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Factors Determining the Optimization of Digital Technology in Rural Schools

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Abstract

Digital technology greatly benefits rural areas by providing access to information, education, and communication resources. For example, internet access can connect people in rural areas to online educational resources, job opportunities, and social networks. However, implementing digital technology in rural areas can be challenging due to myriad factors. In exploring the challenges and struggles of technology among students in rural areas, this research explores factors that contributed to the optimization of technology in rural localities. A quantitative descriptive and correlational study was employed on 231 fourth-grade secondary school students at the selected public schools in the eastern part of Malaysia. A set of questionnaires was developed and distributed on-field. Four variables were tested in this research: (a) knowledge, (b) motivation, (c) attitude, and (d) technology readiness. The findings demonstrated that knowledge of using digital technology was the prominent indicator depicting technology readiness among the studied population. Further discussions elaborated in this article promotes the better implementation of digital technology to rural school students which eventually prosper a meaningful learning ecosystem and embark nations' strategic planning on digitization effort.

Keywords: Digital Technology, Quality Education, Education Technology, Rural School

Introduction

Technology is rapidly evolving, with the rise of artificial intelligence, the Internet of Things, and raising awareness of renewable energy sources (Haenlein & Kaplan, 2019). The globe has profited from this advancement by making it easier for people to go about their everyday lives and perform their jobs as well as empowering the SDGs initiative. Every level of society is affected by the advancement of technology in this digital age (Haenlein & Kaplan, 2019). On top of that, numerous sectors, including manufacturing, healthcare services, and education, specifically, are occasionally influenced by research and development and are affected by technological advancement (Balaji et al., 2019). People in the digital age have generally had to deal with continually changing technologies.

Education indeed plays a very important role in producing quality human capital. Sodirjonov (2020) argues that the process of creating quality human capital should start with the government's actions in a country so that good inputs or stimuli are injected into education. Granić (2022) agrees that stimuli such as technological developments which are or will be applied to the country's education system through digitalization will generally lead to better achievements.

Indeed, education is crucial for developing the human capital of the nation. According to Sodirjonov (2020), the process of developing productive human capital should begin with the government's actions to provide a better curriculum or stimulate digitization efforts in the school system. Granić (2022) espoused that the use of technology in the national educational system through digitalization will often result in better outcomes. However, there is still less solace for the education system in the hope that, after all these challenges due to the pandemic, the ministries might develop better strategic planning that would give rural and isolated learners in rural areas where technology is fully optimized.

According to Shatri (2020), another perspective stated that the introduction of new technology into the educational system has the potential to impede students' overall developmental process. Contemplating certain technologies has deteriorated human capacities and capabilities which should be developed in more naturalistic ways such as psychological well being and psychomotor skills. According to Caballes and Panol (2020), technology readiness should be seen as a complex concept to evaluate in light of how it is applied in education. They purported that technology readiness encompasses the mental state, emotional, and physical enthusiasm as well as the intellectual, emotional, and psychomotor domains, respectively. In this situation, Lai and Lee (2020) discovered that a user's enthusiasm and behavior influence how ready they are for technology. They also agreed that motivation such as perceived usefulness, the degree to which a person believes that using a particular system would enhance his or her job performance, will determine an individual's intention to use technology, which will affect its success.

Factors Contribute to Technology Readiness

Technology readiness is strongly influenced by previous studies conducted on the individual intention to use technology. A study conducted by Ajzen (2020) stated that individual experience, process, and behavior based on emotions were identified as an attitudinal variable capable of influencing a person in the use of t technology. Ajzen (2020) also claims the Theory of Planned Behavior (TPB) which was introduced by Fishbein and Ajzen (1975) has identified such factors namely: (a) computer self-efficacy, (b) attitudes towards technology use, and (c) computer anxiety. Similarly, Yuriev et al (2020) have conducted research based on TPB to understand and predict human behavior in education fields of study which are designed to be interventions that target attitudes, subjective norms, and perceived behavioral control to change behavior in the desired way. Therefore, it is important to note that the TPB is not without its limitations, and other factors such as past behavior, demographic characteristic, and social identity can also play a role in shaping a person's behavior. Marcinkowski and Reid (2019) critics argue that TPB heavily relies on self-report measures, such as surveys and questionnaires, which may not accurately reflect a person's true attitude, subjective norms, and perceived behavioral control. In sync with Marcinkowski and Reid (2019); Kanada et al (2022) have found that the TPB has a limited ability to predict

behavior, particularly in complex or dynamic situations. Firmanshah et al (2023) also found that adopting the TPB fails to account for the role of emotions, such as fear or anxiety, which can also influence behavior.

Another case study conducted by Kanada et al (2022) has identified the link between knowledge and technology readiness. Kanada et al (2022) explained knowledge is often required to effectively utilize and integrate technology. El Alfy et al (2019) refer to knowledge as importantly needed to operate and maintain skills adoption of individuals, organizations, or societies as the ability to use technologies effectively. Ay et al (2022) on the other hand, claim that knowledge readiness is simultaneously necessary to perform a task or function involving particular technology or subject to use it effectively. While there is a consensus that knowledge and technology readiness are closely linked, some argue that knowledge may not be directly linked. In contrast, Caputo et al (2019) argue that knowledge is not the dominant concrete major influencer as technology today is designed to be user-friendly and easy to use. This can be seen in the popularity of smartphones and other consumer technology which are often easy to use and require little technical knowledge.

Bayaga et al (2021) also report technology has advanced to the point where it can teach itself and its users, through the built-in tutorial and other resources. This means that individuals may not need prior knowledge to effectively use technology. Hamidi and Kinay (2021) also critique that technology readiness does not require extensive prior knowledge, as people can learn on the job, and they can acquire the knowledge and skills they need as they work with the technology, rather than needing to have it beforehand.

Motivation also has been studied heavily as a key factor driving individualities linked with technology readiness. Eccles and Wigfield (2020) refer to motivation as a driving force or inner desire that prompts a person to take action or engage in certain behavior. Eccles and Wigfield (2020) explained that it can be either internal or external, and can vary in strength and duration. Pak et al (2019) report motivation can derive from goals, values, needs, personal characteristics, and self-efficacy. Werdhiastutie et al (2020) indicate that a strong culture of innovation and learning tends to have employees that are more motivated to adopt new technologies and this will increase their technology readiness.

While some researchers found there is a relationship between technology readiness and students' motivation. On the other hand, some critics have been reported based on recent findings. Henry and Davydenko (2020) explained that individuals are not motivated to use technology, tend to change, lack interest to learn new skills, and may not see the benefits of new technologies. In contrast, Schiller and Dorner (2021) claim that a culture of innovation and learning is more likely to have motivated individuals to adopt new technologies. There are such opportunities to learn and grow, and they recognize and reward individuals for taking initiative and trying new things. In addition, Schiller and Dorner (2021) findings indicate that for individuals, motivation to use technology also comes from the belief in one's ability to use the technology effectively, known as self-efficacy. When individuals believe that they have the skills and knowledge to use technology effectively, they are more likely to be motivated to adopt new technologies. In conclusion, motivation is a critical factor in technology readiness because it drives individuals and organizations to seek out new technologies, invest

the time and effort required to learn and adopt them, and see the benefits of new technologies, which will increase their technology readiness.

Technology Readiness among Students

Other studies conducted for testing and evaluating the students in using technology have been highlighted. In a study conducted by Rafiee et al (2021) in testing students' willingness and acceptance to use technology in the context of e-learning, the findings found that there is a complex relationship between perceived usefulness, perceived ease of use, e-learning motivation, online communication self-efficacy and language learners' acceptance and readiness of e-learning. Rafiee et al (2021) revealed that perceived enjoyment did not influence e-learning acceptance and readiness among language learners through the mediating role of perceived usefulness. Shatri (2020) indicates that students who have access to technology, such as laptops and internet access, are more likely to be technology ready. Razak et al (2018) found that students with high levels of digital literacy have the skills and knowledge to use technology effectively, and are more likely to be technology ready. Satar et al (2020) report Students who have positive attitudes toward technology and see the value of using it in their learning are more likely to be technology ready. Satar et al (2020) also explained that students with high motivation tend to learn and use new technologies and are more likely to be technology ready.

Another study might not be in line with some researchers. There are several criticisms and arguments against technology readiness among students. Mwapwele et al (2019) argue that technology can lead to a lack of critical thinking. Mwapwele et al (2019) also explained that with the availability of information at their fingertips, students may become reliant on technology and may not learn to think critically and independently. Sadeghi et al (2021) stated that technology can create a digital divide as not all students have access to technology, which can create a divide between those who do and those who do not. He indicates that this can lead to a lack of equity in education and opportunities. Sadeghi et al (2021) also claim that with constant student access to technology, students may be easily distracted and may be having a hard time focusing on their studies. Criticisms and arguments against technology readiness among students are common from the perspective of academicians, however, it's important to note that technology can also have many positive effects on education when used thoughtfully and strategically.

Looking at different perspectives, in terms of educational technology, a similar study tested on senior high school readiness in using technology to enhance language learning shows an interesting result. Daflizar and Petraki (2022) stated that the use of technology has become the perfect complement to mastering or gaining control of a language and English courses are supported by the most efficient and attractive technology in the learning process. Daflizar and Petraki (2022) claim that their research has resulted that the highest result of students' readiness in using technology shows that there are 19 of 20 students who can use technology to finish English assignments. This brings us to the conclusion that out of 20 students, 95% of students have the capability and accessibility to use technology. Overall, technology readiness among students can vary from different perspectives.

Conceptual Frameworks

Henceforth, the objective of this study is: (a) to identify the main factors (knowledge, motivation, and attitude) that influence secondary school students to use technology, (b) to determine the level of technology readiness comprising technology access, technology skills and study skills, and (c) to investigate the relationship between selected factors (knowledge, motivation, and attitude) and technology readiness among secondary school students. The study tested four variables to examine the relationship that exists.

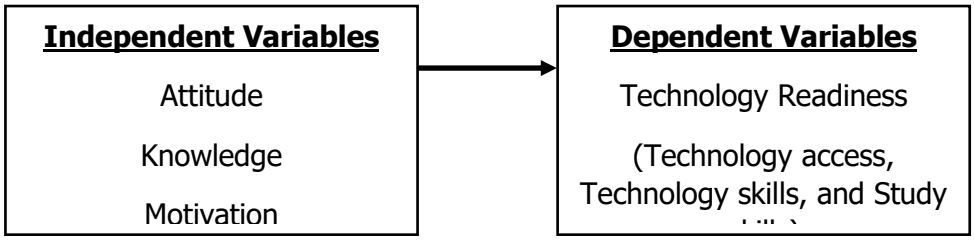

Figure 1. Studied variables

Methodology

Malaysia's detailed issue with basic infrastructure is frequently concentrated in Sabah, the east part of Malaysia, which is located on Borneo island. The issue of basic utilities including water, electricity, roads, and communication networks is frequently the topic of sensational news in Malaysia. Sabah is also ranked as the third poorest country among the 13 other states in Malaysia (Ling & Sheng, 2021). Over 150 national schools classified as rural, under the Malaysian Ministry of Education, are listed in Sabah (Jabatan Pendidikan Negeri Sabah, 2020). This covers several schools in the Kinabatangan district on the east coast of Sabah, including one rural area school and a total of four secondary schools. Therefore, looking at the implementation plan of digital technology in schools in the Malaysian Education Blueprint 2013-2025, perhaps this is a wish that is difficult to achieve.

This study adopted a quantitative correlational study to obtain the respondents' perception and also for generalization of the findings to the population interest. According to Creswell and Creswell (2018), a quantitative method is an approach for testing assumptions and objective theories by testing the correlation between the variables. The respondents for this research were the 4th-grade secondary school students from four schools in Kinabatangan districts. 231 students were involved and randomly selected based on Krejcie and Morgan (1970) sampling method with a total population of 579 from the registered students in the Kinabatangan district of education office database.

The instrumentation of this study was replicated from (Tuntirojanawong, 2013; Turan, 2007). The constructs were adapted from the TRA (Theory of reasoned action), TAM (Technology acceptance model), and TRI (Technology readiness index) model which was specifically designed by Venkatesh et. al (2003) to test the level of individual readiness, especially in the context of technology. The independent variable comprised 15 items on attitudes, knowledge (15 items), and motivation (14 items). These three constructs are adapted from Turan (2007) who uses the same instrument and tests the level of student acceptance of technology. While for the dependent variable, there are three constructs namely technology access, technology skills, and study skills which are combined in the context of technology readiness with a total

of 15 items. The construct was obtained from a previous study conducted by (Tuntirojanawong, 2013). The reliability test has shown that the coefficient value ranked at 0.70 for attitude, knowledge, and motivation respectively. The technology readiness on the other hand reported higher reliability at 0.83. The estimated duration to answer is 20 minutes. The descriptive analysis and Pearson correlation were employed to analyze the data. Pearson Correlation is used to investigate the correlation between the independent variables and the dependent variable. By determining the correlation between each other, the relationship between the variables can be identified whether there is any correlation that exists among studied variables. Permission to collect the data was approved by the Ethics Committee For Research Involving Human Subjects, Universiti Putra Malaysia and the Educational Planning and Research Division unit at the Malaysian Ministry of Education.

Research Findings

Respondent Demographic Findings

The data analysis for demographic profiling and determining the levels of each construct in the variable were carried out using descriptive analysis; frequency, percentage, mean and standard deviation. In defining the respondent's demographic factor, gender, and income status were asked in the survey. Table 1 shows the frequency and percentage values for the respondent demographic in terms of the gender category and family background (income classification). The table also describes that the data for male respondents are 111 people with a percentage of 48.1%. While for female respondents, the frequency for female respondents is 120 with a percentage of 51.9%. The conclusion from the respondent's demographic data for the gender category shows that female respondents are more dominant than male respondents with a frequency difference of 9. While for respondent demographics in terms of family background category (income classification), the highest frequency is the B40 category with a frequency of 218 people and a percentage of 94.4%. Followed by respondents from the second-highest M40 category with a frequency of 11 people and a percentage of 4.8%. The table above also shows that the T20 category is the lowest with a frequency of 2 people with a percentage of 0.9%. In conclusion, respondents from the B40 category are the most dominant among all.

Table 1
Respondent Demography

Demographic Profile		**Frequency**	**Percentage (%)**	**Cumulative Percent (%)**
Gender	Male	111	48.1	48.1
	Female	120	51.9	100.0
Family background (income classification)	B40 (Low Income)	218	94.4	94.4
	M40 (Middle Income)	11	4.8	99.1
	T20 (High Income)	2	0.9	100.0

N= 231

Table 2 shows the students' attitudes toward technology use in digital. As shown, ten among the 14 indicators registered high. These are "I am ready to use technology anytime" (m=4.238), "I am always learning how to use technology in everyday life" (m=3.918), "I am always concerned about the current issues that are happening related to technology" (m=3.701), "I think that technology can help me in my studies" (m= 4.472), "I use technology to find information in all subjects" (m=4.338), "I use technology to communicate with school friends" (m= 4.442), "I use technology to communicate with teachers" (m=4.156), "I always try to take advantage of technology to get notes and other learning materials" (m=4.169), "I always take opportunities in learning through technology" (m=4.074), and "I use technology as entertainment and to fill my free time" (m=4.277). The remaining five indicators obtained moderate levels. These are, "I rarely use technology. (Less than 5 times a week)" (m=2.433), "I am ready to face any challenges in the use of technology" (m=3.550), "I rarely encourage my friends to use technology" (m=2.623), "I spend around 1 hour every day in internet usage" (m=3.325), "I influence friends around to use technology as entertainment" (m=3.061). Thus, the students' attitudes towards technology use in the digital era can be described as high or positive with composite mean indicates (m=3.83). More likely, students are in sync to use technology in the digital era. This may be influenced by the development of technology which also impacts secondary school students.

Table 2
Item analysis for students' attitude towards technology

Item description	Mean	Std. Deviation	Interpretation
I am ready to use technology anytime.	4.238	.7573	**HIGH**
I rarely use technology. (Less than 5 times a week).	2.433	1.0441	**MODERATE**
I am always learning how to use technology in everyday life.	3.918	.8734	**HIGH**
I am always concerned about the current issues that are happening related to technology.	3.701	.9921	**HIGH**
I am ready to face any challenges in the use of technology.	3.550	.9627	**MODERATE**
I rarely encourage my friends to use technology.	2.623	1.0305	**MODERATE**
I think that technology can help me in my studies.	4.472	.6580	**HIGH**
I use technology to find information in all subjects.	4.338	.7450	**HIGH**
I use technology to communicate with school friends.	4.442	.7131	**HIGH**
I use technology to communicate with teachers.	4.156	.7587	**HIGH**
I always try to take advantage of technology to get notes and other learning materials	4.169	.8299	**HIGH**
I always take opportunities in learning through technology.	4.074	.8282	**HIGH**
I spend around 1 hour every day on internet usage.	3.325	1.1622	**MODERATE**
I use technology as entertainment and to fill my free time.	4.277	.7468	**HIGH**
I influence friends around me to use technology as entertainment.	3.061	1.2035	**MODERATE**
TOTAL MEAN	**3.83**		**HIGH**

Table 3 demonstrates students' knowledge of technology. As shown, ten among the 15 indicators ranked high. These are "I have skills in using technology" (m=3.693), "I realize that technology has more advantages than disadvantages" (m=3.939), "I knew that I would be missing out if I didn't use technology" (m=3.887), "I know that many learning materials are available through the use of technology" (m=4.312), "I know that technology can help improve my academic performance" (m=4.000), "I can print a document from computer/laptop/smartphone/tablet device" (m=3.710), "I use a search engine (e.g., Google Chrome) to find information" (m=4.152), "I use social networks (e.g., Facebook, Instagram) to socialize, communicate and entertainment purpose" (m=4.242), "I use my computer/gadget/smartphone/tablet device with confidence" (m=3.987) and "I know that

technology is a necessity in this digital age" (m=4.294). The remaining five indicators obtained moderate levels. These are, "I can navigate the webpages. (Go to the next or previous page)" (m=3.571), "I always face obstacles when using technology because of the limited knowledge of using it" (m=3.121), "I can demonstrate proper use of the computer (clean hands, no food/drinks, press key gently, no magnets, etc.)" (m=3.498), "I can identify parts of a computer system (e:g. monitor keyboard, mouse and/or trackball, printer, headset and/or speakers, CD-ROM drive, disk drive, etc.)" (m=3.481), "I cannot use technology properly and effectively"(m=2.801). Thus, the student's knowledge of technology can be described as high or knowledgeable with a composite mean indicates (m=3.77). More likely, students already have the basic knowledge to use technology in this digital era. This may be influenced by the development of technology which also impacts secondary school students and the awareness campaign conducted by government agencies before. This also indicates that students from rural areas are fully aware of the technology surrounding them.

Table 3
Item analysis for student knowledge of technology

Item	MEAN	STD. DEVIATION	INTERPRETATION
I have skills in using technology.	3.693	.9306	**HIGH**
I can navigate the web pages (Go to the next, or previous page).	3.571	1.0396	**MODERATE**
I always face obstacles when using technology because of my limited knowledge of using it.	3.121	1.1621	**MODERATE**
I realize that technology has more advantages than disadvantages.	3.939	.9021	**HIGH**
I knew that I would be missing out if I didn't use technology.	3.887	.9670	**HIGH**
I can demonstrate the proper use of the computer (clean hands, no food/drinks, press the key gently, no magnets, etc).	3.498	1.1717	**MODERATE**
I can identify parts of a computer system (e:g. monitor keyboard, mouse and/or trackball, printer, headset and/or speakers, CD-ROM drive, disk drive, etc.)	3.481	1.2008	**MODERATE**
I know that many learning materials are available through the use of technology.	4.312	.7447	**HIGH**
I know that technology can help improve my academic performance.	4.000	.8288	**HIGH**
I can print a document from computer/laptop/smartphone/tablet device.	3.710	1.1374	**HIGH**

I use a search engine (e.g., Google Chrome) to find information.	4.152	1.0336	**HIGH**
I use social networks (e.g., Facebook and Instagram) to socialize, communicate, and for entertainment purposes.	4.242	.8404	**HIGH**
I use my computer/gadget/smartphone/tablet device with confidence.	3.987	.9159	**HIGH**
I cannot use technology properly and effectively.	2.801	1.0892	**MODERATE**
I know that technology is a necessity in this digital age.	4.294	.8697	**HIGH**
TOTAL MEAN	**3.77**		**HIGH**

Table 4 describes students' motivation toward technology. As shown in the table, eight among the 15 indicators registered high. These are "I love using technology in this digital era" (m=4.130), "I feel enjoy and having fun when using technology" (m=4.143), "I feel enjoy when hearing and reading news on about technology-related topics" (m=3.684), "I am interested in learning more about technology" (m=3.931), "I feel frustrated when I can't afford my technology (e.g smartphone/laptop)" (m=3.662), "I feel happy if I can use technology effectively anywhere" (m=4.108), "I love using technology because it allows me to connect with other people" (m=4.173), "I feel frustrated if I don't have enough money to get access to technology" (m=3.675), and "I feel more motivated to learn if I use technology" (m=3.913), The remaining five indicators placed at a moderate level. These are "I feel uncomfortable with the use of technology" (m=2.550), "I feel less interested in using technology" (m=2.602), "I got encouragement from teachers to use technology" (m=3.524), "I got encouragement from the school administration to use technology" (m=3.455) and "I feel that the use of technology saves costs" (m=3.584). Thus, the student's motivation towards technology use in the digital era can be described as moderate with a composite mean indicates (m=3.65). More likely, the composite mean are having a slight value difference between the predetermined range. Therefore, there is confidence that the respondents' motivation in terms of technology acceptance is moving forwards toward a high level. This can be supported by looking at eight of the indicators leveled high. This also explains secondary school students in the selected area are more likely has the possibility of using technology with confidence.

Table 4
Item analysis for student's motivation toward technology

Item	MEAN	STD. DEVIATION	INTERPRETATION
I love using technology in this digital age	4.130	.9187	**HIGH**
I feel uncomfortable with the use of technology	2.550	1.1290	**MODERATE**
I feel enjoy and have fun when using technology	4.143	.8190	**HIGH**
I feel less interested in using technology	2.602	1.0578	**MODERATE**
I got encouragement from teachers to use technology	3.524	1.0078	**MODERATE**
I got encouragement from the school administration to use technology	3.455	1.0369	**MODERATE**
I feel that the use of technology saves costs	3.584	1.0175	**MODERATE**
I feel enjoy when hearing and reading news on technology-related topics	3.684	1.0214	**HIGH**
I am interested in learning more about technology	3.931	.9621	**HIGH**
I feel frustrated when I can't afford my technology (e.g smartphone/laptop	3.662	1.1145	**HIGH**
I feel happy if I can use technology effectively anywhere	4.108	.8452	**HIGH**
I love using technology because it allows me to connect with other people	4.173	.9162	**HIGH**
I feel frustrated if I don't have enough money to get access to technology	3.675	1.0928	**HIGH**
I feel more motivated to learn if I use technology	3.913	1.0049	**HIGH**
TOTAL MEAN	**3.65**		**MODERATE**

Table 5 above shows the analysis data for technology readiness comprises technology access, technology skills, and study skills. As shown above, 13 from 14 indicators registered approaching readiness. These are, "I have access to a computer on a daily basis" (m=3.177), "I have access to a laptop/netbook/computer with proper internet connection at home" (m=3.281), "I have an antivirus system protection on my computer" (m=3.242), "I have access to a computer with the necessary software install" (m=3.281), "I have access to a computer

in home with stable electric source" (m=3.333), "I can save/open documents to/from a hard disk or other removable storage device" (m=3.368), "I can send and receive email attachments" (m=3.749), "I can resolve commons errors while surfing the internet such as page not found or connection time out" (m=3.442), "I can use the advanced internet skills, such as using a search engine, identifying and downloading appropriate files, and installing or updating software" (m=3.706), "I can follow a structured approach to find solutions to a problem" (m=3.632), "I can express my thoughts and ideas in writing" (m=3.784), "I can learn new technologies: I do not put it off or avoid it" (m=3.823), and "I am comfortable doing academic work independently and without regular face-to-face interaction with instructor" (m=3.437). The remaining indicator is stated at the ready stage. These are, "I can communicate effectively with other students using online technologies" (m= 4.013, SD .8772). Thus, this result brings us to the understanding that the level of technology readiness registered 'approaching readiness' with the value of the composite mean of 3.51. To be more precise, the respondents have some basic knowledge or skills or even experience using technology, but in detail, they lack in terms of understanding and applying basic knowledge and skills.

Table 5
Item analysis for technology readiness

Item description	MEAN	STD. DEVIATION	INTERPRETATION
I have access to a computer daily.	3.177	1.1642	**Approaching readiness**
I have access to a laptop/netbook/computer with a proper internet connection at home.	3.281	1.1808	**Approaching readiness**
I have antivirus system protection on my computer.	3.242	1.1314	**Approaching readiness**
I have access to a computer with the necessary software installed.	3.281	1.0929	**Approaching readiness**
I have access to a computer at home with a stable electric source.	3.333	1.1597	**Approaching readiness**
I can save/open documents to/from a hard disk or other removable storage devices.	3.368	1.1567	**Approaching readiness**
I can send and receive email attachments.	3.749	1.0414	**Approaching readiness**
I can resolve common errors while surfing the internet such as pages not found or connection time out.	3.442	1.1324	**Approaching readiness**
I can use advanced internet skills, such as using a search engine, identifying and downloading appropriate files, and installing or updating software.	3.706	1.0834	**Approaching readiness**

I can follow a structured approach to finding solutions to a problem.	3.632	1.0462	**Approaching readiness**
I can communicate effectively with other students using online technologies.	4.013	.8772	**Ready**
I can express my thoughts and ideas in writing.	3.784	.9627	**Approaching readiness**
I can learn new technologies: I do not put them off or avoid them.	3.823	.9863	**Approaching readiness**
I am comfortable doing academic work independently and without regular face-to-face interaction with the instructor.	3.437	1.1437	**Approaching readiness**
TOTAL MEAN	**3.51**		**Approaching readiness**

Correlation analysis between selected variables and technology readiness

The analytical procedure was carried out using Pearson Correlation analysis. The results were indicated based on the stated rule (see table 6)

Table 6

Pearson correlation Indicator

Correlation Value range *(r)*	**Interpretation**
.91 to 1.00 or -.91 to 1.00	Very strong
.71 to .90 or -71 to -.90	Strong
.51 to .70 or -.51 to -.70	Moderate
.31 to .50 or -.31 to -.50	Weak
.01 to .30 or -.01 to -.30	Very weak
00	No correlation

Table 7 depicts the relationship that exists among the studied variables. Firstly, the relationship between attitude and technology readiness was analyzed. The correlation results stood at *r*=.442 which indicates a weak relationship between the two variables. The relationship between knowledge and technology readiness on the other hand indicated a strong correlation existed. As seen in the table, the Pearson correlation value is placed at *r*=.709. It is safe to report that there is a significant relationship between students' readiness in terms of knowledge to use technology since the p-value indicates a strong relationship. Thus, students' readiness in terms of knowledge drives secondary school students to use technology. Finally, the relationship between motivation and technology readiness was investigated. Noticeably, the Pearson correlation value stated at *r*=.636 indicates a moderate relationship between the two variables. There is a significant relationship between students' readiness in terms of motivation to use technology since the *p*-value indicates a significant relationship. Thus, students' readiness in terms of motivation influence secondary school students to use technology in the digital era.

Table 7
Correlation analysis between Attitude, Knowledge and Motivation, and Technology Readiness

Variable		Technology Readiness
Attitude	Pearson Correlation	.442**
	Sig. (2-tailed)	.000
	N	231
Knowledge	Pearson Correlation	.709**
	Sig. (2-tailed)	.000
	N	231
Motivation	Pearson Correlation	.636**
	Sig. (2-tailed)	.000
	N	231

Discussion

The degree to which students in rural areas have the skills and resources necessary to use and benefit from technology in their education is referred to as their readiness for technology adoption. Compared to urban locations, rural areas frequently have less access to resources and technology (Fishman, 2015; Townsend et al., 2013). As a result, there may be less opportunity for the student to become familiar with technology and learn the skills necessary to use it effectively (Saavedra & Opfer, 2012). To improve rural student readiness for technology adoption, it is important to focus on providing access to technology and resources. This can include providing high-speed internet, supplying computers or tablets, and offering training and support for students, teachers, and families. Correspondingly, rural students may have lower levels of readiness for technology adoption than their urban counterparts. Contrary to this perception, the research findings report vice versa. Knowledge and motivation of the students are indeed significant towards technology readiness. On top of that, the abovementioned factors were not the hindrance factors; instead students in the studied population prove to possess knowledge disposition, motivated and positive attitudes towards technology in learning.

The term knowledge in this research context refers to a student's comprehension of technology and its prospective applications in the classroom. Students are more likely to be able to use technology effectively for learning if they have a strong understanding of it. With education, training, and exposure to technology, students gain access to knowledge disposition. While students heavily utilize a variety of devices for learning (Naveh & Shelef, 2020), there are possibilities for the optimization of technology for teaching and learning environments. Students in this era proceed with a complacent environment supporting their learning despite being situated in rural conditions. Students favor using the popular, commercially available technologies they currently use in their daily lives which actively motivates them to utilize technology (Pellas et al., 2020). Furthermore, they view technology more as a tool for learning than as a logistical or administrative tool. Debating with such warped minds that technology is not feasible and only tends for entertainment purposes, the

findings reported that technology is a tool that acts as a facilitator for pedagogical change. This condition advocates learning processes.

Students are more likely to be inspired to use technology in their studies when they have a good attitude about it. Through technological experiences, encouraging comments from teachers and peers, and a conviction in the utility of technology for learning, positive attitudes can be fostered. A positive attitude towards technology can boost motivation, curiosity, and readiness to study and use technology for learning, according to research by Rashid et al. (2021). A negative outlook, on the other hand, might result in resistance and reluctance to use technology, which can prevent students from fully utilizing the tools and opportunities it provides.

The willingness of a student to use technology for learning is referred to as motivation. Motivation refers to a student's willingness to use technology in their learning. Motivated students are more likely to seek out and use technology to enhance their learning experience. Motivation can be influenced by a variety of factors, such as interest in the subject matter, the perceived usefulness of technology, and the level of engagement and support provided by teachers and peers. In the case of online gaming, it contributes to a highly motivated environment. Since educators felt that online gaming may produce addiction, having a gamification technique in learning delivery is an amicable way to engage students in learning. According to Karaca et al (2020), rather than online gaming which includes both PC and console games, as well as mobile and social games that can be played on smartphones and tablets—as the main intention because it increases user excitement, online communication is the actual main intention for the user to enjoy technology; which is an excellent technology for learning.

Technology readiness refers to a student's overall preparedness to use technology in their learning. Technologically ready students have the necessary knowledge, attitude, and motivation to use technology effectively. Technology readiness can be improved through targeted education and training, as well as the provision of appropriate technology resources. Satar et al (2020) suggest that it is important for educators to recognize this issue and provide students with opportunities to develop the necessary technical skills to use technology effectively. In contrast, they also mentioned hands-on training, tutorials, and other forms of instruction will allow students to practice and build their skills. Additionally, providing students with access to technology and resources, and encouraging them to explore and experiment with different tools and applications can also help to build their confidence and skills in using technology.

Conclusion

The findings reported that attitudes and knowledge of the students possessed at a high level whereas motivation at moderate. Rural students are partially ready for technology and digitization optimization which trigger dismissive nuance on this particular aspect. It is indeed that the correlation of studied variables depicts significant relationships towards readiness factors. A student's technological readiness can be significantly influenced by their knowledge, attitude, and motivation toward technology. Students can be better prepared to use technology effectively in their learning by cultivating good attitudes, providing chances for learning and motivation, and assuring access to appropriate digital resources. Students'

readiness to use technology in their learning process can depend on a variety of factors, including their prior experience with technology, their level of digital literacy, and their motivation to learn. Students who have had prior experience with technology and have developed digital literacy skills are more likely to be comfortable using technology in their learning. Students who lack these skills may require more time and support to develop them. Motivation to learn is also a key factor in student's readiness to use technology in their learning process. Students who are motivated to learn and see the value in using technology will likely be more willing to engage with it. On the other hand, students who are not motivated may be less likely to use technology in their learning. It is pivotal for educators to assess students' readiness to use technology in their learning process and provide support and training as necessary to help them develop the necessary skills and motivation.

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