Framework for Elementary Students' Readiness and Attitudes towards Blended Learning

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Abstract. In a rapidly evolving educational landscape, blended learning has emerged as a critical modality, effectively integrating the power of traditional classroom education with the flexibility of online learning environments. This research focuses on examining students' readiness and attitudes towards blended learning at Islamic Religious Schools in Johor Bahru, Malaysia. The aim is to find out the varying levels of readiness among students and how this informs their attitudes towards blended learning approaches. Using quantitative methodology, this correlational study involved a sample of 300 upper elementary school students selected from 26 schools through purposive sampling. The instruments for collecting data were adapted from Mercado's framework to suit the context of this research. The findings show that students' readiness and attitudes towards blended learning range from moderately low to high and there is a significant positive correlation in the sub-construct of student readiness. Additionally, the data shows a strong positive relationship between students' readiness for blended learning and their attitudes. This study revealed that all sub-constructs of students' readiness influenced their attitudes toward blended learning. This insight is critical for curriculum design tasked with integrating blended learning strategies into educational systems. They highlight the need for curricula that are responsive to the needs of 21st century learners and that equip students with the skills to effectively navigate the intersection of technology and education.

Keywords: framework, readiness, blended, learning

1   Introduction

Blended learning has emerged as a key strategy in modern education, utilizing traditional face-to-face and online teaching methods to increase student engagement and achievement. This educational approach is critical as we navigate the complexities of the twenty-first century learning landscape, characterized by the pervasive influence of information and communications technology (ICT) in all areas of life, including education. Blended learning, as identified by recent research, combines online digital media with traditional classroom methods, enabling a complementary and synergistic educational environment (Boelens et al., 2018). The consensus among researchers is that this blend not only accommodates diverse learning styles but also fosters interactive and flexible learning experiences (Hrastinski, 2019).

Students' readiness and attitude towards blended learning greatly determines the success of its implementation. Research has shown that a positive attitude towards technology and a readiness to engage with digital and blended learning environments can significantly increase the effectiveness of the learning process (Attaran & Zainuddin, 2018). In addition, the design and integration of these environments play an important role in supporting the learning process, ensuring high levels of engagement, and achieving desired results (Ifenthaler & Schweinbenz, 2016). Thus, the relationship between student readiness, attitudes, and efficacy of blended learning modalities is an important area of focus for educational research and practice.

Despite its potential, the integration of blended learning in certain educational systems, such as Islamic religious schools in Malaysia, presents unique challenges. Although the Malaysian government is actively pursuing the incorporation of ICT into educational reform through initiatives such as Smart Schools, there are marked gaps in technology integration, especially in religious schools (Yusof et al., 2019). This resistance can be caused by limited infrastructure and lack of awareness among stakeholders regarding the benefits of e-learning. Therefore, assessing students' readiness and attitudes in these contexts is critical to facilitating the successful implementation of blended learning approaches and to tailoring interventions that address the specific needs and conditions of these educational environments.

The emergence of digital technology has brought major challenges to education systems around the world, especially in accommodating students' needs and learning styles. In this context, students' readiness and attitude toward blended learning—a pedagogical approach that combines online educational materials and online interaction opportunities with traditional place-based classroom methods—is of critical importance. Research conducted by Al-Adwan and Smedley (2020) underscores the need for students to have advanced academic and technical skills to navigate and succeed in a modern, information-rich society. Additionally, this transition requires students to be adept problem solvers, effective communicators, and flexible team members—competencies that are integral to today's educational and occupational fields.

Vision 2020 underscores the need for educational institutions to not only equip students with critical thinking and problem-solving skills, but also ensure these young students are ready to face the rapidly evolving digital world (UNESCO, 2021). In this regard, students' readiness and attitudes towards the use of technology in learning are very important. Thus, the importance of integrating technology into the curriculum to facilitate blended learning becomes clear. The need to explore aspects of student engagement with blended learning is underscored by the findings of Nguyen et al. (2019), which emphasizes the relevance of student learning. technology readiness and their inclination towards new learning environments.

In addition, the determining factors for the success of implementing blended learning are not only limited to technological infrastructure, but also include students' intrinsic motivation and adaptability. A contemporary study by Johnson, Adams Becker, Estrada, and Freeman (2020) highlights that student characteristics, including readiness and attitudes, are influential in determining the efficacy of blended learning.

Implementing such educational strategies requires a differentiated understanding of students' abilities. their abilities and perceptions of the value and usefulness of blended learning. This requires a comprehensive assessment of students. readiness and attitudes to ensure the transition to blended learning in educational settings, such as Islamic religious schools, is successful and meets the educational goals set for the future.

Recent educational paradigm shifts have increasingly highlighted the role of students in the field of education. readiness and attitudes toward blended learning environments. With the integration of digital tools in education, research finds that students' engagement and performance are significantly influenced by their initial readiness to adapt to the hybrid model (Smith & Hill, 2020). Students' readiness to handle digital materials, participate in virtual discussions, and manage independent online assignments is critical to the success of blended learning programs. Moreover, students' attitudes towards these blended learning environments can be very positive as they find digital content interesting and relevant, thus indicating the need for carefully curated educational materials (Johnson et al., 2021).

Despite the potential benefits of blended learning, many educational institutions still face challenges in ensuring equitable access to technology. In a comprehensive study by Olsen et al. (2018), less than a quarter of schools are equipped with the necessary technological devices, such as computers and tablets, for use by individual students. This gap in access to technology has a direct impact on students' abilities. readiness for blended learning, as consistent exposure to and interaction with digital learning tools is critical to developing proficiency and comfort with online learning platforms.

Environmental and institutional support plays an important role in fostering positive attitudes towards blended learning among students. According to Thompson and Johnston (2019), the introduction of iPads and other learning technologies in the classroom is met with enthusiasm from students, especially when these tools are used to enhance and not replace traditional learning methods. This underscores the importance of a supportive learning environment that not only integrates technology but does so in a way that complements the educational experience. Such an environment can significantly influence a student's readiness to implement blended learning modalities and the overall effectiveness of the educational approach.

Because research in Islamic boarding schools is too limited, researchers conducted preliminary tests to find out problems and issues and support this research. A preliminary study was conducted on four high-ranking officers at the Johor Bahru Regional Religious Education Department and the Johor State Islamic Religion Department (JAINJ), Malaysia. His portfolio of duties is related to the curriculum at the Johor Islamic Religious School. Themes prompted by the interviews were discussed. First, some teachers think that the learning material in the Islamic Education 'book' does not need to be too technological and full of graphics. This is to maintain the concept of 'book' and not be seen as a textbook.

Second, there are still teachers in their old positions and it is difficult to change them. These changes are burdensome, and for them not beneficial. They also compared their conditions with the ulama at the time of the Prophet Muhammad SAW who were still able to achieve without high technology and equipment. Attitudes and perceptions like

this make it difficult to accept change. Third, digital learning has not been implemented well due to a lack of technological resources and facilities that support teachers in implementing it. At the time the interview was conducted, only two schools in Johor Bahru had been provided with digital teaching facilities for Arabic language subjects, but due to lack of enforcement and supervision, digital learning was also not implemented consistently. Teachers also feel less motivated because there is no reinforcement or reward in implementation. Some teachers consider it an additional workload that must be borne compared to other teachers.

Another factor that hinders the implementation of blended learning is the limited learning materials and limited teacher skills in developing digital learning materials. Teachers need a long time to develop learning materials and know several digital applications to produce interesting learning materials. For them, existing assignments and workloads result in limited time for teachers to develop their digital skills.

Preliminary studies also show that some teachers think that not all subjects are suitable for using iPads. One source said that for Arabic language subjects, it was quite difficult and awkward to use this technology. This is different from the Fekah, Sirah and Moral subjects which are considered easier and more suitable for using digital learning. This may also be caused by teachers who are still less creative and ready to implement digital learning. Preliminary studies also show that less than 20 schools are equipped with computers and tablets. Not all schools have computers for students and teachers. They have the same computer. They have at least 1 for all. Small schools may have one or two. JAINJ supplies projectors to every school; one or two is enough for a small school. However, for large schools with thousands of students, this is not enough. We do not have computers in every classroom. Teachers only need to bring a laptop because it is mobile. There are no computer lessons for students. Computer lessons are only conducted in national schools.

There are also efforts from JAINJ to provide learning materials on the iPads provided. The teacher will include learning materials and use them during the teaching and learning process. Students seem to enjoy this digital learning. They are also more interested in coming to school when learning is more interesting. This shows that students' attitudes and readiness can be developed through the learning environment. What is also important is the teacher's attitude. Skills need to be developed first to produce interesting learning because they can influence students' attitudes and readiness in blended learning.

the research theoretical framework developed by researchers based on the Theory of Reasoned Action and the Technology Acceptance Model by including the variables studied. The original TAM model was used because it better fits the context of this research. Figure 1.0 shows how the Theory of Reasoned Action and the Technology Acceptance Model form the basis of this research. The main variable of this research is the teacher. and students' readiness as well as teachers' and students' attitudes. Based on the Theory of Reasoned Action, a person's beliefs and evaluation of something become a stimulus for him to behave. This is an internal stimulus from the individual himself, while Normative Beliefs and Motivation to obey are external factors that

become a stimulus for someone to behave. The stimulus proposed in this research is the teacher. and students' readiness.

The readiness that is formed will develop the technological scheme that will be used. According to the Technology Acceptance Model, individuals will see whether technology is ready to improve the quality of life or make life easier. This study relates to the use of technology in improving the quality of teacher teaching and the quality of student mastery or abilities. This is also related to how the technology used helps facilitate the teaching and learning process without being burdensome, especially on the physical and mental aspects.

If technology can fulfill two needs, namely Perceived Effectiveness and Perceived Ease of Use, it will influence individual attitudes. In this research it refers to the attitudes of teachers and students. This attitude also falls under behavioral intentions based on the Theory of Reasoned Action. Finally, when the stimulus (readiness) finds that the technology used is good and makes life easier, then teachers and students will accept (Actual behavior) and use the technology (Actual System Use).
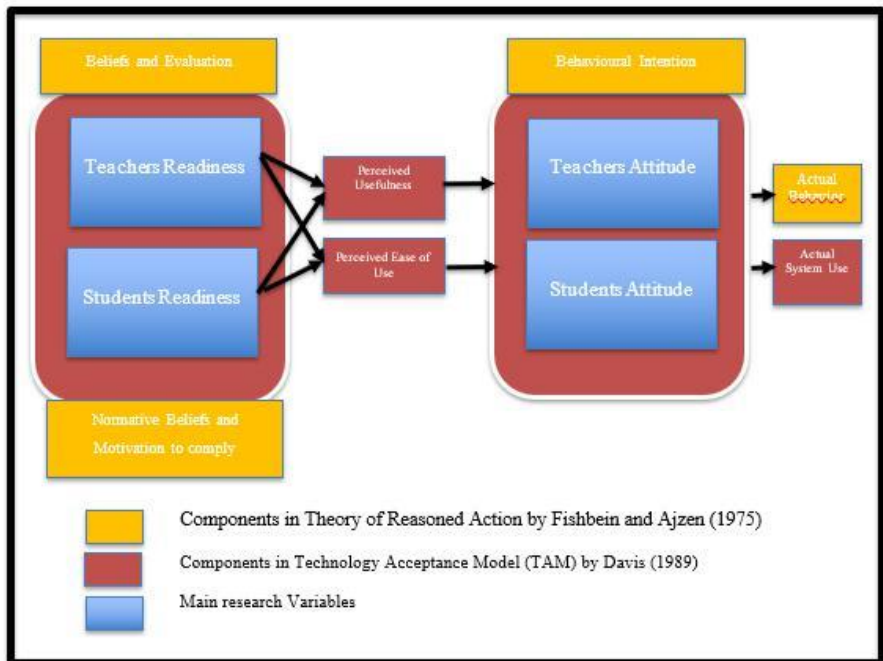

Figure 1.0. Research Theoretical Framework

2   Methods

The main aim of this research is to examine students' readiness and attitudes towards blended learning in Islamic religious schools in the Johor region. This includes student assessment. readiness to engage with blended learning modalities, evaluate their

attitudes toward that educational environment, and explore the relationship between students' technological resources, skills, and prior learning experiences in relation to their readiness for blended learning. In addition, this research aims to understand how the elements of readiness and attitude are interconnected, thereby contributing to the development of a comprehensive framework specifically adapted to the blended learning context for students in these schools.

Integrated learning readiness and attitudes among students in contemporary educational environments are important factors for the success of technologically integrated pedagogical models. This research adopts quantitative research methods in a positivist paradigm, reflecting the belief that the social reality of students' lives; engagement with blended learning can be analyzed and understood quantitatively (Cohen, Manion, & Morrison, 2018). This approach facilitates the examination of causal relationships between variables, in particular, students' intelligence levels. their readiness and attitudes towards blended learning through gathering empirical evidence that can be observed and measured. The positivist paradigm underlying this research underscores the importance of empirical data in validating theoretical constructs and enabling the derivation of generalizable findings about students' knowledge. experiences with blended learning (Creswell & Creswell, 2018; Taylor, Bogdan, & DeVault, 2016).

The population of this study were upper elementary school students from state religious elementary schools. These schools specifically come from the southern Malaysian state of Johor, in the Johor Bahru district. Johor Bahru has 91 state religious primary schools grouped into three categories: 22 schools in Class A clusters, 27 schools in Class B clusters, and 42 schools in Class C clusters. Schools are grouped by number of students; Elementary School has the largest number of students, while Class C has the lowest number of students among the three clusters.

For students, the total population of this study was 28458 from 91 schools. However, 300 students were involved and taken from three schools from each cluster as samples. These three schools were among the 26 schools selected as teacher samples. Researchers have limited the student population to only upper elementary school students because they have a better understanding of language and comprehension skills, which should be easy to communicate. This will ensure a better response when they answer the questionnaire. In addition, they are more reliable and honest respondents than lower primary school students. Students' age, gender, and ethnicity were not considered in this study because they were not considered relevant to the research.

For the sampling technique, there are two stages involved. In the first stage, disproportional stratified sampling is used to select schools based on class groups (strata). These schools were selected randomly from each stratum until the sample size was met. Because this research will use the Rasch Measurement Model to develop its framework, the determination of the minimum sample size refers to Table 1.0

Table 1.0: Determination of minimum sample size

Item Calibrations or person measure stable within	Confidence	Minimum sample size range (best to poor targeting)	Size for most purposes
+- 1Logit	95%	16 ----36	30 (minimum for dichotomous)
+- 1Logit	99%	27 ----61	50 (minimum for polytomous)
+- ½ logit	95%	64 ---- 144	100
+- ½ logit	99%	108 ---- 243	150
Definitive / high stakes	99%+ (items)	250 ---- 20*test length	250
Adverse circumstances	Robust	450 upwards	500

Sources: John Mike Linacre, 1994

From Table 1.0, the minimum sample size for students is 250. This is because the researcher decided to take a calibration item that measures stable for definitive or high bets with a confidence level of 99%. Therefore, the size for most purposes is recommended as 250.

First, disproportional stratified random sampling was used. These schools are grouped according to class type. For student selection, one school is selected from each class. After determining the school, the second stage occurs. Upper elementary school students were selected deliberately to reach a number that exceeds the minimum limitsample size. The criteria for students were deliberately chosen if they were upper elementary school students at one of the Islamic Religious Schools in Johor Bahru. Finally, 26 schools were selected and involved 401 teachers, and 3 schools were selected and involved 300 students.

The survey questionnaire designed for this study, adapted from Mercado's (2008) instrument and modified for elementary school students, aimed to capture a variety of quantitative data regarding their readiness and attitudes toward blended learning. The questionnaire presented in Malay consists of five different sections. The first section collects demographic information such as school, grade, age, and gender. The next section investigates student concerns. access and proficiency with technology, assessing hardware availability, internet connectivity, and digital skills, including basic computer and gadget operations, as well as internet use and software literacy. Finally, the questionnaire evaluates student performance. previous learning experiences and attitudes toward learning, which include study habits, cognitive abilities such as critical thinking and creativity, collaborative and communicative skills, motivation levels, and time management practices. This comprehensive tool was used to gain insights from 300 students across various school groups.

3   Results and Discussion

For student readiness, the three subconstructs studied were Technology Resources, Technology Skills, and Previous Learning Experiences. In Technology Resources, the elements measured are Hardware and Internet Connectivity. Meanwhile, for Technology Skills, the elements studied are Basic Computer and Gadget Skills, Basic Internet Skills, and Software Literacy.

3.1. Technology Resources

The highest aspect of student readiness is TR2, namely "I have/have access to a tablet/smartphone at home", followed by item TR4 "My internet connection has no problems (stable)." Next are items TR5 "I have an internet connection at the internet cafe" and TR3 "I have an internet connection at home." The lowest readiness item compared to other items in this construct is item 1, "I have an internet connection at home." Overall, the probability of student readiness for Technology Resources is 51%, which is quite high.

Furthermore, as stated in Table 2.0, student readiness in Hardware development and Internet Connectivity readiness is 51%. This value is the same as the overall probability value.

Table 2.0 Logit Value and Probability of Student Readiness for Technology Resources

Technology Resources (Hardware)			
No	Item	Logit Value	% chance of Readiness
1	I have/have access to a computer/laptop at home.	.76	33
2	I have/had access to a tablet/smartphone at home.	-.76	69
Quantity (Hardware)		.00	51
Technology Resources (internet connectivity)			
3	I have an internet connection at home.	.19	47
4	My internet connection has no problems (stable).	-.27	58
5	I use the internet connection at the internet cafe	.08	49
Total (internet connectivity)		.00	51
Grand Total (Technology Resources)			51

Studies on students' readiness for blended learning show that access to personal technology such as a tablet or smartphone at home is the most significant factor in their readiness, indicating a relatively high level of availability of technological resources

among students. However, challenges to stable internet connectivity at home are still apparent, although not as great as the availability of internet connections in other locations, such as internet cafes. Interestingly, hardware readiness and internet connectivity yielded a moderate probability of 51%, indicating that although students have a sufficient level of access to technology resources, consistent and reliable internet access remains an important thing to improve to support an effective blended learning environment.

3.2. Technology Skills

The next study is Technology Skills. The research results show that the highest readiness for this item is TS6, namely "I know how to turn on and turn off the computer/laptop correctly". The next highest readiness item was TS18, "I know how to use files such as pdfs, word documents, etc." and TS14, "I know how to use files/smartphones in general." For items whose readiness is lowest compared to other items are TS12 "I know how to use the keyboard on a tablet/smartphone", TS8 "I know how to use a computer/laptop keyboard" and TS9 "I know how to control the volume on a computer/laptop." A detailed analysis of each item by construct is shown in Table 3.0.

Table 3.0 shows the Logit Value and Probability of Student Grades; Technology Skills Readiness for each item. The analysis shows that the probability of readiness for all three constructs is approximately the same. All are at low readiness, with a probability value for Basic Computer and Gadget Skills and Software Application Literacy of 50%, and for Basic Internet Skills builder, the probability is 49%.

Table 3.0 Logit Value and Probability of Students' Technology Skills Readiness

Technology Skills (Basic Computer and Gadget Skills)			
No.	Item	Logit Value	% possibility Readiness
6	I know how to turn on and turn off a computer/laptop well.	-0.5	62
7	I know how to use a computer/laptop mouse.	0.14	47
8	I know how to use a computer/laptop keyboard.	0.28	43
9	I know how to control the volume on a computer/laptop.	0.18	46
10	I know how to use a computer/laptop in general.	-0.11	53
11	I know how to turn my tablet/smartphone on and off properly.	-0.05	51
12	I know how to use the keyboard on a tablet/smartphone.	0.34	42
13	I know how to control the volume on a tablet/smartphone.	-0.07	52
14	I know how to use a tablet/smartphone in general.	-0.19	55
Total (Basic Computer and Gadget Skills)		0.00	50

	Technology Skills (Basic Internet Skills)		
15	I know how to connect to the internet.	0.04	49
16	I know how to open web pages.	-0.04	51
17	I know how to surf the internet.	0.12	47
	Total (Basic Computer and Gadget Skills)	0.04	49
	Technology Skills (Software Application Literacy)		
18	I know how to use files like "pdf", "word document", etc….	-0.31	58
19	I can open more than one tab simultaneously on the computer screen	0, 16	46
	Total (Software Application Literacy)	-0.01	50
	Grand Total (Technology Skills)		50

An investigation of students' technology skills as a component of their readiness for blended learning showed that basic operational skills, such as turning a computer or laptop on and off, were the areas of highest proficiency. Students also demonstrate reasonable familiarity with common file formats and general device usage. However, more specific skills, such as keyboard use across devices and volume control management, are areas where readiness levels are lower. Overall, this research shows that there is an even distribution of technological skills readiness across regions, with a uniform moderate probability of 50% for basic computer and gadget skills and literacy in software applications and slightly lower, namely 49% for basic internet skills. This indicates that students are acquiring the basic technology skills necessary for comprehensive readiness.

3.3. Previous Learning Experience

The final foundation for students is Previous Learning Experiences. Blended learning attachment, there is still a need for further development in certain technical areas to ensure E(v) shows the Item map for students. Readiness in Previous Learning Experiences. Based on the Item map, it should be noted that overall readiness is at a fairly low level with a probability of 50%. The item with the highest readiness was PLE 20, "I use the PowerPoint application to create presentation slides.", followed by PLE22, "I know how to search for videos on YouTube.". The items with the lowest readiness compared to other items are PLE 24, "I learn new things through playing digital games," and PLE 21, "I use the Word application to submit my homework at Frog VLE." Next is a breakdown of the logit values for each item. Because there are only five items involved and there are no subconstructs for the Prior Learning Experience construct, it can be concluded that students' readiness for this construct is quite low. Table 4.0 shows the details mentioned.

Table 4.0. Logit Value and Probability of Student Readiness for Previous Learning

No.	Item	Logit Value	% Probability of Readiness
Previous Learning Experience			
20	I use the Power Point application to create presentation slides	-0.2	74
21	I use the Word application to submit my homework in Frog VLE.	0.09	74
22	I know how to search for videos on YouTube.	-0.09	72
23	I know how to search on Google to find information/images to learn about something	.04	69
24	I learn new things through playing digital games.	.16	75
	Total Previous Learning Experience	0.00	50

Assessment of students' Prior Learning Experience as an element of their readiness for blended learning revealed that although students demonstrated a level of familiarity with the use of presentation software and word processing, as well as utilizing online resources such as YouTube and search engines for learning, overall readiness in these areas was quite low namely 50%. In particular, the use of PowerPoint to create presentations and the ability to search for videos on YouTube were the highest ranked skills, indicating that students are more comfortable with visual and multimedia tools in their learning process. In contrast, the adoption of digital games for learning and submitting homework through virtual learning environments such as Frog VLE was identified as the lowest in terms of readiness, thus indicating a gap that can be addressed to increase the effectiveness of blended learning strategies. These findings underscore the need for more targeted development in specific areas of technology application to enrich students' knowledge. learning experiences and readiness for a blended educational approach.

3.4. Student Attitude

Details of each item for Students & # 39; The attitude level and according to the construct are as shown in Table 5.0. Based on Table 5.0, it can be seen that the highest construct compared to other constructs is Time Management (51%) with a fairly high category. However, this value is also close to the cut score with a fairly low value. Next is Ability with a fairly low 50% probability. Likewise, the two lowest constructs with quite low scores are Motivation (49%) and Study Habits (48%). The Overall Student Attitude Score is also quite low, namely 49%.

Table 5.0. Logit Value and Probability of Student Attitudes

No.	Item	Logit Value	% Probability of Readiness
Student Attitude (Study Habits)			
25	I like studying with a friend.	0.03	49
26	I started my homework without any reminder.	0.11	47
27	I learn effectively by using a computer.	0.08	47
Total (Study Habits)		0.07	48
Student Attitudes (Abilities).			
28	I can study effectively with my friends.	0.05	48
29	I can discover new ideas to learn and understand better.	-0.07	51
30	I can solve questions by myself without asking my teacher.	0	49
31	I can communicate with my teacher to understand the lesson better	-0.06	51
32	I can communicate with friends when studying together.	0.04	48
Amount (Ability)		-0.01	50
Student Attitude (Motivation)			
33	I enjoy using the internet to learn.	0.27	43
34	I turned in my Frog VLE assignment on time.	-0.12	52
35	I pay more attention in class when my teacher uses video.	-0.07	51
Amount (Motivation)		0.03	49
Student Attitude (Time Management)			
36	I do my online homework on time.	0.04	48
37	I don't lose focus when using the internet while studying/studying.	-0.11	52
38	I completed the activities/exercises in Frog VLE within the given time.	-0.2	54
Total (Time Management)		-0.09	51
Overall Probability of Student Attitudes			49

Students' collective dispositions toward blended learning, as reflected in attitudes regarding study habits, abilities, motivation, and time management, demonstrate a diverse readiness landscape. With the highest readiness scores associated with time management, although slightly exceeding the moderate threshold, students demonstrated basic proficiency in managing their learning time in a digital environment. However, this proficiency was offset by low motivation and study habits scores, indicating a potential disconnect between the structural ability to manage time and the intrinsic drive to maximize this ability in educational endeavors. Specifically, low skill readiness indicates that although students are ready to collaborate and search for information independently, these skills are not optimally developed for the demands

of blended learning. The overall percentage of attitudinal readiness was moderate to low (49%) indicating that despite having some basic skills, there is an important need for interventions that increase students' intrinsic motivation, refine their learning strategies, and provide support to more effectively utilize their abilities in learning. independently within a technology-mediated educational framework.

3.5. Correlation

Table 6.0 shows the correlation results between student readiness and student attitudes. Based on Table 6.0, it can be stated that there is a high significant positive relationship ($r = 0.81$, $p<.05$) between Student Readiness for Blended Learning and Student Attitudes.

Table 6.0. The Relationship between Student Readiness and Student Attitudes

Variable	Student Readiness	Student Attitude
Student Readiness		= 0.81** sign = 0.00
Student Attitude	r = 0.81** sign = 0.00	

The findings summarized in Table 6.0 underscore the strong and significant positive correlation ($r = 0.81$, $p < 0.05$) between student and student behavior. readiness for blended learning and their attitudes towards it. This high level of correlation implies that as students; Their readiness to engage in a blended learning environment increased, and there was a strong, positive change in their attitudes toward this educational approach. This suggests that the more prepared students feel with the necessary technology skills, previous learning experiences, and access to technology resources, the more positive their attitudes toward learning in a blended format. This may reflect mutual reinforcement where positive experiences and confidence in using blended learning tools improve attitudes, which in turn, may further increase engagement and readiness. Given the statistical significance of this relationship, educational strategies aim to improve students' abilities; their readiness will likely result in improvements in their overall attitudes toward blended learning, potentially fostering a more effective and receptive learning environment.

3.6. Framework

The three factors in the readiness component have an influence on student attitudes. The largest factor was Technology Skills ($\beta=0.47$, $p<0.05$), followed by Previous Experiential Learning ($\beta=0.30$, $p<0.05$) and Technology Resources ($\beta=0.25$, $p<0.05$). Meanwhile, for the Student Attitude factor, all factors influence their readiness. The biggest factors are Study Habits ($\beta=0.32$, $p<0.05$) and Motivation ($\beta=0.32$, $p<0.05$), Ability ($\beta=0.22$, $p<0.05$) and the last one is Time Management ($\beta=0.12$, $p< ; 0.05$).
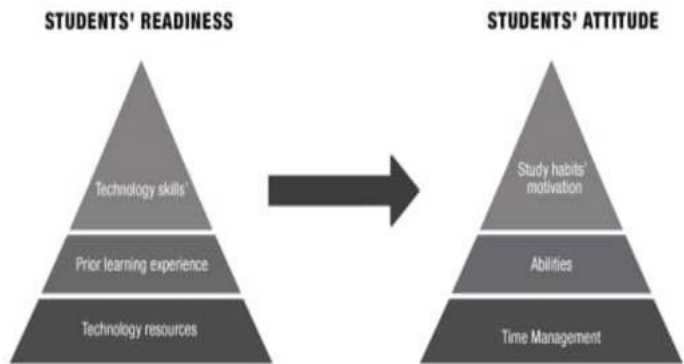
Figure 2.0. Framework for Student Readiness and Attitudes in Blended Learning.
**The top level shows the highest and most important influences and components.

The analysis described here presents a nuanced understanding of the factors that contribute to students' attitudes toward blended learning. The impact of students' readiness is defined by three main components: Technology Skills, Prior Experiential Learning, and Technology Resources. Technology Skills emerged as the most influential factor ($\beta=0.47$, $p<0.05$), indicating that proficiency in utilizing technology tools is critical to fostering a positive learning disposition. This is followed by the weight of Prior Learning Experience ($\beta=0.30$, $p<0.05$), which indicates that previous encounters with the learning environment influence current attitudes and readiness. Technological Resources ($\beta=0.25$, $p<0.05$) also played an important role, highlighting the importance of access to digital tools and platforms necessary for learning.

On the other hand, students' attitudes also show a reciprocal influence on their readiness for blended learning. Study Habits and Motivation were identified as equally strong predictors ($\beta=0.32$, $p<0.05$ for both), indicating that intrinsic learner characteristics such as discipline in study routines and drive to learn greatly influence their readiness for a blended learning environment. Ability ($\beta=0.22$, $p<0.05$) and Time Management ($\beta=0.12$, $p<0.05$) also contributed, although to a lesser extent, revealing that the ability to study effectively and manage time efficiently is an integral part of students' abilities. Ability to adapt to blended learning environments.

The outlined framework, depicted in Figure 2.0, illustrates the interrelationship of these variables, providing a layered perspective on how readiness and attitude reinforce each other in a blended learning context. These findings suggest that interventions aimed at improving these factors can synergistically improve students' abilities. attitude and readiness, ultimately leading to a more effective blended learning experience.

4   Conclusion

A comprehensive analysis of students' readiness and attitudes toward blended learning offers insightful conclusions. First, although students demonstrated moderate to high levels of readiness in accessing technology resources, with significant readiness in using tablets/smartphones and stable internet connections, their overall technology proficiency—including basic computer, internet skills, and software literacy—was only is at a fairly good level of readiness. sufficiency threshold at a probability level of 50%. This shows that even though students have the necessary hardware and connectivity, there is a critical need to improve their practical skills to be able to utilize these devices effectively in learning. A moderate level of prior learning experience, with the highest readiness in utilizing applications such as PowerPoint and searching for educational content on platforms such as YouTube, suggests a foundation that can be built upon to better support student engagement with the digital learning environment.

Second, this research reveals critical linkages between students and pupils. readiness for blended learning and their attitudes, with a strong positive correlation indicating that improvement in one is likely to lead to improvement in the other. However, attitudes towards blended learning overall remain quite low, and certain areas such as motivation and study habits require attention to increase student engagement and effectiveness in blended learning environments. Findings from the correlation and framework analysis show that although technology skills are the biggest factor influencing student abilities, technology skills are the most important factor in influencing student performance. attitudes, motivational aspects and study habits have the same weight in influencing student performance. readiness. Therefore, to foster a more conducive blended learning environment, efforts must be concentrated not only on improving technical competence but also on cultivating intrinsic motivation and independent learning behavior among students.

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