day	Every Day	Every Week	Less Often	Never	Don't Know
My parent(s)						
My brother(s) or sister(s)						
My friends						
My relatives						
People I know through just internet						
Teachers						

11. Which of these things do you know how to do on a smartphone or tablet?

	Yes	No	Don't Know
Download apps			
Deactivate the function showing your location			
Connect to a WiFi network			
Block push notifications from apps			
Block pop ups which promote apps, games or services you have to pay for			
Protect a smartphone with a PIN or with a screen pattern			
Update your status on social networks			
Find information on how to use smartphones safely			
Compare different apps with similar functions in order to choose the one that is most reliable			

Risks & Outcomes

12. In the past 12 months, how often have you seen or experienced something online that has upset you?

Never	1 - 2 Times	A Few Times	Many Times	Don't Know

13. If you have seen or experienced something online that has upset you in some way, did you talk about it with anyone?

		Yes	No
	My mother or father		
	My brother or sister		
	A friend		
	A teacher		
	The Police		
	Another adult I trust		
	Someone else		
	Don't know		

14. In the past 12 months has someone acted to you in a hurtful way online and if so, how upset were you?

Yes, Very Upset	Yes, A little upset	Yes but not upset	No	Don't Know	Prefer not to say

15. How often has someone acted in this kind of way towards you online in the past 12 months?

Never	1 - 2 Times	A Few Times	Many Times	Don't Know

16. If someone has acted to you in this kind of way, how did it happen? *(Tick all that apply)*

	By mobile phone calls	
	By messages sent to me on my phone (SMS/TEXT or MMS)	
	On a social networking site (e.g. Facebook, Twitter etc.)	
	On a media sharing platform (YouTube, Instagram, Flickr)	
	By instant messaging (LINE, What's app, Skype etc.)	
	In a group chat	
	By e-mail	
	In a gaming website	
	Other	
	I haven't experienced this	
	Don't know	
	Prefer not to say	

17. In the past 12 months, have you ever behaved in this way to someone else and if so, how? ***(Tick all that apply)***

	By mobile phone calls	
	By messages sent to me on my phone (SMS/TEXT or MMS)	
	On a social networking site (e.g. Facebook, Twitter etc.)	
	On a media sharing platform (YouTube, Instagram, Flickr)	
	By instant messaging (LINE, What's app, Skype etc.)	
	In a group chat	
	By e-mail	
	In a gaming website	
	Other	
	I haven't experienced this	
	Don't know	
	Prefer not to say	

18. How often have you acted in this kind of way in the past 12 months?

Never	1 - 2 Times	A Few Times	Many Times	Don't Know

19. In the past 12 months, have you seen any sexual images online (on computer or phone) and if so how upset were you by what you saw?

Yes, Very Upset	Yes, A little upset	Yes but not upset	No	Don't Know	Prefer not to say

20. How often have you seen these things in the past 12 months?

Never	1 - 2 Times	A Few Times	Many Times	Don't Know

21. In the Past 12 months have you seen these online?

		Yes	No	Don't Know
	People talking about physically harming or hurting themselves			
	People talking about committing suicide			
	People talking about ways to be very thin			
	Hate messages that attack certain groups or individuals			
	People talking about taking drugs			
	Gory or violent images			

22. In the past 12 months, has any of the following happened to you on the internet?

		Never	1 - 2 Times	A Few Times	Many Times	Don't Know
	Somebody used my personal information in a way I didn't like					
	Computer got a virus					
	Smart phone got a virus					
	Somebody used my password to access my information or to pretend to be me					
	Somebody created a page or image about me that was hostile or hurtful					

23. **Have you done any of the following things in the past 12 months? If yes how often have you done each of these things?**

		Never	1 - 2 Times	A Few Times	Many Times	Don't Know
	Looked for new friends on the internet					
	Sent personal information (e.g. my full name, address or phone number) to someone that I have never met face to face					
	Added people to my friends list or address book that I have never met face to face					
	Pretended to be a different kind of person on the internet from what I really am					
	Sent a photo or video of myself to someone that I have never met face to face					

24. Has your father, mother or guardian ever done any of these things with you?

		Yes	No	Don't Know
	Helped you when something is difficult to do or find on the internet			
	Suggested ways to use the internet safely			
	Explained why some websites are good or bad			
	Suggested ways to behave towards other people online			
	Helped you in the past when something has upset you online			
	Talked to you about what to do if something online has upset you			

25. Has any teacher at your school ever done any of these things?

		Yes	No	Don't Know
	Helped you when you found something difficult to do or find on the internet			
	Suggested ways to use the internet safely			
	Encourage you to explore and learn things on the internet?			
	Talked to you about what you do on the internet			
	Explained why some websites are good or bad			
	Suggested ways to behave towards other people online			
	Made rules about what you can do on the internet at school			
	Helped you in the past when something has upset you online			
	Talked to you about what to do if something online has upset you			

Thank You Very Much for Taking Part! ☺

Appendix B: Consent Forms and Information Sheets

หนังสือยินยอมของผู้ปกครองตอบแบบสอบถามความคิดเห็นนักเรียนเกี่ยวกับพฤติกรรมการใช้อินเทอร์เน็ตของเยาวชน (Young People Online)

แบบฟอร์มนี้ใช้สำหรับบิดามารดา/หรือผู้ปกครองเป็นผู้ตอบคำถาม (Parent/Guardian Consent Form)

ก่อนที่ท่านจะอนุญาตให้บุตร/หรือธิดาตอบแบบสอบถาม กรุณาตอบคำถามด้านล่างนี้ด้วย

(Before you give your consent for your son/daughter to take part in the survey please answer the questions below)

ท่านได้อ่านคำชี้แจงสำหรับผู้ปกครองแล้ว (Have you read the parent/guardian information sheet?)	ใช่ (Yes) ☐
ท่านทราบใช่หรือไม่ว่า มีคำถามที่บุตร/ธิดาของท่านจะตอบเกี่ยวกับความไม่สบายใจที่เกิดจากการได้เห็นเนื้อหาเกี่ยวกับความรุนแรงหรือเนื้อหาพฤติกรรมทางเพศในโลกออนไลน์ (Do you know that there are questions about whether your son/daughter has been upset online and if they have seen violent or sexual content online?)	ใช่ (Yes) ☐
ท่านทราบใช่หรือไม่ว่า บุตร/ธิดาของท่านมีอิสระในการหยุดตอบคำได้ทุกเมื่อ (Do you know that they are free to stop the survey at any time?)	ใช่ (Yes) ☐
ท่านทราบใช่หรือไม่ว่า ถ้าบุตร/ธิดาของท่านรู้สึกไม่สบายใจระหว่างตอบคำถาม พวกเขาสามารถหยุดและแจ้งเรื่องนั้นต่อครูได้ (Do you know that if your son/daughter becomes upset during the survey they can stop and talk to a teacher about it?)	ใช่ (Yes) ☐

ถ้าท่านได้ตอบคำถามครบทุกข้อแล้ว กรุณากรอกรายละเอียดด้านล่างและเซ็นอนุญาตและพับใส่ซองปิดผนึกส่งคืนครูที่ปรึกษาด้วย

(If you have answered yes to all the questions please fill out your details below, sign it and put it in the envelope provided and hand to your son/daughter's teacher.)

ข้อมูลเกี่ยวกับบุตร/ธิดาของท่าน (ข้อมูลนักเรียน) (Information about your son/daughter)

ชื่อนักเรียน (Name)	
อายุ (Age)	
โรงเรียน (School)	
ชั้น ม. (Class)	

ข้อมูลของท่าน (ข้อมูลผู้ปกครอง) (Your details)

ชื่อ (Name)	
ที่อยู่ (Address)	

ลายเซ็น (Signed by) **วัน/เดือน/ปี** (Date)

คำชี้แจงเกี่ยวกับการสอบถาม เรื่อง การใช้อินเทอร์เน็ตของเยาวชน
(Young People Online)

คำชี้แจงสำหรับบิดามารดา/หรือผู้ปกครอง (Parent/Guardian Information Sheet)

คำชี้แจงต่อไปนี้จะช่วยประกอบการตัดสินใจในการอนุญาตให้บุตร/ธิดาของท่านตอบแบบสอบถาม

1. แบบสอบถาม เป็นการสอบถามเกี่ยวกับอะไร

   เป็นการสอบถามเด็กและเยาวชนเกี่ยวกับการเข้าถึงอินเทอร์เน็ต รวมทั้งสถานที่ใช้งานและสิ่งที่กระทำในการออนไลน์แต่ละครั้ง

2. ใครเป็นผู้ทำการสอบถาม และสอบถามไปเพื่ออะไร

   การสอบถามนี้ดำเนินการโดยนักศึกษาดุษฎีบัณฑิต(ปริญญาเอก)ที่กำลังศึกษาอยู่มหาวิทยาลัยพลีเมาธ์ (Plymouth University) คำตอบของเด็กเยาวชนจะช่วยเป็นข้อมูลให้ผู้มีผู้ส่วนเกี่ยวข้องและนักวิชาการในการวางแผนกำหนดนโยบายและออกกฎหมายต่างๆ และผลิตสื่อการสอนที่สอดคล้องกับการใช้บริการในโลกออนไลน์ได้อย่างถูกต้องเหมาะสม

3. ข้อมูลอะไรที่ผู้วิจัยต้องการเก็บรวบรวมจากบุตร/ธิดาของท่าน

   การสอบถามนี้ถือเป็นความลับ ผู้วิจัยจะเก็บรวบรวมข้อมูลเฉพาะอายุ เพศ และสถานศึกษา คำตอบของนักเรียนจะไม่ส่งผลกระทบใดๆ ต่อตัวนักเรียน

4. ผู้วิจัยจะดำเนินการสอบถามอย่างไร

   ถ้าท่านอนุญาตให้นักเรียนใช้เวลาว่างจากการเรียน (เช่น พักเที่ยง) นักเรียนหรือกลุ่มนักเรียนจะได้เข้าสู่ระบบการตอบแบบสอบถามออนไลน์ผ่านคอมพิวเตอร์หรือแท็ปเล็ตที่ได้จัดเตรียมไว้ให้ โดยจะมีครูอย่างน้อยหนึ่งท่านคอยกำกับดูแลตลอดเวลา

5. ลักษณะของคำถามเป็นอย่างไร

   คำถามส่วนใหญ่จะสอบถามเรื่องทั่วไป เกี่ยวกับการใช้อินเทอร์เน็ตของเด็กเยาวชน แต่อาจจะมีคำถามบางส่วนที่ถามเกี่ยวกับความไม่สบายใจ(หรือความไม่ชอบใจ)เกี่ยวกับบางสิ่งหรือบางคนกระทำในโลกออนไลน์ที่มีเนื้อหาเกี่ยวความรุนแรงหรือปัญหาทางเพศ

6. ถ้าฉันยินยอมให้บุตรหลานตอบแบบสอบถาม แต่พวกเขาต้องการหยุดตอบคำถามในระหว่างที่ยังตอบไม่เสร็จได้หรือไม่

   สามารถกระทำได้ทันที นักเรียนสามารถแจ้งต่อครูเมื่อพวกเขาต้องการหยุดและยุติการตอบคำถาม

7. ถ้าในระหว่างที่นักเรียนตอบแบบสอบถาม แล้วเกิดความรู้สึกไม่สบายใจ จะเป็นอย่างไร

   ผู้วิจัยหวังว่า จะไม่เกิดเหตุการณ์เช่นนั้นขึ้นมา แต่ถ้าหากเกิดเหตุการณ์ดังกล่าวขึ้นกับนักเรียนคนใด นักเรียนสามารถแจ้งต่อครูให้ทราบว่าตนไม่สามารถดำเนินการต่อได้ อย่างไรก็ตาม ครูสามารถอธิบายพูดคุยกับนักเรียนเกี่ยวกับเหตุผลและความเข้าใจเพิ่มเติมกับสิ่งที่จะดำเนินการต่อไปได้

8. ฉันจะสะท้อนความคิดเห็นต่อการสอบถามได้อย่างไร

   ตามที่ได้แจ้งเบื้องต้นว่า การสอบถามนี้เป็นการดำเนินการด้วยการรักษาความลับของนักเรียน ดังนั้น นักเรียนจะไม่ได้ผลสะท้อนกลับเป็นรายบุคคล อย่างไรก็ตาม เมื่อการสอบถามเสร็จสิ้น ผลการวิเคราะห์ข้อมูลจะถูกนำไปใช้เป็นข้อมูลในการพัฒนาการเรียนการสอนเพื่อสร้างความตระหนักในการใช้งานออนไลน์ในโรงเรียนที่นักเรียนกำลังศึกษาอยู่ต่อไป

หนังสือยินยอมของนักเรียนตอบแบบสอบถามความคิดเห็นเกี่ยวกับพฤติกรรมการใช้อินเทอร์เน็ตของเยาวชน (Young People Online)

แบบฟอร์มนี้ใช้สำหรับนักเรียนในการตอบคำถาม (Student Consent Form)

ก่อนที่นักเรียนจะยินยอมให้ความร่วมมือในการตอบแบบสอบถาม กรุณาตอบคำถามด้านล่างนี้ด้วย

(Before you give your consent please answer the questions below)

นักเรียนได้อ่านคำชี้แจงแล้ว (Have you read the student information sheet?)	ใช่ (Yes) ☐
นักเรียนทราบใช่หรือไม่ว่า จะมีคำถามเกี่ยวกับความไม่สบายใจที่เกิดจากการได้เห็นเนื้อหาเกี่ยวกับความรุนแรงหรือเนื้อหาพฤติกรรมทางเพศในโลกออนไลน์ (Do you know that there are questions about whether you have been upset online and if you have seen violent or sexual content online?)	ใช่ (Yes) ☐
นักเรียนทราบใช่หรือไม่ว่า นักเรียนมีอิสระในการหยุดตอบคำถามได้ทุกเมื่อ (Do you know that you are free to stop the survey at any time?)	ใช่ (Yes) ☐
นักเรียนทราบใช่หรือไม่ว่า ถ้านักเรียนรู้สึกไม่สบายใจระหว่างตอบคำถาม นักเรียนสามารถหยุดและแจ้งเรื่องนั้นต่อครูได้ (Do you know that if you become upset during the survey you can stop and talk to a teacher about it?)	ใช่ (Yes) ☐

ถ้านักเรียนได้ตอบคำถามครบทุกข้อแล้ว กรุณากรอกรายละเอียดด้านล่างและเซ็นยินยอมและพับใส่ซองปิดผนึกส่งคืนครูที่ปรึกษาด้วย

(If you have answered yes to all the questions please fill out your details below, sign it and put it in the envelope provided and hand to your teacher)

ชื่อนักเรียน (Name)	
อายุ (Age)	
โรงเรียน (School)	
ชั้น ม. (Class)	

ลายเซ็น (Signed by) **วัน/เดือน/ปี** (Date)

คำชี้แจงเกี่ยวกับการสอบถาม เรื่อง การใช้อินเทอร์เน็ตของเยาวชน
(Young People Online)

คำชี้แจงสำหรับนักเรียน (Student Information Sheet)

คำชี้แจงต่อไปนี้จะช่วยประกอบการตัดสินใจของนักเรียนในการตอบแบบสอบถาม

1 แบบสอบถาม เป็นการสอบถามเกี่ยวกับอะไร

· เป็นการสอบถามนักเรียนเกี่ยวกับการเข้าถึงอินเทอร์เน็ต รวมทั้งสถานที่ใช้งานและสิ่งที่กระทำในการออนไลน์แต่ละครั้ง

2 ใครเป็นผู้ทำการสอบถาม และสอบถามไปเพื่ออะไร

· การสอบถามนี้ดำเนินการโดยนักศึกษาดุษฎีบัณฑิต(ปริญญาเอก)ที่กำลังศึกษาอยู่มหาวิทยาลัยพลีเมาธ์ (Plymouth University) คำตอบของเด็กเยาวชนจะช่วยเป็นข้อมูลให้ผู้มีผู้ส่วนเกี่ยวข้องและนักวิชาการในการวางแผนกำหนดนโยบายและออกกฎหมายต่างๆ และผลิตสื่อการสอนที่สอดคล้องกับการใช้บริการในโลกออนไลน์ได้อย่างถูกต้องเหมาะสม

3 ข้อมูลอะไรที่ผู้วิจัยต้องการเก็บรวบรวมจากนักเรียน

· การสอบถามนี้ถือเป็นความลับ ผู้วิจัยจะเก็บรวบรวมข้อมูลเฉพาะอายุ เพศ และสถานศึกษา คำตอบของนักเรียนจะไม่ส่งผลกระทบใดๆ ต่อตัวนักเรียน

4 ผู้วิจัยจะดำเนินการสอบถามอย่างไร

· ถ้านักเรียนยินยอมใช้เวลาว่างจากการเรียน (เช่น พักเที่ยง) นักเรียนหรือกลุ่มนักเรียนจะได้เข้าสู่ระบบการตอบแบบสอบถามออนไลน์ผ่านคอมพิวเตอร์หรือแท็ปเล็ตที่ได้จัดเตรียมไว้ให้ โดยจะมีครูอย่างน้อยหนึ่งท่านคอยกำกับดูแลตลอดเวลา

5 ลักษณะของคำถามเป็นอย่างไร

· คำถามส่วนใหญ่จะสอบถามเรื่องทั่วไป เกี่ยวกับการใช้อินเทอร์เน็ตของนักเรียน แต่อาจจะมีคำถามบางส่วนที่ถามเกี่ยวกับความไม่สบายใจ(หรือความไม่ชอบใจ)เกี่ยวกับบางสิ่งหรือบางคนกระทำในโลกออนไลน์ที่มีเนื้อหาเกี่ยวความรุนแรงหรือปัญหาทางเพศ

6 ถ้านักเรียนยินยอมตอบแบบสอบถาม แต่นักเรียนต้องการหยุดตอบคำถามในระหว่างที่ยังตอบไม่เสร็จได้หรือไม่

· สามารถกระทำได้ทันที นักเรียนสามารถแจ้งต่อครูเมื่อพวกเขาต้องการหยุดและยุติการตอบคำถาม

7 ถ้าในระหว่างที่นักเรียนตอบแบบสอบถาม แล้วเกิดความรู้สึกไม่สบายใจ จะเป็นอย่างไร

· ผู้วิจัยหวังว่า จะไม่เกิดเหตุการณ์เช่นนั้นขึ้นมา แต่ถ้าหากเกิดเหตุการณ์ดังกล่าวขึ้นกับนักเรียนคนใด นักเรียนสามารถแจ้งต่อครูให้ทราบว่าตนไม่สามารถดำเนินการต่อได้ อย่างไรก็ตาม ครูสามารถอธิบายพูดคุยกับนักเรียนเกี่ยวกับเหตุผลและความเข้าใจเพิ่มเติมกับสิ่งที่จะดำเนินการต่อไปได้

8 ฉันจะสะท้อนความคิดเห็นต่อการสอบถามได้อย่างไร

· ตามที่ได้แจ้งเบื้องต้นว่า การสอบถามนี้เป็นการดำเนินการด้วยการรักษาความลับของนักเรียน ดังนั้น นักเรียนจะไม่ได้ผลสะท้อนกลับเป็นรายบุคคล อย่างไรก็ตาม เมื่อการสอบถามเสร็จสิ้น ผลการวิเคราะห์ข้อมูลจะถูกนำไปใช้เป็นข้อมูลในการพัฒนาการเรียนการสอนเพื่อสร้างความตระหนักในการใช้งานออนไลน์ในโรงเรียนที่นักเรียนกำลังศึกษาอยู่ต่อไป

Appendix C: Transcribed Interview Example

Male: 14

Tues 22nd May 18

What do you do on the Internet?

Interviewer: *Good afternoon. thank you for doing the interview. What do you do on the Internet.*

Student 18 via translator: Facebook, Messenger youtube, google, Instagram

Interviewer: *Galina?*

Student 18 via translator: Galina is like playstore for games

Interviewer: *What do you do on Facebook?*

Student 18 via translator: Follow news feeds, friends post

Do you have a computer or laptop at home?

Interviewer: *Do you have a computer or notebook at home?*

Student 18 via translator: He has a computer, a pc

Interviewer: *Do you use PC to go onto the Internet?*

Student 18 via translator: Yes he use it

Interviewer: *And do you have a smartphone?*

Student 18 via translator: He has his own smartphone

Interviewer: *Which one does he use the most for Internet?*

Student 18 via translator: Smartphone

How much time do you spend on smartphone and online?

Interviewer: *About how many hours a day?*

Student 18 via translator: About 4 hours he use smartphone

Interviewer: *And at the weekend?*

Student 18 via translator: About 5 or 6 hours

Has anything bad happened online?

Interviewer: *And has anything bad happened online, maybe on Facebook or Youtube?*

Student 18 via translator: He use to see pictures and videos about violence such as porn, criminals, shooting fighting.

Interviewer: *How does it make him feel?*

Student 18 via translator: He feels sad and he has question why do they do that video why do they share

What mediation is there by parents or teachers?

Interviewer: *Does he talk to his parents or somebody?*

Student 18 via translator: No

Interviewer: *Why*

Student 18 via translator: Dont' know

Interviewer: *What about friends?*

Student 18 via translator: Sometime talk to friends

Interviewer: *Teacher?*

Student 18 via translator: No teacher, no parents. just only friends

Interviewer: *But have parents given you advice about how to behave on the Internet?*

Student 18 via translator: His parents use to advise him don't look at videos of porn or violence because he's too young

Interviewer: *At school do they have any school rules about being on the Internet?*

Student 18 via translator: In the morning they leave their smartphone at the basket of the teacher at lunch they can bring it back to play after lunch they bring it back again and before back home they go to bring it back from the teacher.

What do your family do work wise?

Interviewer: *What does your family do?*

Student 18 via translator: His father works in a bank and his mother work at the office of health at the government.

Do you know about computer viruses?

Interviewer: *Do you know about computer viruses?*

Student 18 via translator: He found by himself

Interviewer: *What does he know about?*

Student 18 via translator: His parents told him there's virus on computer

Interviewer: *But he doesn't know really about virus?*

Student 18 via translator: He doesn't know

Do you share your passwords?

Interviewer: *Do you share your passwords with anybody, like on facebook?*

Student 18 via translator: He use to but now no

Interviewer: *Why? Did he have a bad experience?*

Student 18 via translator: He use to share his password to his parents and some friend but now he doesn't share anything

Interviewer: *Why?*

Student 18 via translator: Now he know if someone knows his password they can use this password to access his account and do many things

Do you feel freer to do what you want on the Internet when alone?

Interviewer: *When he's alone does he look at things on the Internet which he would not do when he is with friends?*

Student 18 via translator: He feels free, he use to watch video of porn, violence on youtube

Interviewer: *What is your favourite thing to do online?*

Student 18 via translator: Facebook

Interviewer: *why?*

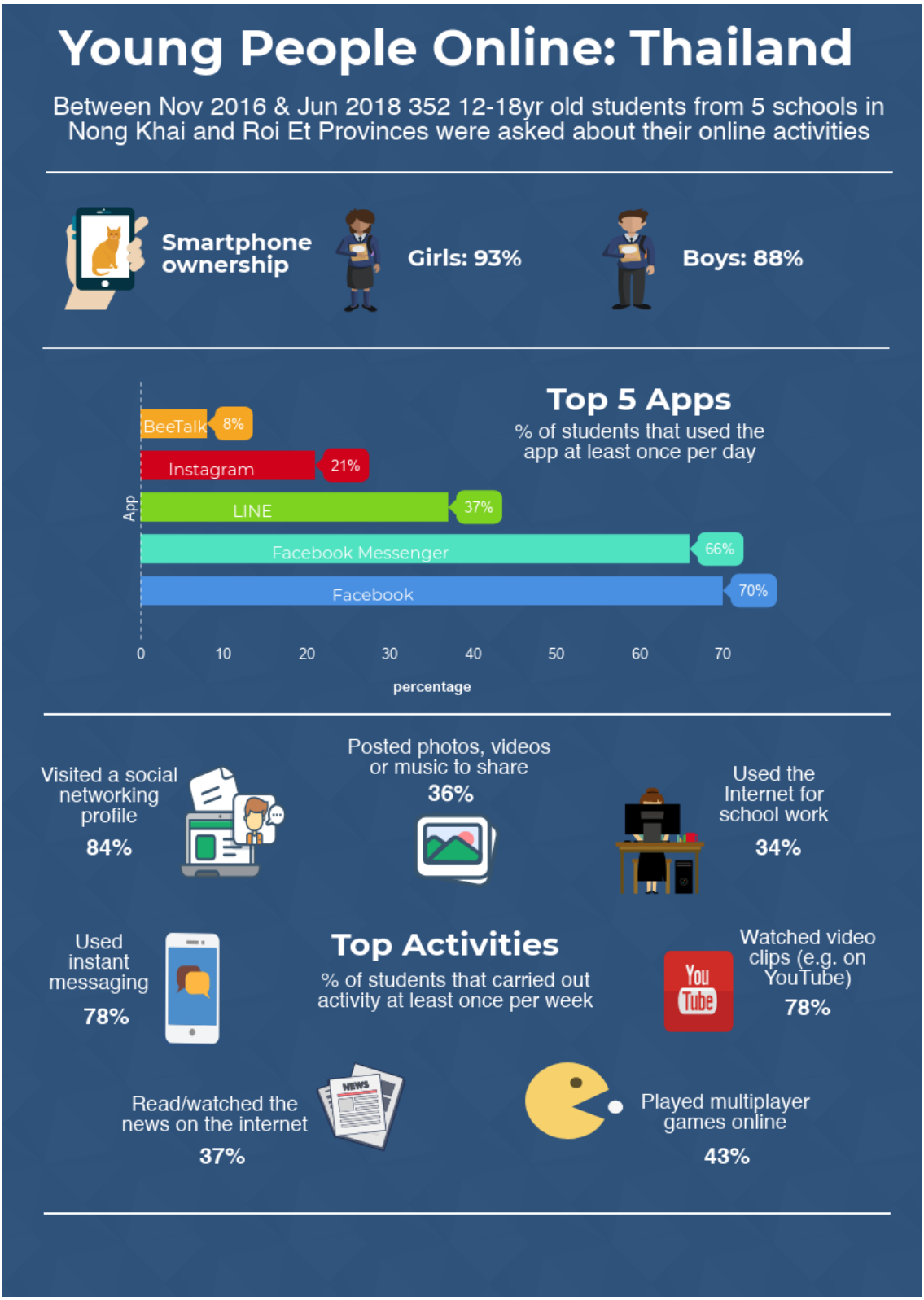
Student 18 via translator: No reason. no notification but when open smartphone first thing have to do, Facebook

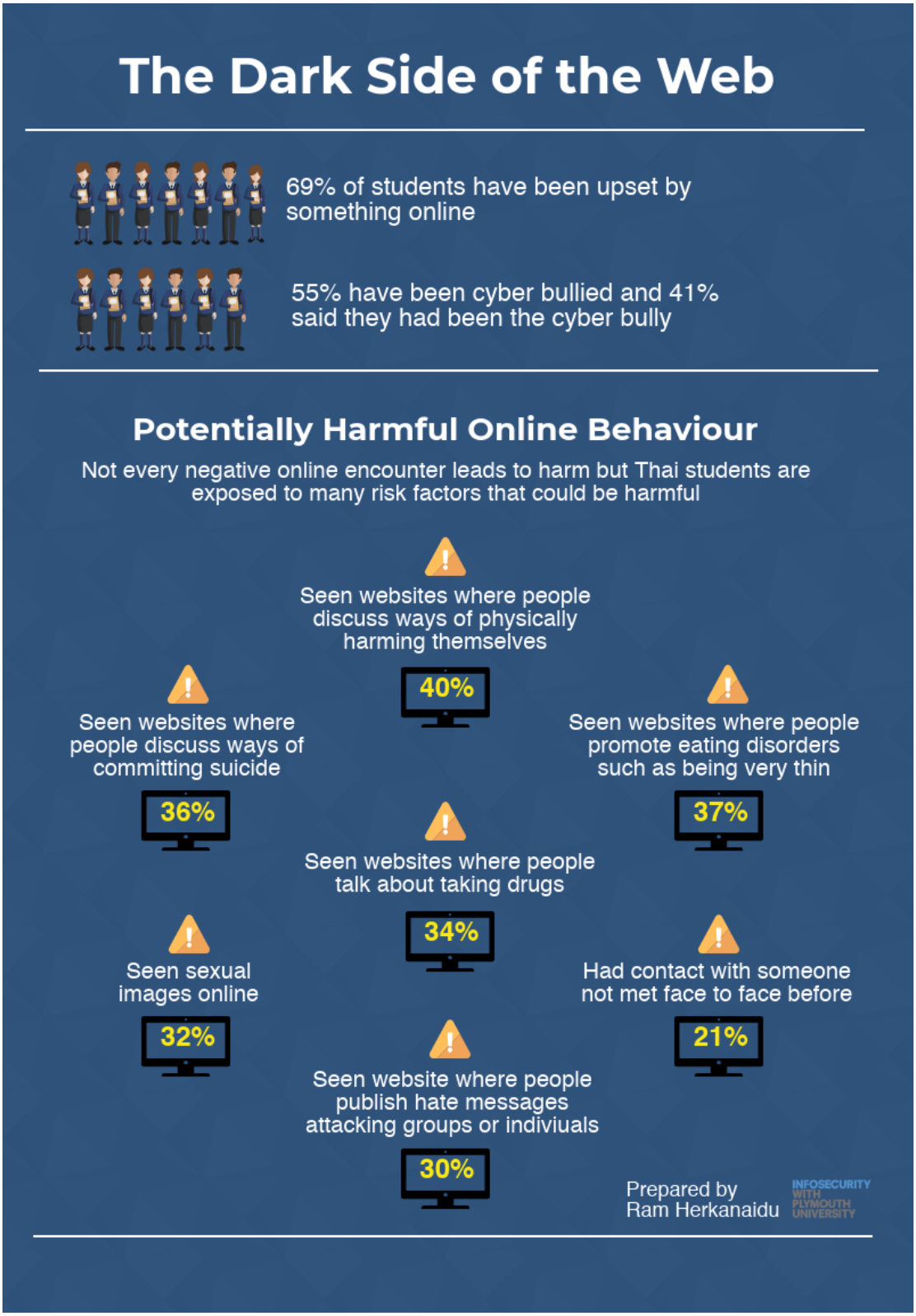
Interviewer: *Is there anything else you want to say good or bad?*

Student 18 via translator: No

Interviewer: *Thank you*

Appendix D: Young People Online Infographics




The Dark Side of the Web
69% of students have been upset by something online
55% have been cyber bullied and 41% said they had been the cyber bully
Potentially Harmful Online Behaviour
Not every negative online encounter leads to harm but Thai students are exposed to many risk factors that could be harmful
Seen websites where people discuss ways of physically harming themselves
40%
Seen websites where people discuss ways of committing suicide
36%
Seen websites where people promote eating disorders such as being very thin
37%
Seen websites where people talk about taking drugs
34%
Seen sexual images online
32%
Had contact with someone not met face to face before
21%
Seen website where people publish hate messages attacking groups or indiviuals
30%
Prepared by
Ram Herkanaidu
INFOSECURITY WITH PLYMOUTH UNIVERSITY

Facebook in Thailand

Between Nov 2016 & June 2018 we asked 352 students aged 12-18 in Nong Khai & Roi Et Provinces about their use of Facebook and Facebook Messenger

QUICK FACTS

Facebook and Facebook messenger are the dominant social network and instant messaging service respectively

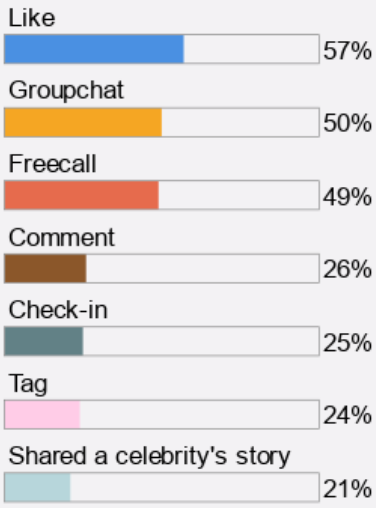
Students that use Facebook daily 70%

Students that use Facebook Messenger daily 66%

	GIRLS	BOYS
Have an account	96%	93%
Average no. of friends	1548	888
Between 2000 & 5000 friends	33%	13%

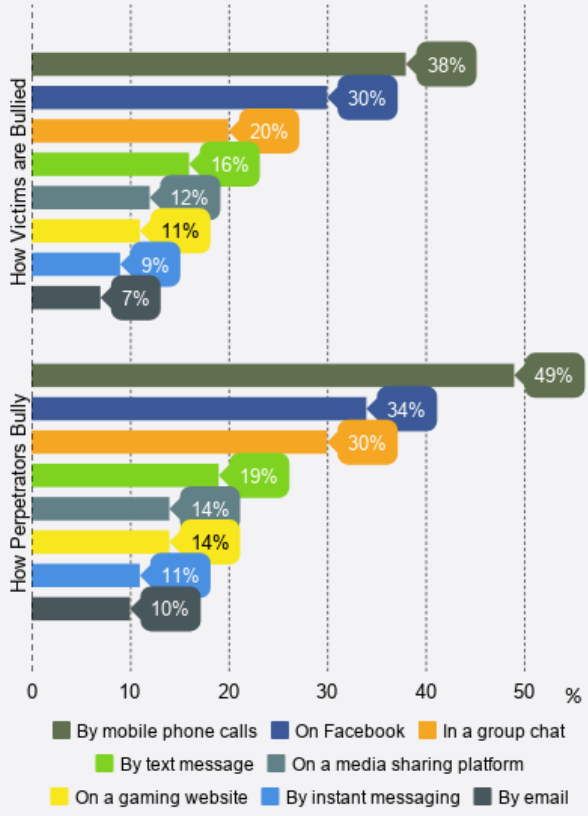
DAILY ACTIVITIES

Percentage of all students that did the activity at least once a day



CYBER BULLYING

The most common ways using technology that students are hurtful to one another either as the bully or the one being bullied



Prepared by Ram Herkanaidu

INFOSECURITY WITH PLYMOUTH UNIVERSITY

Appendix E: Conference Papers

Online Risk Awareness and Exposure of Young People in Thailand

Paper presented at the 16th Annual Security Conference 2017, April 18 - 20, Las Vegas, USA.

Abstract

Research in online behaviour in less developed countries (LDCs) especially in South East Asia are very few and far between. This pilot study asked 206 school aged students in Nong Khai province in the North East of Thailand about their online interactions. In particular, from where they connected, what they did while online, how often and if they had any negative experiences. It was found that 90% of those surveyed had a smartphone and this was their chief window into the online world. Facebook and Facebook Messenger are the dominant social network and instant messaging platforms respectively. Not all interactions were positive as two thirds reported being upset by an online interaction. Over half had been cyber bullied and just less than that had been the one who was doing the cyber bullying. Incidence of viewing potentially harmful content like discussions of self harm was also very high. There was evidence of mediation by parents and teachers, but its effectiveness is debatable. The findings will feed forward into the design of an education programme addressing online safety and awareness raising requirements of this user community.

Using Gamification in Effective Online Safety Awareness Education

Paper presented at the 10th International Conference on Educational Research (ICER) 2017, 9 – 10 September 2017, Khon Kaen University, Thailand.

Abstract

Gamification in classrooms has become more widely used as a way to motivate and keep students engaged. Some elements like awarding points and badges have long been used and now more imaginative techniques whereby students go on quests, competing or cooperating with each other individually and in teams. They incorporate physical and intellectual challenges, quizzes and problem solving. In addition components such as leader boards, progress bars, difficulty levels and time restrictions all add to the feeling that you are playing a game. Some of these concepts were used in creating online safety awareness workshops. The first of these concentrated on creating and remembering strong passwords, using a password meter to check how strong their current passwords were and assigning a percentage-based rating. Their respective password strength was recorded on a leader board to create a sense of competition. The participants were then given instructions on how to create strong unique passwords for every site using a pass phrase and a formula. They then had to come up with their own new password, which was rated again to see how much stronger they were compared to their initial one. All proved to be stronger the second time round. The principles from this workshop, namely the introduction of competition, the use of a rating system together with a leader board could be transposed to other settings like, for example, employees in organisations acting as a motivational tool for the use of stronger, more secure passwords, and potentially other desired security behaviours.

Using Gamification in Cybersecurity Education

Paper presented at the 1st International Conference December 3 - 4, 2017,

Mahachulalongkornrajavidhalaya University, Nakhon Phanom, Thailand.

Abstract

Gamification is the use of game elements in other contexts such as in education. It is a way to motivate students by introducing quests, challenges, quizzes and problem solving. Within each task you can also add elements like leader boards, progress bars, difficulty levels and time restrictions. This approach lends well to the teaching of Cybersecurity. The first workshop using this method was on password security. The challenge for the students was to create strong unique passwords. This was facilitated by use of a password meter which gave a percentage score of how good (strong) a password is. They get 2 attempts. In the first round they use their own passwords. They then are advised on how to create strong passwords. Using this advice they create new passwords and see if they can better their first score. All did better second time round. The second workshop was an introduction to encryption. Each student was given a Caesar wheel, a simple tool to create encrypted messages. Students used these to create their messages and then the rest of the group had to decipher them. Whereas the password workshop was an individual exercise deciphering the messages was best accomplished by team effort. Both workshops proved successful and showed that using gamification in imaginative and innovative ways can help students learn.

Designing an Effective Anti-Cyberbullying Programme in Thailand

Paper presented at the 12th International Symposium on Human Aspects of Information

Security & Assurance on August 29 -31 2018 at Abertay University, Dundee, Scotland.

Abstract

A high proportion of young people in Thailand spend several hours a day online and mainly from their smartphone. Not all of their online experiences are positive and many are victims of cyberbullying. However this and other online safety issues are not discussed in schools or generally in Thai society. There are no national or local programmes that address the issues and it is not on the curriculum in schools. Therefore, to initiate such a programme workshops were carried out to find out what kind of activities would engage Thai students. Altogether 83 students from three schools participated in the four workshops conducted. Each session was evaluated afterwards and suggestions for improvements were implemented in the next one. The most successful activities were the showing of a Thai video on cyberbullying, the listing of their online activities and the Buddhist teaching of sati (mindfulness). However, it was clear that there is a passive acceptance of cyberbullying. It was found most would not talk about it to parents or teachers and only sometimes with friends. Therefore, the workshops were a good introduction to the topic of cyberbullying and demonstrates a need for more of these kinds of online safety awareness raising initiatives.