Journal of Information and Knowledge Management (JIKM) Volume 13 Number 2 (2023)

The Relationship between Digital Literacy Skills, Learning Instruments, Culture and Student Motivation among Indigenous Students in Malaysia

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Received Date: 31 May 2023
Acceptance Date: 8 August 2023
Published Date: 1 October 2023

Abstract. The Malaysian Ministry of Education (MoE) integrated the Orang Asli Education Transformation Plan in the Malaysia Education Blueprint 2013-2025 and implemented the Primary Literacy and Numeracy programme (PLaN) in indigenous schools in Malaysia. However, according to a report, indigenous student (IS) dropout rates from schools grew considerably to 26% in 2017. IS's feelings about living with their community are the reason why some them having low motivation to attend to school and overlook their education. Therefore, the objective of this study is to examine the relationship between digital literacy skills, learning instruments and culture toward student motivation among IS in Malaysia. A survey questionnaire used to measure the relationship between the variables. Using SmartPLS to analyse the data, it found that two hypotheses were supported: Learning Instruments (t- 3.196, p = <0.001) and Culture (t-1.807, p = <0.036) significantly related with student motivation among IS. The significance of the research is to assist IS in improving sustainability learning so that they can improve quality of life. Hence it can give a guideline to the policymaker to produce a quality education especially for IS and to support the UNESCO initiative Sustainable Development Goal 4, Quality of Education.
Keywords: Knowledge management, digital literacy skills, learning instruments, culture, student motivation, information management.

1 Introduction

In this 21st century learning, the transformation of education around the world has placed emphasis on nation education. Its foundation is to build a knowledge base society. According to Sustainable Development Goal 4 from UNESCO it has emphasized on the quality of education, where in this quality of education there will be no one left behind from getting a good education including the indigenous student (IS) (United Nations Development Programme [UNDP], 2021). IS came from Indigenous people (IP) community, they are from social group that create, manage, and disseminate their indigenous knowledge from one generation to other in order survive in their context of their lifestyle. UNDP, (2021) define IP are the heirs and practitioners of many cultures and ways of relating to one another and the environment. They have maintained social, economic, and political characteristics from the societies that are prevalent where they live. Despite their diverse cultures, indigenous knowledge and neighbourhood traditional influences are important resources in the development process that may help to relieve poverty, encourage innovation, increase competitiveness, and generate income (Yunnus, 2017).

Indigenous peoples (IP) is a common denominator for more than 370 million people, found in more than 70 countries worldwide. In Malaysia, 13.8 percent of the 31,660,700 Malaysian population are IP (International Work Group for Indigenous Affairs [IWGIA], 2017). The three largest ethnic groups of IP are namely the Negrito, Senoi, and Proto Malays. In peninsular Malaysia, the states that record the highest numbers of IP are Pahang and Perak. In Sarawak, their IP, which is Dayak and/or Orang Ulu, is estimated to be further distributed into 15 groups, and consist 70.5% of the Sarawak population. While in Sabah, the IP or Anak Negeri come from 39 ethnic groups which is equivalent to 58.6% of the Sabah population (*Jabatan Kemajuan Orang Asli* [JAKOA], 2018). Although it is clear that the IP community always lives in peace within their group, but they also not free from having to deal with a number of challenges, one of which is the continuous educational issue that is connected to them (Banerjee, 2023).

According to Awang et al. (2022) the IS community has less access and have a lower degree of education compared to the non-indigenous community. Their education typically lacks curriculum and teaching method that respect the histories, cultures, pedagogies, and traditional knowledge of their communities (Sani, 2014). They also having difficulties due to the lack access to education in their native tongues and learning materials does not structured appropriately according to their level (Wodon & Cosentino, 2019). This problem has hinder IS to master literacy and further resulting in a loss of motivation to go to school (Sawalludin et al., 2020). Renganathan (2017) asserts that literacy was a key component of the IS on formal education and schooling. This confirmed by earlier research that showed how crucial it is to develop students' knowledge, abilities, and values across the curriculum and this is done in order to help communities maintain their way of life (Hanafi et al., 2014).

2 Literature Review

In Malaysia, there are various special initiatives made to advance education among IS. Ministry of Education in Malaysia (MoE), introduced the Orang Asli Education Transformation initiative in the Malaysia Education Blueprint 2013-2025 and implemented the Primary Literacy and Numeracy programme (PLaN) in 117 Orang Asli schools nationwide (Jeevita, 2023). By bringing such efforts into practise, the IP community will be better educated, especially in the area of literacy, ensuring that IS can grasp the abilities of reading, writing, and counting and will impact on life and career skills in areas outside of formal schooling as well (Masnan et al., 2021). Therefore, the purpose of this study is to examine the relationship between digital literacy skills, learning instruments and culture toward student motivation among IS in Malaysia.

2.1 Digital Literacy Skills

Students nowadays must possess a variety of technological and cognitive skills known as "digital literacy," since the world is becoming more digital. These abilities allow students to use digital tools to successfully explore, assess critically, create, and communicate (Li et al., 2020). There are various important factors to take into consideration when it comes to student's technical skills. These abilities include the capacity to use digital tools and technology proficiently and successfully. Technology may benefit indigenous students in a number of ways, including by bridging educational gaps, preserving cultural history, and offering chances for empowerment and advancement (Morris et al., 2022). Technology makes information accessible and gives IS access to a wealth of knowledge and learning opportunities. They can research different topics, use online libraries, and engage with educational platforms that offer numerous of relevant content (Green et al., 2020).

2.2 Learning Instruments

In addition to exposure about digital literacy skills, it is also important to take into account the aspect of learning instrumenst, as one of the motivational factors for IS to attend school. One of the most significant components in generating a favourable environment for student is suitable tools for learning (Hanafi et al., 2014). Quality outcomes will be obtained by schools that provide good instructional tools and materials due to the need to learn is satisfied, and students may learn easily (Sawalludin et al., 2020). The utilisation of appropriate and effective educational material and tools is crucial for a pleasant academic environment, but effective and quality instruction cannot be supplied without these factors (Mayan et al., 2017). In addition to providing suitable teaching and learning resources to IS, the materials given should be appropriate for IS level of education. This is due to the fact that not all IS can simply embrace the curriculum-learning syllabus offered by the MoE (Lasan & Mahamod, 2018). In addition from that The MoE has made the effort by designing a curriculum syllabus customised to the cognitive level and talents of IS by incorporating cultural components within the Orang Asli Community Framework (Norwaliza & Ramlee, 2015).

2.3 Culture

As the learning materials have been take care of it is also compulsory to pay attention to IS culture in order to educate them. Among the countries that can be seen in ensuring that their IS is taken care of it is from the country of Canada, to ensure that IS in their country gets broad knowledge and teaching, they not focused on one teaching technique only, they apply the holistic learning (Gordon & White, 2014). It is imperative to approach education holistically, including indigenous methods of knowing, being, and doing. For starters, they are utilising holistic learning. Indigenous education is founded on the concept of holistic learning, which includes a person's cerebral, physical, emotional, and spiritual elements. It is a form of learning that is based on community, land, and language (Poliquin, 2023). In addition, teachers must gain cultural competency to properly teach indigenous perspectives (Chavez et al., 2020). Cultural competency entails learning about indigenous culture, values, and ways of knowing. Land-based learning is a method of teaching and learning that connects IS to their surroundings and the land. It is a holistic approach that combines indigenous knowledge and methods of knowing and promotes environmental care and responsibility (Poliquin, 2023). Study by Dorner and Gorman (2008) also mention about learning from elders, participating in traditional practises, or conducting community-based research are all examples of indigenous knowledges learning for IS understand and interest to learn in school.

2.4 Student Motivation

In addition, according to Mat Deli and Yassin (2016), one of the aspects that contribute to IS' poor academic performance is low motivation and behaviour in terms of learning. Past studies show that feelings of interest towards learning and the school environment have been eroded due to less motivation or encouragement for them to go to school to gain knowledge. A majority of IP, particularly parents, are unaware of the value of education in improving their own and their children's lives. This is because a vast majority of them have never gotten any formal education, and just a tiny percentage of those who do continue their studies until elementary school completed it (Sawalludin et al., 2020).

3 Research Framework

This section discusses the framework that created for the study. The literature consulted to determine how the factors interacted in this study. The idea then developed in order to study the relationship between digital literacy skills, learning instruments, and culture toward student motivation. Digital literacy skills, learning instruments, and culture constructed as independent variables (IVs) for this study. Student motivation is the attached dependent variable (DV). The structure displayed in Figure 1 below:

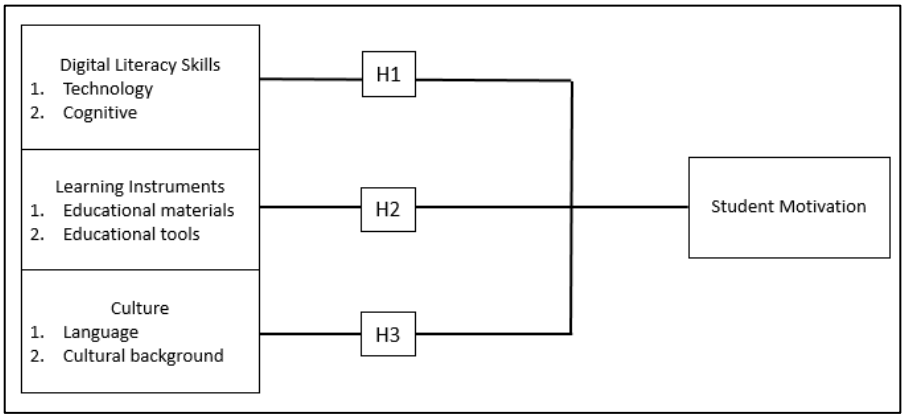

Figure 1: Research Framework

The research framework above shows that digital literacy skills, learning instruments and culture have a relationship with student motivation. This can be proven by exposure to digital literacy skills to IS brings many positive effects. Firstly, it enhances the learning experience. Technology can help enhance students' learning experience. A study by Costley (2014) found that the use of iPads in the classroom improved student engagement and motivation, leading to better academic performance. Collaborative learning using technology can improve student motivation, and critical thinking skills (Li et al., 2020). Along with that, it is crucial to consider a student's cognitive skills. Calvani et al. (2008) mention that being able to read, choose, understand, and evaluate data and information while taking their pertinence and dependability into consideration is a cognitive dimension that will enhance students to critically apply the digital literacy skill in their education.

In addition to the implementation of digital literacy skills, emphasis is also placed on the use of learning instruments that are suitable for IS. The utilisation of appropriate and effective educational material is crucial for a pleasant academic environment, but effective and quality instruction cannot be supplied without these factors (Mayan et al., 2017). In addition to providing suitable teaching and learning resources to IS, the materials given should be appropriate for the IP group's level of education. The use of teaching aids such as tools in science laboratories and sports equipment can add an effective learning experience to IS and further increase their level of motivation (Lasan & Mahamod, 2018).

In addition to the use of study materials that are compatible with IS, the application of cultural elements in IS learning also has a positive impact on their learning motivation (Green et al., 2020). The correct use of language can give IS a good understanding and foster classroom life during the learning session in class (Letchamanan et al., 2021). The use of language that is easy to understand such as their native tongue can attract IS to focus on learning (Bloome et al., 2022). Previous studies have proven that cultural elements that are applied in the learning syllabus at school can encourage IS to attend school. For example, the use of Sewang songs in school per-formances has increased student attendance at school (Manan, 2022).

4 Methodology

This research was using quantitative approached in order to examine the relationship between the digital literacy skills, learning instruments and culture toward student motivation among IS in Malaysia. The instrument used to collect data is using survey questionnaire. As for the population, a total of 175 IS from three selected indigenous primary school under Ministry of Education were involved as suggested by State of Education that age between 11 to 12 years old. This is because according to Piaget (1957), the pioneer of cognitive thinking students at the age of 11 years old and above is in the formal operational stage, who can use their mental operation in order to solve problems and can think logically and manipulate the information well. The purposive sampling technique applied as the selection of respondents which is purposely choose indigenous student within that age based on the cognitive ability to answer the survey questionnaires. Raosoft Calculator used to get the suggestion of the sample size and the recommended sample size by Raosoft calculator is 121.

As for the distribution of the questionnaire, researcher decided to use printed surveys as it is applied administrated questionnaires with the IS. The data preparation processes involved coding and entering data into SPSS, data filtering, and finding any missing responses. Using the survey, the data were entered manually into SPSS. A total of 175 participants responded to the survey. Upon entering the survey responses, a scrutiny was made to spot any incomplete or invalid data and a total of 140 responses were found to be complete, valid and usable for data analysis. In the context of data analysis, the data were analysed using two platforms, namely the Statistical Package for the Social Sciences version 29 (SPSS) and Partial Least Squares Structural Equation Modelling version 3 (SmartPLS).

5 Findings and Discussions

This section discusses about the findings of the study which cover the demograph-ic profile of IS such as age, gender, and the measurement of the relationship between the variables.

5.1 Demographic Profile of Survey Respondents

From Table 1, it shows that the distribution of the age in this study was 46% for the 11 years old and 54% students at the age of 12 years old. Meanwhile in gender section female students take the lead of 55%, followed by male students with 45%.

Table 1: Demographic Profile of Survey Respondent

Variable	**Details**	**N**	**Percent (%)**
Age	11 years old	64	46
	12 years old	76	54

	Total	**140**	**100**
Gender	Male	63	45
	Female	77	55
	Total	**140**	**100**

5.2 Relationship between Digital Literacy Skills, Learning Instruments, Culture and Student Motivation

The relationship between variables: digital literacy skills, learning instruments, culture, and student motivation are shown in table 2. Findings of H1 show that digital literacy skills and student motivation is not supported as the use of ICT and technology does not really encourage IS' motivation. The findings of the study have evidently show that digital literacy skills which consist of technology and cognitive skills do not support IS motivation. The insignificance of digital literacy's influence on student motivation was shown in the results, where the t- values appeared to be low for the relationship (t- 0.575, p = > 0.283). Although ICT is significant and crucial in the development of a knowledge-based society and its integration has been designated as one of the Malaysian education's goals, however, the digital divide has infiltrated the MoE's initiatives to increase digital literacy to all (Luaran et al., 2016). Anderson (2005) as be mentioned by Luaran et al. (2016) defined the 'digital divide' as a separation between those who have convenient access to ICT and those who are lacking it.

Table 2: Hypothesis Testing for Direct Effect

Hypothesis	**Relationship**	**(O)**	**(M)**	**(STDEV)**	**T-Values**	**P-Values**	**Decision**
H 1	Digital Literacy -> Student Motivation	0.056	0.054	0.098	0.575	**0.283**	Not Supported
H 2	Learning Instrument -> Student Motivation	0.297	0.304	0.093	3.196	**0.001**	Supported
H 3	Culture -> Student Motivation	0.161	0.166	0.089	1.807	**0.036**	Supported

Findings of H2 show the relationship between learning instrument and student motivation is supported. The findings of the study have evidently confirmed that learning instruments which consist of educational materials and educational tools do influence student motivation. The significance of learning instrument on student motivation was shown in the results, where the t- values appeared to have strong values on the relationship (t- 3.196, p = < 0.001), making the topic worth to be discussed further. If the educational materials and tools used are suitable for the IS' level, they

find it easy to understand and accept. For example, there are modules released specifically for IS use, i.e. the 'Didik Hibur' module. It is one of the modules used to attract IS' interest in learning, and it is used together with certain other methods such as singing and dancing (Abdullah et al., 2021). It was found that IS are easily attracted to lessons if the educational material used has a musical element in it (Manan, 2022). Besides that, they also like it if their customs are included in the lesson syllabus. For example, in addition to teaching using textbooks, teachers also make use of some other teaching techniques using materials based on the IS' culture (Masnan et al., 2021).

Findings for cultural factors represent the H3 naturally have a strong influence and impact on IP's daily lives. The findings of the study have evidently confirmed that culture which consists of language and cultural background does influence IS' motivation. The significance on IS' motivation was shown in the results where the t-values appeared to show strong values (t- 1.807, p = < 0.036). Based on the study, language is shown as an important factor in learning sessions at school. This is because the correct use of language can provide good understanding to IS (Sawaludin et al., 2022). A study by Letchamanan et al. (2021) stated that the language utilised should be one that they understand and use. This is because teachers and students utilise oral and written language to deliver assignments, participate in learning processes, assess learning, demonstrate knowledge and competence, and encourage classroom life (Bloome et al., 2022). There are also IS schools that use the their native language as a medium of instruction in class to ensure that IS can understand what is being taught by the teacher (Letchaman et al., 2021). Study by Manan (2022) found that an indigenous school that has designated classes to teach dance music and traditional arts of the students' culture has increasd the attendance at the school. This shows that culture is a big pulling factor for IS to come to school because they enjoy the cultural element that have been implement in the school.

6 Conclusions

From the results of this study, it can make recommendations that are suitable for IS based on the three variables that have been measured. In the context of this study, it is widely known that among the critical issue that arise is the IS digital literacy skills which include the components of technology, and cognitive (reading, writing and arithmetic) skills are still at a worrying level. The digital literacy is important to be mastered by all individuals not only IS because it is important to communicate, convey and obtain an accurate information (Rosly & Mokthtar, 2021). Therefore, the main recommendation outlined is to increase the number of literacy specialist teachers to systematically guide IS so that positive results can be obtained quickly. Previous study found that the lack of specialist teachers in the field of literacy specially to teach IS has caused the failure of IS to master literacy skills (Ugek & Badusah, 2018). Other factors such as learning instruments and culture indicated as important element to motive IS to get proper education. It is hope that government incorporate it in the future planning in sustainability education for IS.

Acknowledgments

Much appreciation to the co-authors as well as the parties involved in making the study success such as State Education Department, Indigenous People Affair, School Headmasters and Schools involved. Authors have received Fundamental Research Grant Schemes (FRGS/1/2021) under the Ministry of Higher Education.

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