# PENGETAHUAN DAN PENERIMAAN TEKNOLOGI DI KALANGAN PELAJAR LUAR BANDAR DI MALAYSIA

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**Abstrak**

Penggunaan teknologi mudah alih adalah sejajar dengan sasaran sektor pendidikan di mana ianya menyokong dan menggalakkan pembelajaran berlaku di mana sahaja dan pada bila- bila masa. Namun begitu, ketika kemudahan teknologi mudah alih dan kepesatan infrastruktur telekomunikasi dinikmati oleh negara- negara maju, jurang teknologi masih wujud di negara- negara membangun. Justeru, artikel ini membincangkan tentang pengetahuan dan penerimaan teknologi di kalangan para pelajar sekolah rendah di kawasan luar bandar di Malaysia. Kajian ini melibatkan dua buah sekolah rendah yang mempunyai perbezaan nilai sosiobudaya; sebuah sekolah di perkampungan orang asli dan sebuah sekolah di perkampungan Melayu di luar bandar. Borang soal selidik diedarkan di kalangan para pelajar bagi mendapatkan maklumat berkenaan penggunaan dan pengetahuan teknologi di kalangan mereka. Melalui hasil dapatan daripada soal- selidik tersebut, artikel ini akan menerangkan berkenaan tingkah laku pelajar dan respon mereka terhadap peralatan digital dan pembelajaran mudah alih. Perbezaan persepsi dan penerimaan terhadap teknologi di antara pelajar di kalangan orang asli da sebaliknya juga akan diulas di dalam kajian ini.

**Katakunci:** Pembelajaran Mudah Alih, Peranti Teknologi, Sekolah Rendah, Pedalaman Malaysia, Pengajaran dan pembelajaran

*Dihantar : 23 Feb 2023* *Disemak : 7 Mac 2023* *Diterbit : 1 Julai 2023*

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# TECHNOLOGICAL KNOWLEDGE AND ACCEPTANCE AMONG RURAL PRIMARY SCHOOLS IN MALAYSIA

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***Abstract***

*The use of mobile technologies appears to be in line with the strategic goals in education besides facilitating and promoting learning anywhere and anytime. However, despite the realization of ubiquitous mobile infrastructures and practices in much of the developed world, a digital divide still exists in developing countries. This paper discusses the knowledge and acceptance of technology among primary school students in rural Malaysia. This study involved two rural primary schools with different sociocultural values; an aboriginal school and a rural Malay school. Questionnaires were distributed among the students to have their insight into technological knowledge and usage. Through the questionnaire, this paper describes the students' behaviour and responses toward digital devices and mobile learning. The different perceptions and acceptance towards technology between the aboriginal and non-aboriginal students are also reviewed in this paper.*

**Keywords**: Mobile Learning, Technology devices, Primary Schools, Rural Malaysia, Teaching and Learning

*Sent : 23 Feb 2023* *Revised : 7 Mac 2023* *Published : 1 Julai 2023*

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## 1.0 Introduction

In most developed countries, the provision of technology is their major concern. Despite the realization of ubiquitous information and communication technology infrastructures and practices in much of the developed world, a digital divide still exists in developing countries. Malaysia has long recognised the importance of ICTs to encourage national development. National IT Council and National IT Agenda were formulated in 1990 and 1996 respectively followed by the establishment of the Malaysia Multimedia Super Corridor (MSC) in 1996 to drive the transformation to be an entirely developed nation (Shamsuddin, n.d). Malaysia has introduced various initiatives to facilitate the integration of ICT, especially in education. The government's goal is to bridge the educational and digital gap between rural and urban students and it is stated through various proposals outlined in the Malaysia Education Blueprint 2013- 2015. To enhance ICT use in education, the government has supported various ICT projects such as the Smart School Project, computer labs in remote and urban schools, WebTV, SchoolNet, and school access centres (Shamsuddin, n.d.). Nevertheless, despite numerous inventiveness taken by the government to enhance ICT access in Malaysia, certain parts of the country still lack behind others in terms of ICT use and access especially those in rural areas.

The Covid-19 pandemic that hit the world in 2020 has been an awakening alarm for the government. The lockdown implemented in Malaysia since March 2020 has caused the closure of education sectors including schools and universities. The school closure in Malaysia has impacted 8 million pupils (Azahar, 2020). Therefore, the Malaysia's Ministry of Education has demanded to carry out online learning to prevent students from falling behind in their studies (Ministry of Education, 2020). However, a report by the government news agency has exposed that Internet services in rural areas were extremely limited and unstable, causing difficulties for rural students to join online classes (Bernama, 2020). This alerted the government to seriously take into account the importance of digital literacy and good ICT infrastructure for those living in remote areas as rural students are still not benefiting from digital advancement due to a lack of access to broadband internet infrastructure. It is also important to understand the level of digital literacy of the community before forcing them to use the proposed technology as there is also a significant difference between usability in urban areas and rural areas even in the same country (Reitmaier, Bidwell & Marsden, 2010). The technology that worked for teaching students in developed countries will not consistently work with students in developing countries (Woolf, Arroyo, & Zulkarnaen, 2011). Hence, it is crucial to study the rural students' environment and requirements to understand what are the limitations they have for not being able to enjoy digitalisation. Therefore, this study aims to explore what are the technological knowledge among Malaysian rural school students and what is their level of technological acceptance. It is highly hoped that the results from this study will enlighten and help other researchers or technology developers to understand the rural school requirements before developing and proposing new technologies to them. This is to ensure high technology adoption among rural students and teachers in Malaysia.

## 2.0 Method

This research adopted an ethnographic study to get an overview of the rural schools' teaching and learning activities based on the actual context. This includes an understanding of the activities, environments and interactions. This study involves two rural primary schools with different sociocultural values: a school for indigenous children and a rural Malay school. The rural Malay school is located on an island where sampan and speedboat were the main transportation for the students and teachers to commute from their houses to the school. In contrast, the aboriginal school is located in the middle of the forest where an uneven dirt road is the main route. Due to their remote location and difficulty to commute, both schools provided hostels for the students to stay during the schooling session. However, based on the field study of both schools, most of the students from the rural Malay school were found commuting everyday from their residences to school. This is contrary to the aboriginal students where the majority of them were staying at the hostel and only go back home on weekends or during school holidays. To have a better understanding of the context, we were allowed to stay at the aboriginal school's hostel for a week

to conduct this research. As for the rural Malay school, we were allowed to go to the school everyday for two weeks to observe the students and the way teaching and learning took place. This research adhered to the specific procedures mandated by the University of Surrey Ethics Committee for studies involving primary school children. The Committee granted a positive ethical evaluation and the Economic Planning Unit of the Malaysian Prime Minister's Department gave consent.

### 2.1 Study Procedures

Primary schools in Malaysia are divided into two levels: Tier 1 and Tier 2. Tier 1 consists of students from standard one to standard three, aged between seven and nine, while Tier 2 is for students in standard four to standard six, aged between ten to twelve. Thus, this study involved two groups: Tier 1 and Tier 2 students. A total of 92 students were involved in this study.

Boh groups received a set of questions in the form of a questionnaire, which aimed to assess their current level of digital engagement and the availability of consumer technologies. The questionnaire consisted of four sections: personal information, available digital technologies, mobile phone usage, and Internet connectivity. The researcher provided assistance during the questionnaire administration and gave a brief overview of the research project to the students before they started answering the questions. To ensure clarity, some terminology such as "digital" and "mobile devices" was defined for students who were unfamiliar with the terms. The collected questionnaire data was analysed using the Statistical Package for the Social Sciences (SPSS).

## 3.0 Results from the Questionnaire

Each category was divided into two groups; Tier 1 and Tier 2.

### 3.1 Findings for Tier 1

***Part 1 - Digital Technologies Available***

The questions were crafted to acknowledge the digital technologies accessible to the students. They were presented with a list of digital devices and requested to indicate their usage according to predefined categories. In the participating rural Malay school, all students were categorized into two classes based on their potential, with the first class comprising higher-performing students and the second class comprising the rest. This approach was adopted to enable the school to provide, manage, and select appropriate learning methods for students with different levels of understanding. Following discussions with the headteacher, Standard 3 (nine years old) and Standard 5 (eleven years old) first-class students were selected for the study, as they were predominantly literate, well-behaved, and capable of easily understanding instructions. The study included thirty participants in Tier 1, and all students were Malay.

Conversely, the aboriginal school featured only one class for each level. The questionnaire was administered to thirteen randomly-selected Tier 1 students in Standard 3, with assistance from the school teacher in charge. Given their communication limitations and illiteracy, the questionnaire was distributed to each student individually with full support from the researchers. All devices listed in the questionnaire were visually and verbally demonstrated to the students using photos and actual devices to ensure that they were fully familiar with them before answering the questions.

Table 1 presents the findings, which indicate that television is the most prevalent technology among students from both schools, with a majority of them watching it on a daily basis. Notably, even though all aboriginal school students were housed in the hostel, they had access to television in the school dining hall. The results also highlight significant disparities in digital technology knowledge and experience between the two schools, with aboriginal students lagging behind their peers. Nonetheless, mobile phones (smartphones or candy bar), desktops, and CD/DVD players were relatively common devices among students from both schools.

**Table 1**. Digital Devices Usage Frequency for Tier 1

| Devices | Malay Rural School (n = 30) | | | | | | Aboriginal School (n= 13) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Never (%) | Daily (%) | Last Week (%) | Last Month (%) | Last 6 Months (%) | Last Year (%) | Never (%) | Daily (%) | Last Week (%) | Last Month (%) | Last 6 Months (%) | Last Year (%) |
| **Mobile Phones** | 17.9 | 35.7 | 28.8 | 0.0 | 10.7 | 7.1 | 46.2 | 0.0 | 0.0 | 7.7 | 46.2 | 0.0 |
| **Desktop Computer** | 6.7 | 10.0 | 76.7 | 6.7 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Laptop** | 67.9 | 14.3 | 0.0 | 14.3 | 0.0 | 3.6 | 92.3 | 0.0 | 0.0 | 0.0 | 7.7 | 0.0 |
| **Tablet/ Ipad** | 44.4 | 25.9 | 3.7 | 11.1 | 3.7 | 11.1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Digital Camera** | 60.7 | 10.7 | 3.6 | 10.7 | 7.1 | 7.1 | 92.3 | 0.0 | 0.0 | 0.0 | 7.7 | 0.0 |
| **Video Recorder** | 78.6 | 10.7 | 7.1 | 0.0 | 0.0 | 3.6 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Handheld Game** | 57.1 | 10.7 | 14.3 | 7.1 | 3.6 | 7.1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **MP3 Player** | 83.3 | 3.3 | 6.7 | 3.3 | 0.0 | 3.3 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Pendrive** | 75.0 | 10.7 | 10.7 | 0.0 | 3.6 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Television** | 3.3 | 93.3 | 3.3 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **CD/ DVD Player** | 13.3 | 16.7 | 40.0 | 16.7 | 3.3 | 10.0 | 46.2 | 15.4 | 7.7 | 0.0 | 30.8 | 0.0 |

***Part 2 - Mobile Phones***

Part 2 of the questionnaire aimed to ascertain the presence of mobile phones in students' households and identify the owners of these devices. This information was critical in determining the number of mobile phones available in each household, which, in turn, could shed light on the feasibility of incorporating mobile phones into the teaching and learning process in rural areas. Part 2 consisted of two primary questions. Students were asked to identify the owners of the mobile phones they used, if any, and describe the main activities they engaged in using these devices. By analyzing the students' mobile phone usage patterns and frequencies, we sought to gain insights into their level of understanding and knowledge of mobile technology.

**Table 2**. Mobile Phone Owner for Tier 1

| Item | Malay Rural School (n= 30) | Aboriginal School (n= 13) |
|---|---|---|
| | Frequency (Valid Percent) | Frequency (Valid Percent) |
| Own | 4 (13.3) | 0 (0.0) |
| Mom | 24 (80.0) | 7 (53.8) |
| Dad | 21 (70.0) | 7 (53.8) |
| Siblings | 18 (60.0) | 8 (61.5) |
| Other | 0 (0.0) | 0 (0.0) |

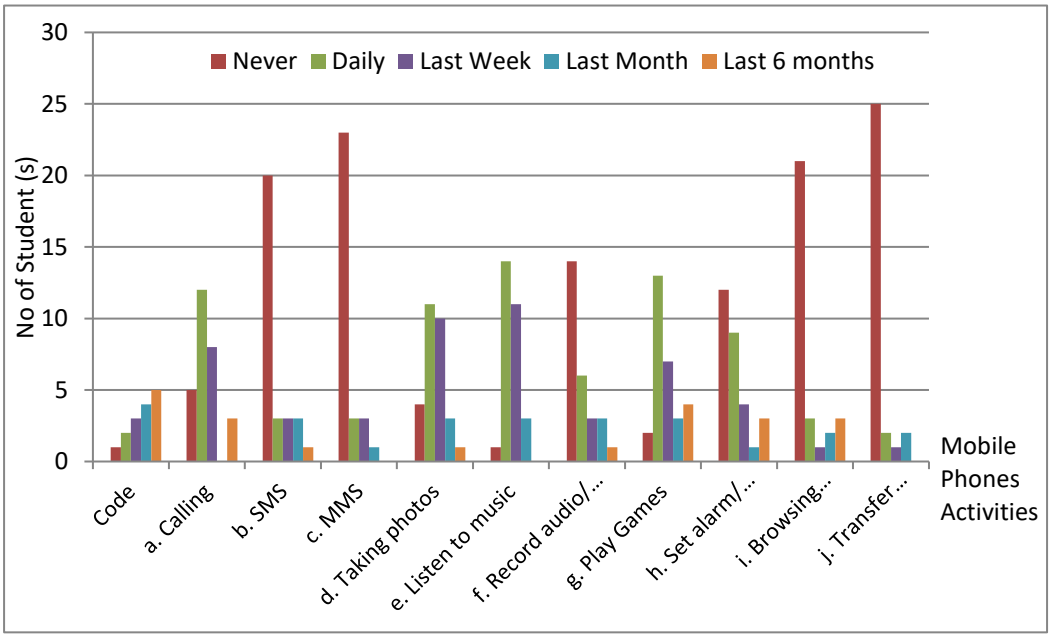


**Figure 1**. Mobile Phone Activities for Tier 1 of Malay Rural School (n= 29)

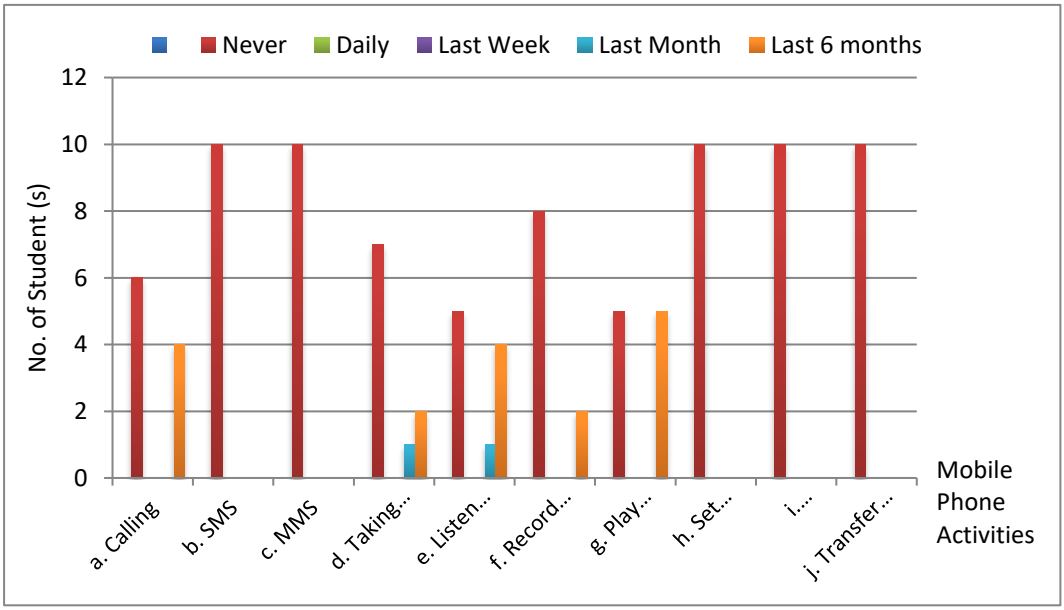


**Figure 2**. Mobile Phone Activities for Tier 1 of Malay Rural School (n= 10)

Based on the findings in the data analysis, it was determined that the majority of students attending the rural Malay school came from families that owned at least one mobile phone. As presented in Table 2, mothers were found to be the primary owners of these mobile devices, followed by fathers and siblings. Only a small percentage of students, 13% out of 30, were found to have their own mobile phone. Figure 1 further revealed that listening to music, playing games, calling, and taking photos were the most common activities among the Tier 1 students. Conversely, transferring photos or data, MMS, browsing the Internet, and sending SMS were reported to be the least popular activities. These results provide insights into the students' mobile technology usage patterns and preferences.

As for the aboriginal school, three students (23.1%) from Tier 1 were recorded for not owning any mobile phones in their homes. However, the majority of the students (76.9%) owned at least a mobile phone in their families, regardless of whether it is a smartphone or just a candy bar. Based on the informal conversations with the students, it was understood that their brothers and sisters were working in the nearest town. Thus it was understandable that some of the young generations of the aboriginal people somehow did not inherit their traditional parents' occupation. Hence, it was not surprising to see the results of the mobile phone owners among the students' siblings were higher than their parents which were 61.5%, 7.7% higher than mobile phones owned by the parents.

In the aboriginal school, it was found that 23.1% of the Tier 1 students did not have access to mobile phones at home. However, the majority of students (76.9%) reported that their families owned at least one mobile phone, regardless of whether it was a smartphone or a basic phone. During informal conversations with the students, it was discovered that many of their siblings were working in the nearest town, indicating a shift away from traditional occupations. As a result, it was not surprising that a higher percentage of mobile phones were owned by the students' siblings (61.5%) than their parents (54%).

***Part 3- Internet Connection and Favourable Mobile Devices***

This section serves as the final component of the questionnaire, where the students were asked to provide insights into their usage of Internet facilities. The purpose of this section is to determine the extent to which rural students use the Internet. Additionally, the questionnaire included questions on the students' preferred mobile devices, including laptops, smartphones, digital cameras, and tablets/iPads. Understanding their device preferences can aid in selecting suitable platforms for rural students

Table 3 presents the proportion of students who have access to the Internet at home and those who do not. In the Malay rural school, there was not a significant disparity between the number of students who accessed the Internet at home (47%) and those who used the school computer lab (13%). The remaining students reported using the Internet provided by mobile telecommunication companies through mobile data plans, indicating that Internet-enabled mobile phones were prevalent in their households. Although the majority of students had some experience using the Internet, there was a significant difference in Internet literacy among the aboriginal respondents. None of the aboriginal students had prior experience using the Internet, as their remote location was not covered by any mobile network or telecommunication provider. The school had a Wi-Fi connection via satellite, but the speed was slow, and network disruptions were frequent. The school's computer lab had approximately 20 desktop computers, but none of them were connected to the Internet. The students' preferred mobile devices were smartphones, tablets/iPads, and digital cameras. Understanding their device preferences can aid in selecting appropriate platforms for rural students.

**Table 3**. Summary of Part 3 for Tier 1

| Q1. Do you have an internet connection at home? | | | |
|---|---|---|---|
| Scale | | SK Pulau Beluru Frequency (%) | SK Tohoi Frequency (%) |
| Yes | | 13 (43.0) | 0 (0.0) |
| No | | 17 (57) | 13 (100.0) |
| Q2. Where do you normally use and get an internet connection? | | | |
| Item | | | |
| Home | | 14 (47) | 0 (0.0) |
| Computer Lab | | 4 (13) | 0 (0.0) |
| Public Places | | 2 (7) | 0 (0.0) |
| Other | | 5 (17) | 0 (0.0) |
| Q3. To what extent do you like to use the following technologies | | | |
| Item | Scale | Frequency (%) | |
| Laptop | Not at all | 2 (6.7) | 7 (53.8) |
| | Eager but don't have the chance yet | 15 (50) | 1 (7.7) |
| | No idea about this device | 4 (13.3) | 5 (38.5) |
| | Very much but don't own the device | 7 (23.3) | 0 (0.0) |
| | Own and using the device often | 1 (3.33) | 0 (0.0) |
| Smartphone | Not at all | 6 (20.0) | 6 (46.2) |
| | Eager but don't have the chance yet | 10 (33.3) | 3 (23.1) |
| | No idea about this device | 2 (6.7) | 1 (7.7) |
| | Very much but don't own the device | 8 (26.7) | 3 (23.1) |
| | Own and using the device often | 1 (3.33) | 0 (0.0) |
| Digital Camera | Not at all | 5 (16.7) | 7 (53.8) |
| | Eager but don't have the chance yet | 12 (40) | 4 (30.8) |
| | No idea about this device | 2 (6.7) | 1 (7.7) |
| | Very much but don't own the device | 8 (26.7) | 1 (7.7) |
| | Own and using the device often | 0 (0) | 0 (0.0) |
| Tablet/ iPad | Not at all | 1 (3.33) | 4 (30.8) |
| | Eager but don't have the chance yet | 13 (43.3) | 2 (15.4) |
| | No idea about this device | 4 (13.3) | 7 (53.8) |
| | Very much but don't own this device | 7 (23.3) | 0 (0.0) |
| | Own and using the device often | 5 (16.7) | 0 (0.0) |

### 3.2 Findings for Tier 2

***Part 1 - Digital Technologies Available***

**Table 4**. Digital Devices Usage Frequency for Tier 2

| Devices | Malay Rural School (n = 30) | | | | | | Aboriginal School (n= 17) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Never (%) | Daily (%) | Last Week (%) | Last Month (%) | Last 6 Months (%) | Last Year (%) | Never (%) | Daily (%) | Last Week (%) | Last Month (%) | Last 6 Months (%) | Last Year (%) |
| **Mobile Phones** | 12.5 | 56.3 | 28.1 | 0.0 | 0.0 | 3.1 | 41.2 | 5.9 | 5.9 | 0.0 | 29.4 | 17.6 |
| **Desktop Computer** | 3.1 | 18.8 | 40.6 | 34.4 | 0.0 | 3.1 | 76.5 | 0.0 | 0.0 | 0.0 | 11.8 | 11.8 |
| **Laptop** | 25.0 | 21.9 | 18.8 | 9.4 | 6.3 | 18.8 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Tablet/ Ipad** | 22.6 | 32.3 | 6.5 | 16.1 | 0.0 | 22.6 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Digital Camera** | 56.3 | 12.5 | 6.3 | 0.0 | 0.0 | 25.0 | 82.4 | 0.0 | 5.9 | 0 | 11.8 | 0.0 |
| **Video Recorder** | 83.9 | 0.0 | 3.2 | 6.5 | 6.5 | 0.0 | 88.2 | 0.0 | 5.9 | 0.0 | 5.9 | 0.0 |
| **Handheld Game** | 21.9 | 21.9 | 15.6 | 9.4 | 3.1 | 28.1 | 88.2 | 0.0 | 0.0 | 0.0 | 11.8 | 0.0 |
| **MP3 Player** | 19.4 | 22.6 | 25.8 | 9.7 | 3.2 | 19.4 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Pendrive** | 48.4 | 12.9 | 12.9 | 6.5 | 12.9 | 6.5 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Television** | 3.1 | 93.8 | 3.1 | 0.0 | 0.0 | 0.0 | 5.9 | 82.4 | 5.9 | 0.0 | 5.9 | 0.0 |
| **CD/ DVD Player** | 21.9 | 18.8 | 15.6 | 12.5 | 3.1 | 28.1 | 76.5 | 5.9 | 0.0 | 5.9 | 11.8 | 0.0 |

In Table 4, we observe that the use of television was the most common device among students in both schools, similar to Tier 1 students. Despite the fact that 56.3% of students in the Malay rural school have not used a digital camera before, an equal percentage reported using a mobile phone on a daily basis. Furthermore, the table reveals that the majority of Malay rural school students have experience using desktop computers. The desktop was reported to be used weekly and almost monthly. The weekly use of desktops was due to the mandatory Information and Communications Technology (ICT) class attended by the students every week. In contrast, the majority of Tier 2 students in the aboriginal school have never used most of the devices except for television, mobile phones, and CD/DVD players. Only five out of sixteen (29.4%) students reported using mobile phones in the last six months while they were at home during school holidays.

***Part 2- Mobile Phones***

Table 5. Mobile Phone Owner for Tier 2

| Item | Malay rural School (n= 32) | Aboriginal School (n= 17) |
|---|---|---|
| | Frequency (Valid Percent) | Frequency (Valid Percent) |
| Own | 10 (31.3) | 0 (0.0) |
| Mom | 23 (71.9) | 5 (29.4) |
| Dad | 24 (75.0) | 11 (64.9) |
| Siblings | 23 (71.9) | 13 (76.5) |
| Other | 0 (0.0) | 0 (0.0) |

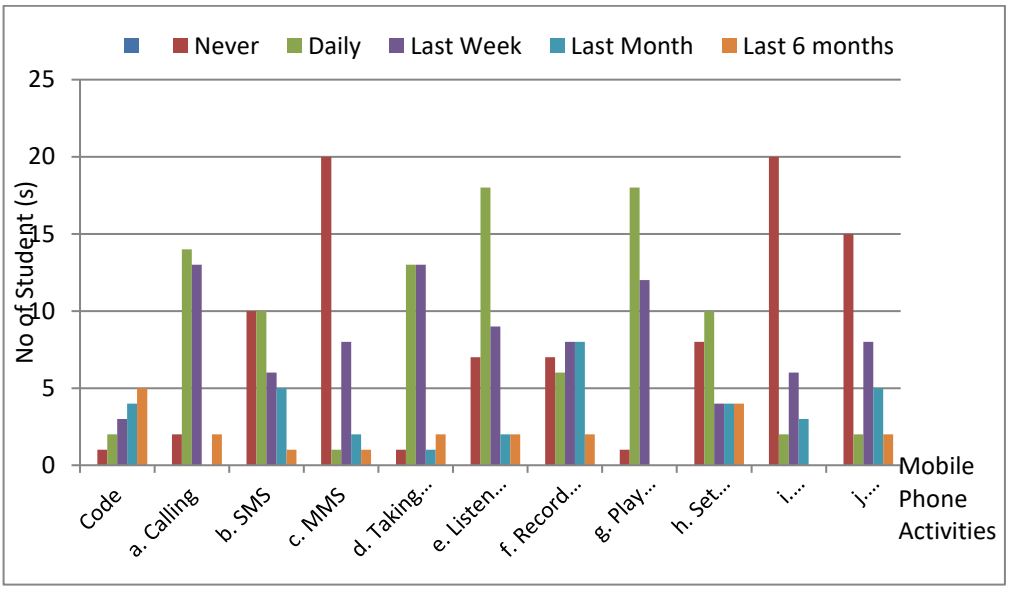


**Figure 3**. Graph Summary of Mobile Phone Activities for Tier 2 of the Malay Rural School
(n= 31)

The mobile phones of the Tier 2 students for both the Malay rural school and the aboriginal school students were owned by their parents and siblings. Results in Table 5 indicate that mobile phones were not something new to the student regardless of whether it was just candy bar type or smartphone. 10 out of 32 students of the Malay rural school claimed that they owned a mobile phone, which was an improvement for the primary school students in the rural area. However, the students from both schools were reported for never using a mobile phone for sending or receiving multimedia messaging system (MMS), browsing the Internet and transferring data. As for the aboriginal school, the students had never used the short messaging system (SMS) due to their inability to read and spell.

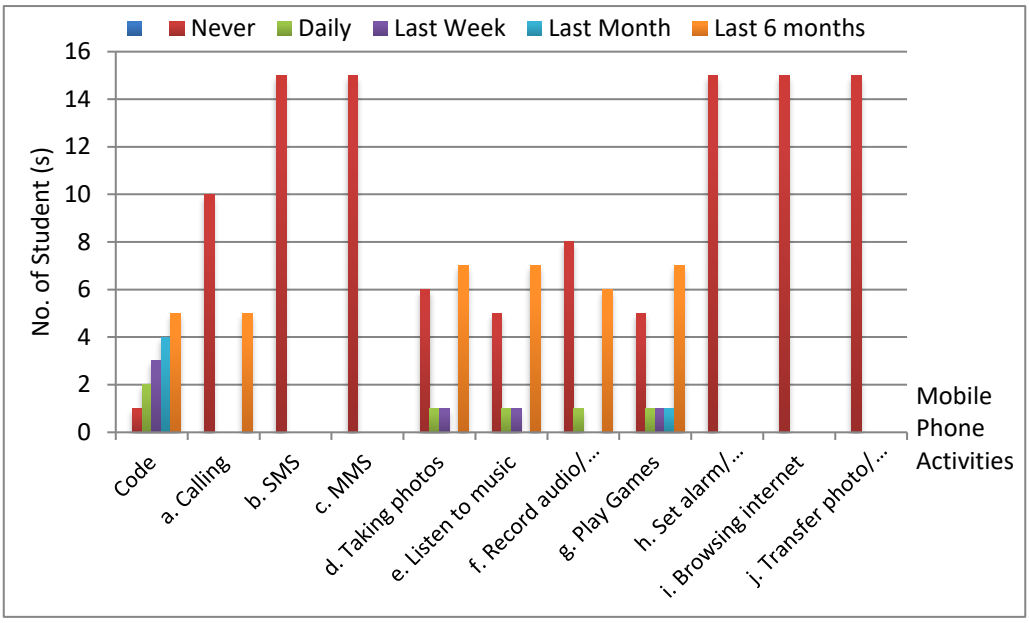


**Figure 4**. Graph Summary of Mobile Phone Activities for Tier 2 of SK Tohoi (n= 15)

***Part 3- Internet Connection and Favourable Mobile Devices***

All of the respondents of the rural Malay school were reported to have experience in using the Internet even though the majority of them did not have an Internet connection at home. Their sources of Internet connection were from home Internet, mobile data, and the school computer lab. However, a different situation was reported for the respondents from the aboriginal school where all of the students had no experience in using the Internet even though there was a wifi satellite provided in the school area because the connection was limited and often missing.

Table 6. Summary of Part 3 for Tier 2

| | | | |
|---|---|---|---|
| Q1. Do you have an internet connection at home? | | | |
| Scale | | SK Pulau Beluru Frequency (%) | SK Tohoi Frequency (%) |
| Yes | | 11 (34.4) | 0 (0.0) |
| No | | 21 (65.6) | 17 (100.0) |
| Q2. Where do you normally use and get an internet connection? | | | |
| Item | | | |
| Home | | 11 (34.4) | 0 (0.0) |
| Computer Lab | | 24 (75.0) | 0 (0.0) |
| Public Places | | 1 (3.1) | 0 (0.0) |
| Other | | 1 (3.1) | 0 (0.0) |
| Q3. To what extent do you like to use the following technologies | | | |
| Item | Scale | | |
| Laptop | Not at all | 2 (6.5) | 1 (5.9) |
| | Eager but don't have the chance yet | 12 (38.7) | 10 (58.8) |
| | No idea about this device | 0 (0.0) | 6 (35.3) |
| | Very much but don't own the device | 12 (38.7) | 0 (0.0) |
| | Own and using the device often | 5 (16.1) | 0 (0.0) |
| Smartphone | Not at all | 1 (3.2) | 0 (0.0) |

| | | | |
|---|---|---|---|
| | Eager but don't have the chance yet | 13 (41.9) | 12 (70.6) |
| | No idea about this device | 1 (3.2) | 2 (11.8) |
| | Very much but don't own the device | 7 (22.6) | 3 (17.6) |
| | Own and using the device often | 9 (29.0) | 0 (0.0) |
| Digital Camera | Not at all | 4 (12.9) | (0 (0.0) |
| | Eager but don't have the chance yet | 15 (48.4) | 15 (88.2) |
| | No idea about this device | 2 (6.5) | 1 (5.9) |
| | Very much but don't own the device | 7 (22.6) | 1 (5.9) |
| | Own and using the device often | 3 (9.7) | 0 (0.0) |
| Tablet/ iPad | Not at all | 0 (0.0) | 0 (0.0) |
| | Eager but don't have the chance yet | 8 (25.8) | 13 (76.5) |
| | No idea about this device | 2 (6.5) | 4 (23.5) |
| | Very much but don't own this device | 16 (51.6) | 0 (0.0) |
| | Own and using the device often | 5 (16.1) | 3 (0.0) |

### 3.3 Discussion

This field trip analysis indicates that there was a considerable gap between the students of the rural Malay school and the aboriginal school even though both of them were from the same range of ages and school levels. The differences to be taken into account to improve digital literacy and to support ICT acceptance and usage in teaching and learning for rural students are as listed below:

**i. Ability to read**

In contrast to the students from the rural Malay school who were mostly literate, the majority of the aboriginal students were found to be illiterate. Out of the 30 aboriginal students who participated in the questionnaire, only about 10 percent were able to read and recognize letters, indicating a significant gap in literacy levels between the two groups of students.

**ii. Information technology literacy**

Despite being categorized as rural schools, there were significant differences in the use of technology between the students of both schools. The students from the rural Malay school appeared to be more technologically literate than those from the aboriginal school, despite coming from families with similar financial backgrounds. The majority of students from the rural Malay school were familiar with most of the mobile devices listed in the questionnaire, although they did not necessarily own them, and had access to the Internet either at home or in the school computer lab. In contrast, the students from the aboriginal school were unfamiliar with almost all of the devices listed, and none had ever used the Internet.

**iii. Students' Attitude**

The sample students of the rural Malay school were active and participated. They seemed motivated to study despite having difficulties in getting to school, as they needed to take a



boat or sampan to cross the river every day. Based on the observation of the sample students from the aboriginal school, it was obvious that students were more passive and took time to engage in activities that were new to them. Since the majority of them were illiterate, their motivation to study was poor. They preferred to conduct their activities within their groups. Activities they did during recess or leisure time included chasing each other, playing football, chatting, climbing trees, catching insects, drawing on the sidewalk and so on.

**iv. School facilities**

Although the rural Malay school is located on an Island, the facilities available at the school were nearly sufficient though the Internet and mobile networks in the school area were unstable. This contrasted with the aboriginal school where the facilities were relatively limited, especially in terms of technology. Though the school was equipped with a computer lab, the Internet connection was relatively low and almost none. There was a Wi-Fi connection satellite, but unfortunately, it did not function as expected, as well as the mobile network. Given the school is located very far inland, teachers and villagers need to leave the area to get mobile and Internet coverage.

**v. Current Technology Available**

Besides television, the mobile phone was the device that was well-known for the students in both schools irrespective of whether it was the type of smartphone or a basic phone. Playing games, listening to music, calling and taking photos were the typical activities done with mobile phones for the respondents from both schools. Most of the students were interested in using a tablet or iPad even though they did not have any experience using it and smartphones were the mobile devices they wished to own.

## 4.0 Conclusions

Results from this field trip indicate that the provision of technology alone is not sufficient enough to ensure students can utilise technology in their education, especially if it involves students from rural areas. Cultural issues are also one of the factors that affect digital media literacy and technological knowledge. Many great technologies and applications have been developed and used in developed countries and urban communities, but it does not mean they will have the same impact on illiterate and rural populations. It is also believed that besides promoting computer literacy, the function of ICT in schools should also promote other forms of literacy, as well as enhance the teaching and learning experience among teachers and students. Even though both schools show a significant difference in technological knowledge, in which the Malay rural school has shown more deficiencies and abilities in the use of technology compared to the aboriginal school, we can see the positive signs of technology adoption in the teaching and learning sessions from the students of both schools. We believed that with the right approach and platform, the digital divide will be diminished. As well as we believed that culture plays an important role in knowledge and technology acceptance, we also believed that school is the best place to educate the community. This can be done through teaching and learning sessions in the classroom. Thus, teaching and learning tools might be the best platform to promote the use of technology among rural school students. Therefore, further study on the rural students' behaviour, the current rural school facilities and teaching methods should be made to understand the students as well as the teachers to gather their requirements needed. This is to ensure the proposed technology or system is following the facility and the ability of the rural schools in Malaysia.

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