

The Current State and Emerging Trends of Technology Usage among Young People in Thailand

Hsu Nang¹

Antony Harfield²

Department of Computer Science & Information Technology,
Naresuan University, Thailand

¹nangh57@nu.ac.th

²antonyh@nu.ac.th

and Ratchada Viriyapong³

Department of Mathematics,
Naresuan University, Thailand

³ratchadapa@nu.ac.th

Abstract - The usage of mobile technology among young people is increasing in developing countries each year. In this paper, we present the current state of school children's technology usage in rural Thailand. A survey of 1,733 school children from across the lower northern area of Thailand was undertaken. In general, the results show that smartphone usage is slightly higher than PC usage, with tablet usage considerably lower. In some areas, the nature of children's technology usage can vary significantly across age ranges and between genders. To identify the emerging trends of technology usage in the region, the results are compared with an identical survey undertaken one year earlier. The differences highlight a significant increase in game usage across all devices and a general decline in technology usage in schools. These patterns might cause concern amongst educators and parents.

Keywords - Technology Usage

I. INTRODUCTION

Today's digital natives have grown up with mobile technology. Studies have shown that young people frequently use smartphones, and more recently tablets such as iPad. A 2011

study of digital media usage by American children up to the age of 10 years old found that children are using the Internet more than ever before, and that Internet usage increases with age [1]. In South East Asia, a 2014 study [2] found that 41% of children between the ages of 3 and 8 years old spend more than 1 hour using mobile devices.

In terms of usage location, the same study [2] found that only 17% of the children use mobile devices at school, compared to 99% at home. The results also identified the type of usage, with 72% of students accessing mobile devices for playing games, 60% for watching videos, 57% for educational applications, 31% for 'cute/fun' applications and 14% for book reading applications.

A separate study in Singapore [3] found that the most common technology activity for primary school children is playing games, followed by educational applications. Tablets have the least access while PCs and smartphones have the most access in among computing devices [3].

A previous study by the authors in 2014 highlighted that smartphones were the most influential computing device, but the PC was a very close second [4]. Tablets were the least

used device, and when students did use a tablet it was mostly for playing games.

II. RESEARCH METHOD

A survey was undertaken during a Science Fair in August 2015 which was attended by school children from the different areas of lower northern part of Thailand. The participants consisted of 1,733 schoolchildren in four age groups (Prathom 1-3, Prathom 4-6, Matthayom 1-3 and Matthayom 4-6). The survey asked children about the frequency, location and nature of their smartphone, tablet and PC use. The questions and answers were administered via an electronic system set up at workstations. All questions as mentioned in Table I are the same as our previous survey's questionnaire of 2014 as in the form of multiple choices in Thai language.

TABLE I
SURVEY QUESTIONS

1. Gender – <i>M / F</i> 2. Age 3. Year of study – <i>P.1-P.3 / P.4-P.6 / M.1-M.3 / M.4-M.6</i>
4.1 Do you use computer (PC)? – <i>Yes / No</i> 4.2 How often do you use computer? - <i>Everyday / 3-4 times per week / 1-2 times per week.</i> 4.3 Where do you use computer? – <i>School only / Home only / School and home only.</i> 4.4 What do you use computer for? – <i>Education / Playing games / Contacting friends / Browsing internet / Watching video.</i>
5.1 Do you use tablets? 5.2 How often do you use tablet? 5.3 Where do you use tablet? 5.4 What do you use tablet for?
6.1 Do you use smartphone? 6.2 How often do you use smartphone? 6.3 Where do you use smartphone? 6.4 What do you use smartphone for?

III. RESULT

The results of the current survey are presented alongside the results of the previous year where appropriate (originally published in [4]).

A. Overall

Fig. 1 gives a picture of the overall technology use by primary and secondary school children in Thailand. Smartphones are still the device with the highest usage, and the usage has increased marginally in the last 12 months. PCs and tablets, on the other hand, have seen a slight decrease in usage in 2015.

Fig. 2 shows the frequency of using mobile devices. The dominance of smartphones is evident from the majority of children using them every day. Although PC and tablet usage decreased overall in Figure 1, the frequency of usage has slightly increased in 2015 from Fig. 2.

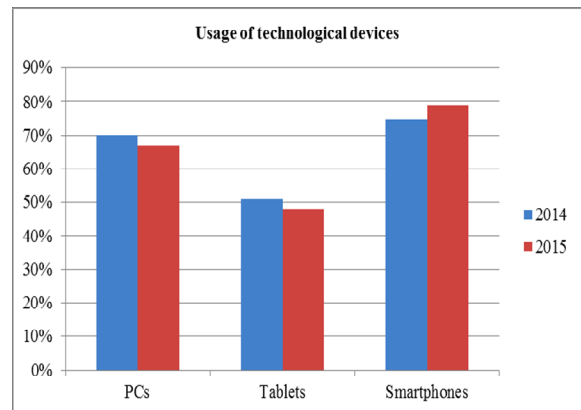


Fig 1. Comparison of Technology Devices Usage

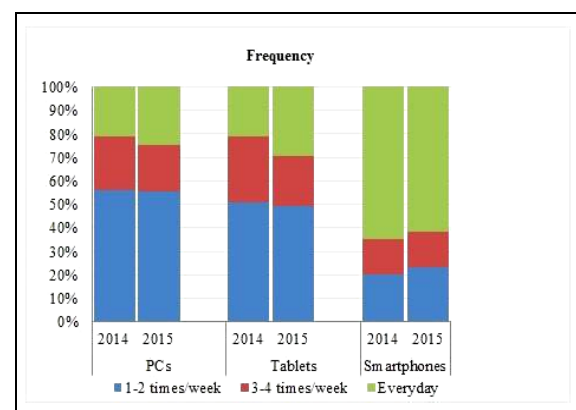


Fig 2. Frequency of Technology Devices

Fig. 3 presents the general purposes of use in the three device categories. Playing games was the most dominant activity across all devices, overtaking contacting friends on smartphones and education on PCs. The percentage of game playing increased on all device categories. Similar to 2014,

smartphones are still the most common device for contacting friends, and tablets are the most common device for playing games. PCs were previously dominant for educational purposes, now they are still the first choice, but PCs are used more for playing games than education.

Table II shows that the majority of students use tablets and smartphones at home. PCs have significant usage at school, but the percentage has decreased by a considerable amount.

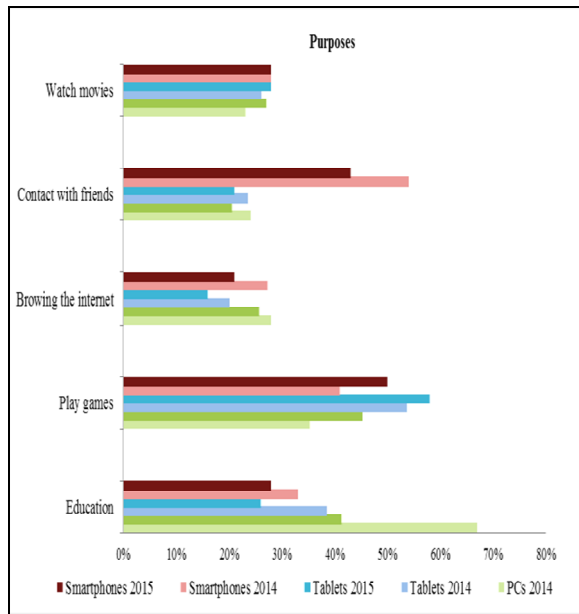


Fig 3. Purpose of Use

TABLE II
LOCATION OF USE

Device	Year	School	Home
PCs	2014	63%	66%
	2015	54%	80%
Tablets	2014	16%	94%
	2015	17%	96%
Smartphones	2014	42%	97%
	2015	41%	97%

B. By Level of Study

Fig. 4 compares the technology usage of children from different levels of study. In 2014 it was observed that the older years (Matthayom 1-6) had similar amounts of smartphone and PC usage. In 2015 the smartphone is the most used device across all age ranges.

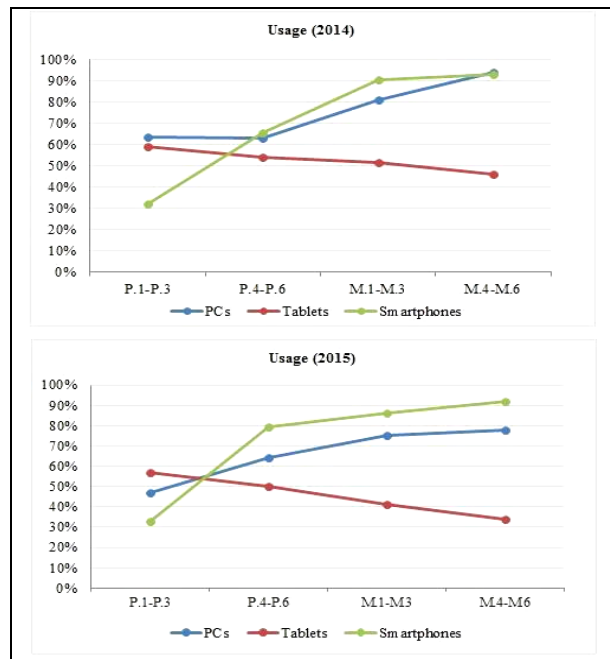


Fig 4. Level of Usage by Year of Study

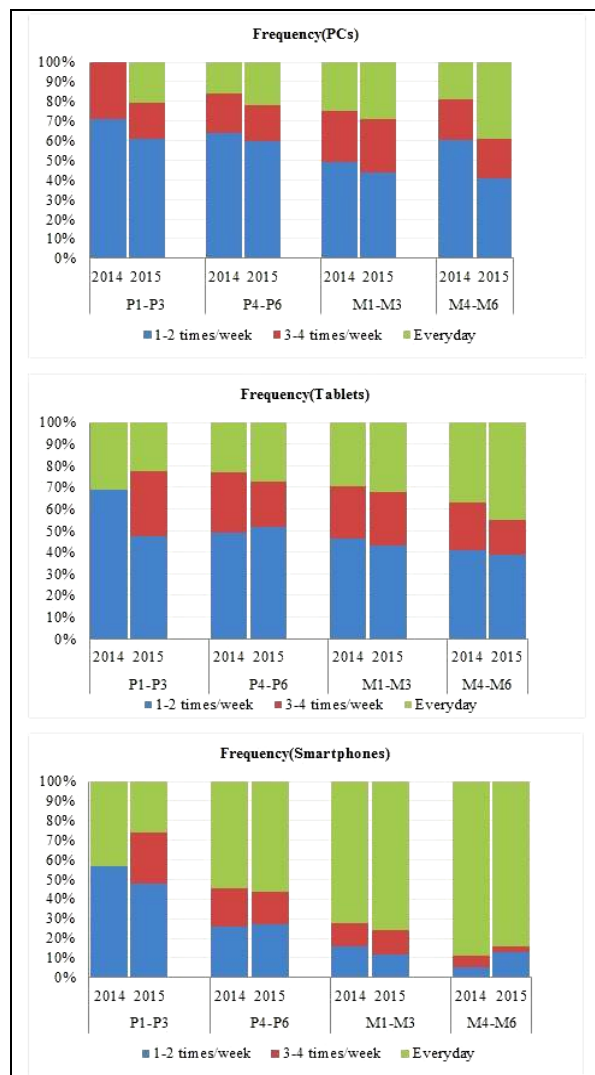


Fig 5. Frequency of Usage by Year of Study

Another characteristic evident from the two graphs in Figure 4 is the increased technology usage at the P.4-P.6 level, indicating that children are starting to use PCs and smartphones at an earlier age.

In Fig. 5 it is evident that older students use devices more frequently, which is consistent with findings in the USA as mentioned earlier [1].

Fig. 6 describes the purpose of usage by levels of study. Across all levels, but especially at the P.1-P.3 level, the distressing news for parents is that educational use is decreased and usage for playing games is increasing considerably. Watching video has also seen a big increase at the P.1-P.3 level.

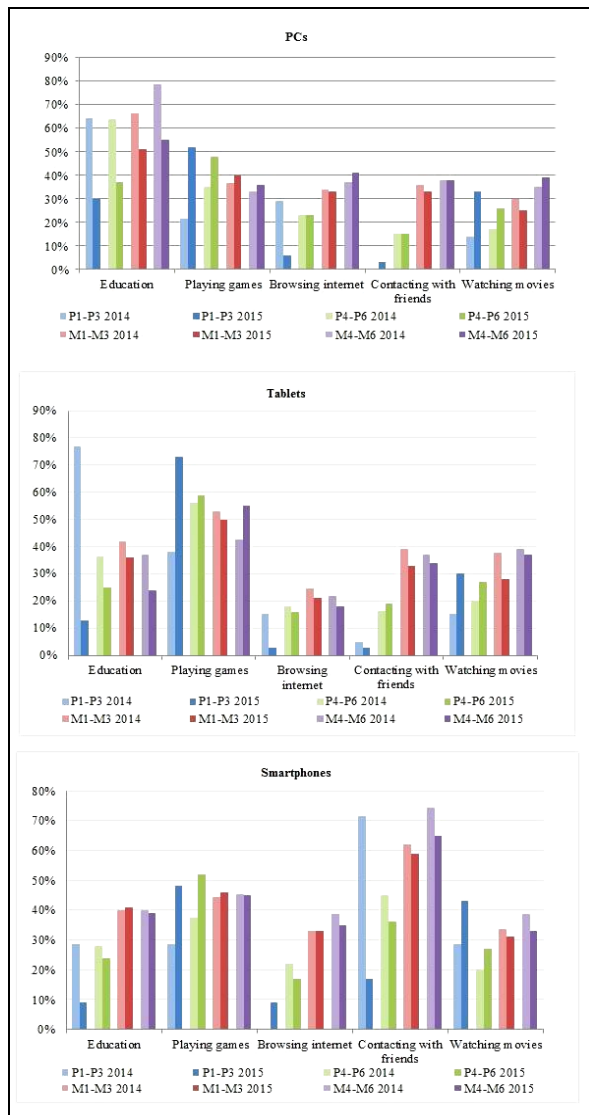


Fig 6. Purposes of Usage by Year of Study

TABLE III
LOCATIONS OF USE BY LEVEL

Level	Year	School	Home
PCs			
P1-P3	2014	79%	36%
	2015	42%	61%
P4-P6	2014	59%	65%
	2015	53%	81%
M1-M3	2014	72%	64%
	2015	61%	81%
M4-M6	2014	60%	79%
	2015	51%	83%
Tablet			
P1-P3	2014	31%	69%
	2015	20%	83%
P4-P6	2014	10%	96%
	2015	15%	97%
M1-M3	2014	28%	91%
	2015	20%	96%
M4-M6	2014	24%	93%
	2015	32%	100%
Smartphones			
P1-P3	2014	29%	100%
	2015	17%	91%
P4-P6	2014	26%	98%
	2015	34%	97%
M1-M3	2014	58%	97%
	2015	54%	98%
M4-M6	2014	77%	97%
	2015	77%	98%

Table III compares where the technology usage is occurring. PC usage has gone from the highest for P.1-P.3 in 2014 to the lowest in 2015. The lower school usage is offset by an increase in home usage for PCs, particularly among younger children. Across all the device categories, as students get older, their usage of technology is increased.

C. Gender

Overall, female usage of PCs and tablets has decreased and female usage of smartphones has increased, as shown in Figure 7. Male usage, on the other hand, has stayed constant for PCs and tablets, and only increased for smartphones.

Fig. 8 shows the nature of male/female usage and highlights that games are more popular with boys than with girls. The difference is greater in 2015 than in 2014, indicating a possible trend of increased male interest in games. The female students continue to show more interest in using technology for education and for contacting friends (the former on PC and the latter on

smartphone).

IV. CONCLUSION

In comparing the results of 2015 with 2014, the trend of increasing smartphone usage was to be expected as a natural consequence of increasing sales of mobile devices. However, the decrease in tablet usage was a surprise result. Especially when considering that elsewhere, for example in New Zealand [5], the tablet usage among young children is higher than PCs and smartphones.

One clear finding from the 2015 results is that playing games has become the dominant purpose for using technology, across PCs, tablets and smartphones. This finding is consistent with the Singapore study in 2015 [3] where the researchers showed that the most popular activity for computing devices is playing games (78% of primary school children played games). In terms of playing games, the gender gap is widening – there was a greater increase in playing games for boys compared to girls. There were also significantly younger students playing games than before. This is a cause for concern because other usage activities decreased, particularly education.

It is positive to observe that all types of technology usage are increasing at home, including PC, most likely due to increased device ownership in families. However, the results identify a technology problem in schools, especially with the decreasing usage of PCs. Why is technology usage at school not increasing at the same rate as at home? Traditionally, it would be schools that would be the leading example of using technology, particularly for educational purposes – but the results from this survey show that this is not the case. It is perhaps not surprising that playing games is the dominant activity if schools are not inspiring parents and their children to make use of technology for more educational purposes.

The current state of technology usage in Thailand will be of interest to parents who are concerned about giving their children appropriate access to technology. However, it

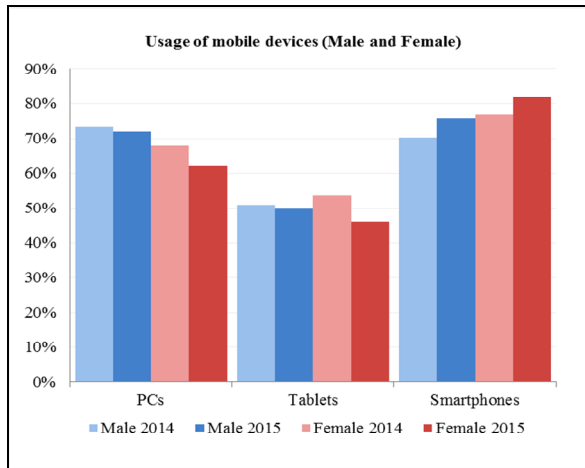


Fig 7. Usage by Gender

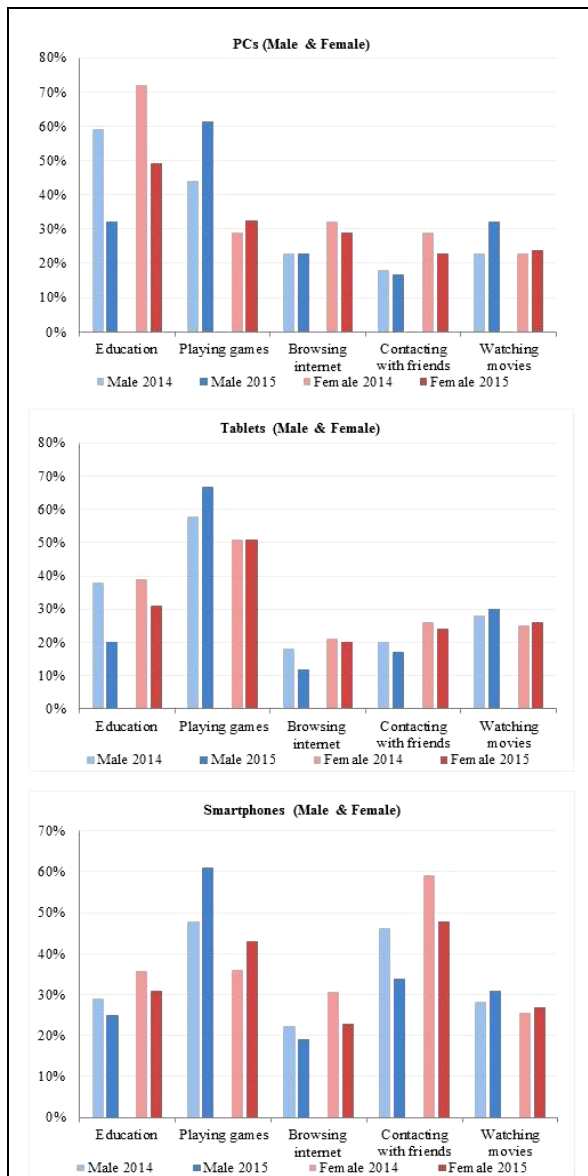


Fig 8. Purposes of Usage by Gender

is the emerging trends observed over the last 12 months that are significant for educators and policy makers. In another 12 months, the authors plan to undertake another survey to more accurately model the direction of technology usage in Thailand.

Authority, New Zealand.
<https://bsa.govt.nz/images/assets/Research/Childrens_Media_Report_2015_FINAL_for_publishing_2.pdf>.

V. ACKNOWLEDGEMENT

This research is supported by Mobile Computing Lab at Naresuan University. It is being undertaken as part of a research project funded by the Thailand Research Fund and Naresuan University.

REFERENCES

(Arranged in the order of citation in the same fashion as the case of Footnotes.)

- [1] Robb, M., Takeuchi, L., and Kotler, J. (2011). "Always connected: The new digital media habits of young children". Joan Ganz Cooney Center at Sesame. <http://www.joanganzcooneycenter.org/wpcontent/uploads/2011/03/jgcc_alwaysconnected.pdf>.
- [2] theAsianparent. (2014). "A Southeast Asia Study: Mobile Device Usage Among Young Kids". <<https://s3-ap-southeast-1.amazonaws.com/tap-sgmedia/theAsianparent+Insights+Device+Usage+A+Southeast+Asia+Study+November+2014.pdf>>.
- [3] Goh, W.W., Bay, S., and Chen, V.H.H. (2015). "Young school children's use of digital devices and parental rules". *Telematics and Informatics*, 32(4), pp. 787-795.
- [4] Harfield, A., Nang, H., Nakrang, J., and Viriyapong, R. (2014). "A Survey of Technology Usage by Primary and Secondary Schoolchildren in Thailand". In 11th International Conference on eLearning for Knowledge-Based Society (eLearningAP 2014), Siam Technology College, Thailand, 12-13th December 2014.
- [5] BSA. (2015). "Children's Media Use Study How our children engage with media today". Broadcasting Standards