POVERTY AND DIGITAL LITERACY: A STUDY ON CHILDREN LIVING AT THE PUSAT PERUMAHAN RAKYAT (PPR)

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ABSTRACT

Children living in poverty are frequently denied beneficial and valuable digital media experiences and abilities. These children frequently do not have access to digital media and are unable to comprehend the potential of digital technologies. Children of B40 income earners living in the Pusat Perumahan Rakyat (PPR) are one segment of Malaysian society that may be affected. This study attempts to offer approaches that can help these children by first evaluating their current degree of digital media use and digital skills. A phone survey on 308 children living at the PPR was conducted in March 2021. The study found that the children have moderate informational and operational skills, safety and security skills, communicational skills and digital participation, and problem-solving skills. However, they lack in content creation and innovation skills. Therefore, there is an urgent need to provide the necessary skills to these underpreviliged children so that they will not be left behind. Thus, the study recommends that policymakers and all stakeholders maximise on existing digital programmes by focusing on child-specific efforts and emphasising the value of digital parenting.

Keywords: Poverty, Digital Literacy, Children, Pusat Perumah Rakyat (PPR), Digital Parenting

INTRODUCTION

The Malaysian government projected that by 2030, Malaysia will become a developed country. In the Communications and Multimedia Blueprint (CMB) 2018-2025, digital inclusiveness that will see the creation of media-savvy Malaysians is specifically highlighted. In addition, the Education Blueprint 2013-2025 clearly asserts that the government wants to ensure that socio-economic status would not hamper the less privileged from accessing the right technology in attaining education. In the country's recent 2020 Budget, the government specifically addressed that it wants to build a nation that is developed yet inclusive where all Malaysians will have equal access to knowledge and information. As such, the budget was focused to assist the B40 group so that they too can experience positive social mobility. The B40 presents percentages of the country's lowest income population or the 'Bottom 40%'. While these aspirations look promising, there are still hurdles to overcome. Among the most prominent issues is the B40's level of effective digital adoption and usage. The B40 children more specifically will be the most affected if they are unable to keep up with the rapidly changing and demanding digital world. Effective use of digital technologies is more than just the ability to own and use the technology; rather it requires digital literacy that will guide the B40 children to become productive digital citizens.

The B40 indicates percentages of Malaysia's lowest income population or the 'Bottom 40%'. While the government is doing its best to include the B40s in all of its policies, one of the biggest challenges to this is to ensure that the B40s are abreast with the contemporary demands of digital technologies. Using a mixed-methods approach that includes survey questionnaire, field observation and focus group interviews, this research study aims to look at this relationship by studying a segment of the B40 group that is the children living at the Pusat Perumahan Rakyat (PPR). Poverty often deprives children from having positive and productive digital media experiences and skills (UNICEF, 2017). These children usually lack access to digital media and are unable to grasp the potential that comes with digital technologies. Especially at this time of health pandemic, digital economy

and Industrial Revolution 4.0 where digital literacy and skills are prerequisites to education, industries, and general wellbeing, these children cannot afford to be left behind. Therefore, this study proposes that by investigating how the B40/PPR children currently access and use the media, relevant and well-suited digital measures, tools and initiatives can be developed to help these children break away from the vicious poverty cycle that often shackles their potential to become successful citizens.

In response to this, a research study was conducted by a group of researchers from the International Islamic University Malaysia (IIUM) and was funded by the Malaysian Communications and Multimedia Commission (MCMC). The main focus of the research was to measure the children's level of digital literacy and measure the specific skills most required by them.

LITERATURE REVIEW

Children, Digital Literacy and Becoming Citizens

Children who are digitally literate and have greater access to the technologies perform better in society. Children can now not only receive news and information, but also develop and generate their own content, thanks to advances in digital media. Active use of digital media enables children to become active citizens and to be accepted as members of society. UNICEF (2008) identified THREE fundamental digital media rights that children should have. These include:

• Children as 'producers' of the media, creating spaces for children's expression and opinions about the realities around them;
• Children as 'users' of the media: children's access to the media; right to information; children's rights over programming content, right to protection from harmful content; and
• Children as 'subjects' of the media: right to protection from misrepresentation and deception.

Therefore, as citizens, children need access to the mediated public domain of media news and current events – both as an audience whose needs, skills, and interests are taken into consideration and as participants whose opinions and concerns are being voiced (Barnes, R., & Potter, 2021). As a result, digital media literacy, which enables children to maximize media affordances, is an important skill that must be taught.

Digital Literacy

The definition of literacy implies fundamental skills and expertise and is historically linked to books and printed materials. However, the recent boom in technology changes the sense of the word. In today's world, it is possible to read and write digital texts and decode and encode them (Reddy, Sharma & Chaudhary, 2020).. The fast dissemination and domestication of technology (Silverstone, 2011) transforms literacy into a significantly relevant phenomenon (Babboo, 2013) where the significance of new technology and new practice changes quickly and continually. It's argued today that we read, write, hear, and connect other than 500 years. In our so-called digitally saturated society (Carter, 2013), it is not irrational for digital literacy to be considered as the fundamental ability necessary to work in society (Wok & Mohamed, 2017). Nevertheless, literature and surveys warn that both the younger (Rashid, Mohamed & Azman, 2017) and older populations are inadequately informed of digital literacy. Digital literacy can be characterized as social practice, with the use of various digital technologies, which involves reading, writing and multimodal interpretation. It explains literacy activities and practices including, but also non-digital practices, digital technology (Prasad, Balraj, Pandian, & Nordin, 2016). Online/offline and material/immaterial literacy can transverse boundaries, thus creating complex trajectories of communication across space and time (Kral, & Renganathan, 2018). Digital literacy can include access, use and analysis, as well as development and distribution of texts by means of 'reading' and 'writing' in their broadest terms. Digital literacy involves skills that are linked to alphabetic printing and to accessing and using digital technology, including conventional skills.

Digital Literacy Competence Framework

A number of digital literacy competence frameworks have been developed by international organizations, national or sub-national Organization as well as commercial private sector actors. This study incorporates two recent competence frameworks are of particular relevance which are: the Digital Competence Framework for Citizens of known as DigComp developed by the European Commission (Ferrari, 2013), and the Digital Kids Asia-Pacific framework of the UNESCO Asia and Pacific Regional Office (2019). The research was conducted in five domains – (i) Informational and operational skills; (ii) Safety and security; (iii) Communication and participation (iv) Content creation and digital innovation; and (v) Problem-solving skills – and was expected to broaden the evidence base and understanding of digital practices, attitudes, behaviors and level of literacy of children aged 7 to15 years

METHODOLOGY

This study was conducted in from January to March 2021, during the Movement Control Order (MCO) period in Malaysia. Due to this, face-to-face survey was not able to be conducted therefore phone surveys were employed instead. The questionnaire consists of four (4) main sections and wasdeveloped in Malay or *Bahasa Melayu* (BM) to help the children understand better. Nine survey enumerators were hired and trained to conduct the survey. They were carefully informed about the research objectives and process. The enumerators phone called each of the respondents and recorded their responses in the Google form.

Survey Construction and Pilot Study

The framework for digital literacy adapted from the three mentioned studies provided the theoretical basis for the development of a self-reported survey to assess the perceptions, behaviours and attitudes of children in the digital environment. The survey was developed based on an extensive literature review and analysis of existing survey instruments. Considering the cognitive capacity and attention spans of children, one of the guiding principles of the survey development process was to minimize the number of questions without missing essential aspects of each competency. Wording of the items was carefully considered and refined in order to avoid any misinterpretation by the target age group. The questions were mostly limited to a 2-point scale of YES/NO questions that should make it easier for children to comprehend and decide on an answer. The survey was designed in Bahasa Malaysia in order to acknowledge these children's socio-cultural background.

Section 4 of the questionnaire is set to measure the level of digital media literacy. This section has five (5) sub-sections, namely, (a) informational and operational skills, (b) safety and security skills, (c) communication skills and digital participation, (d) content creation and digital innovation, and (e) problem solving skills. **Informational and operational skills** have nine (9) items with an alternative answer of either yes (1) or no (0). An example of the items is "I know how to use digital devices like smart phones, ipad and laptops". **Safety and security skills** have eleven (11) items with an alternative answer of either yes (1) or no (0). An example of the items is "I will not click or press on links that look strange or suspicious". There are four (4) items that were worded in the reversed way. An example of the items is "I always share my personal information with other people". **Communication skills and digital participation** have ten (10) items with an alternative answer of either yes (1) or no (0). An example of the items is "I like to share my interests and knowledge with friends on the Internet". There are four (4) items that were worded in the reversed way. An example of the reversed items is "I used to quarrel with my friends on the Internet". **Content creation and digital innovation skills** have ten (10) items with an alternative answer of either yes (1) or no (0). An example of the items is "I can make knowledge representation (e.g., mind mappings, images) using digital media". **Problem solving skills** have ten (10) items with an alternative answer of either yes (1) or no (0). An example of the items is "If I need information about something, I will straight away look for it on the Internet".

A pilot study was conducted to determine the time taken to complete the whole questionnaire; to check on the understanding of the school children on the questionnaire, reflecting the degree of easiness-and-difficulty encountered so that the questionnaire for the actual study is valid and it really measures the extent to which a concept is accurately measured in a quantitative study and this measurement is crucial in a mixed method study. Some changes and improvements were done accordingly after the pilot study.

Population and Sampling Procedure

The surveys were conducted from 18 January to 3 February 2021. A total of 308 childen living at three PPRS in the Klang Valley participated in the study. Specifically, a total of 93 (30.2%) respondents came from PPR Desa Rejang, 96 (31.2%) respondents from PPR Sungai Bonus, and 119 (38.6%) respondents from PPR Kota Damansara. Their representation is proportionate to one another.

The population group for the study is children aged between 7 to 15 years old that lives at the PPR. Initially, 100 school children encompassing both male and female were targeted as the sample for each PPR. A contact person from each PPR was identified to become the person-in-charge for the study. The person-in-charge from respective PPR provided the researchers with the list of school children with their contact numbers and the signed permission from their respective parents. The sampling procedure is done using stratified random sampling procedure where the strata are PPR, level of education and gender

FINDINGS AND DISCUSSIONS

Demographic Characteristics of the Respondents

From a total of 308 respondents (Table 1), there is an almost equal proportion of male (50.6%) to female (49.4%). About three-quarters of the respondents (74.7%) are Malays, with 24.7%) Indian and the least is Chinese (0.6%). The proportions according to the age groups are slight more for the 10-12 years old group (36.0%) compared to 7-9 aged groups (35.1%) and the 13-15 years old group which made up the rest of the respondents (28.9%). In terms of siblings, more than half the number of the respondents (54.9%) has 1-3 siblings, followed those having 4-6 siblings (34.7%) while the rest is made up of either without any sibling at all (3.6%) or more than 7 siblings (6.8%).

Table 1: Demographic Characteristics of the Respondents

Demographic Information	Category	Frequency	Percentage
Gender	Male	156	50.6
	Female	152	49.4
Ethnicity	Malay	230	74.7
	Chinese	2	0.6
	Indian	76	24.7
Age	7-9 years old	108	35.1

	10-12 years old	111	36.0
	13-15 years old	89	28.9
No. of siblings	None	11	3.6
	1-3 siblings	169	54.9
	4-6 siblings	107	34.7
	More than 7 siblings	21	6.8

Level of Skills Acquired

Digital Media Literacy skills are classified into five: (a) informational and operational skills, (b) safety and security skills, (c) communication skills and participation, (d) content creation and innovation skills, (e) problem solving skills.

The children were categorized into three age groups in order to identify the differences in the adoption of digital skills across age. The study found that in sum, all the children have poor to average digital competencies. However, as expected the younger children scored lower in all skills when compared to their seniors. The overall 5 digital media literacy skills are presented in Table 2.

Table 2: ANOVA Comparisons of Digital Literacy Skills Across Age Groups

Variables	Age (years old)	N	Mean	SD	F	P
Sum b4ca: Informational and operational skills	7-9	108	2.824	1.854	59.047	.000
	10-12	111	4.414	2.087		
	13-15	89	5.876	1.953		
	Total	308	4.279	2.311		
Sum b4cb: Safety and security digital skills	7-9	108	6.083	1.757	12.918	.000
	10-12	111	6.703	1.682		
	13-15	89	7.3483	1.791		
	Total	308	6.672	1.807		
Sum b4cc: Communication skills and digital participation	7-9	108	6.306	1.826	17.556	.000
	10-12	111	7.108	1.702		
	13-15	89	7.787	1.735		
	Total	308	7.023	1.848		
Sum b4d: Content creation and digital innovation	7-9	108	.898	1.540	40.251	.000
	10-12	111	2.423	2.279		
	13-15	89	3.517	2.321		
	Total	308	2.205	2.313		
Sum b4e: Problem solving skills	7-9	108	3.241	2.135	51.466	.000
	10-12	111	4.739	2.319		
	13-15	89	6.371	1.962		
	Total	308	4.685	2.485		
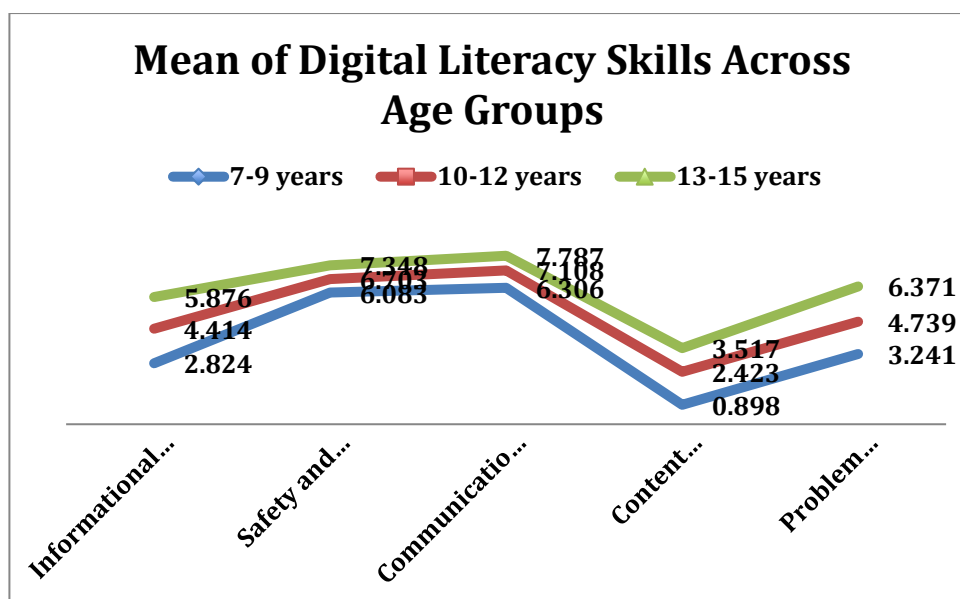
When averaged out from a scale of 1-10, it was found that the children had mostly below to slightly above average adoption of the skills measured. The two skill domains that scored higher than average are communication skills and digital participation (M=7.023), followed by informational and operational skills (M=6.672). The three other domains saw below average scores and they include problem solving skills (M=4.685), informational and operational skills (M=4.279). The children scored lowest in

content creation and digital innovation (M=2.205). This indicates that the children need significant support in order to become digitally literate and competent. The children scored high in the communication skills because they had mostly translated everyday offline, real-world ethics and rules such as respect and privacy into their online practices. However, whether they can technically translate this to their digital practice is yet to be seen. In addition, the ANOVA test conducted showed that there is a significant difference in the children' level of digital literacy skills across different age groups. The older children aged 13-15 years old scored better on all categories when compared to the younger children. The study found that there is a systematic relationship between age and the adoption of digital skills. The older the children, the more digitally skilled they become. This finding is supported by the natural tendencies of increased knowledge and skills that comes together with age and experience.

However, the differences in age did not contribute to the increase in the overall scores. This meant that ultimately all the children, regardless of age did not perform well on all the skills measured. The low scores especially for content creation and digital innovation signals a need for more initiatives to be undertaken to ensure that the children can become active digital citizens.

In sum the children have basic digital skills in terms that they do know how to use basic digital devices such as smart phones and laptops. They also know how to search through the Internet and to download software and applications. However, most of them do not have the skills to operate digital devices for purposes beyond consuming content. The children are generally aware of online threats and can conceptually understand online risks but lack the skill to protect themselves because they are unable to do basic online security measures such as downloading antiviruses and setting privacy settings. In broad, the children are able to communicate well and are aware of how to communicate with others online. They understand the concept of respect and good behaviour. Majority of the children are not able to create content online. The most they can do is change the wallpaper on their smartphone. They are not able to edit content or use digital media to do basic knowledge representations such as mind maps, graphic image and posters.

RECOMMENDATIONS

Based on the findings and considerations from other studies, the study proposed these key recommendations:

Leverage on existing community programs with basic introduction to digital literacy.

The study recommends that any existing campaigns or programs that focus on digital penetration be equipped with simple modules and guides that could come in the forms of simple brochures and attractive videos to help the children understand that there are a set of requirements that comes with the devices.

Need for an enhanced multi-stakeholder partnership

This study proposes for multi-stakeholder partnerships to be enhanced by including more educational and training programs that are specific to the children. Children-focused programs must adopt special approaches that can cater to the children's ability to conceptualise the notion of digital literacy. While there had been quite a number of programs that relate digital technologies to Science Technology, Engineering and Mathematics (STEM), it would also be beneficial if there could be more creative partnerships with the arts and gaming communities. This would inform the children about the infinite possibilities of digital media and that there are opportunities for all kinds of interests and inclinations.

Awareness raising and advocacy initiatives to highlight the importance of digital parenting

The study recommends that more awareness raising and advocacy initiatives be initiated to highlight the importance of digital parenting. While parents have the best opportunity to nurture digitally resilient children, not all parents have the ability to do so. Unfortunately, parents have a few places to turn to get advice on digital parenting. Digital safety campaigns and digital parenting modules are often focused on reducing the exposure to harmful material and restricting children's access. This mostly tells parents that the best way to digitally parent is to restrict and control. The inability to recognize that parents have unique experiences leads to the failure of providing them with the right digital parenting skills. Real parents are likely finding it difficult to locate, evaluate and select resources and guidance appropriate for their children and their family's circumstances.

CONCLUSION

The children at the PPR, like most children today, have become digital by default since they are easily exposed to the digital world despite having few resources and devices. However, as this study discovered, the children have low levels of digital literacy, particularly in terms of content creation and digital problem solving. As a result, the children are ill equipped to participate in a digital world brimming with opportunities. Going into this world blind can be dangerous. Hence it is critical that the children be equipped with the necessary skills to navigate the digital world securely and successfully. Furthermore, it is essential to consider that children's digital experiences begin at home. Parents must monitor their children's digital usage. Unfortunately, the majority of parents are still struggling to understand how the digital revolution is affecting their personal lives. Therefore, digital literacy training for children must be supplemented with digital parenting program.

The main issue that affected the research project is definitely the imposed Movement Control Order (MCO) as well as the threat of COVID-19 infection. The challenge was the inability to conduct the survey physically at the locality. The challenge of using phone surveys is that it is tedious and time consuming. Some respondents below the age of 10 had issue to fully comprehend the questions and this required the enumerators to do some coaching and motivating.

In addition, the sample only came from PPRs in the Klang valley area and may not truly represent the conditions of all B-40 children that live in both urban and rural areas. Also, as all participating children were from 7 to 15 years of age and come from the B-40 level, the research does not provide any insights about children of other ages and socioeconomic background. It has to be expected that the use of ICT and patterns of interaction change during childhood and adolescence.

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