

# The Relationship between Self-Regulated Learning, Mindset, and 21st Century Skills in Blended Learning in Tahfiz Model Ulul Albab Curriculum

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## Abstract

The integration of technology into blended learning has demonstrated remarkable effectiveness as an example of the 21st century learning success. Therefore, it is crucial to prioritize and implement a blended learning approach in the Tahfiz Model Ulul Albab (TMUA) curriculum to generate professional Muslims in various professions who are capable of contributing to holistic individual development. The objective of this study is to assess the relationship between self-regulated learning, mindset, and 21st century skills with blended learning in the TMUA curriculum. A total of 200 students from the Northern Region of Malaysia who are enrolled in the TMUA curriculum at Sekolah Menengah Kebangsaan Agama (SMKA) or National Islamic Secondary School, participated in this study. The relationship between self-regulated learning, mindset, and 21st century skills in blended learning is determined by Pearson correlation analysis using IBM Statistical Package for Social Sciences (SPSS) version 29.0. The findings of the study indicate a strong and significant correlation between 21st century skills and blended learning in the TMUA curriculum among SMKA students. The objective of 21st century learning, which is blended learning in the TMUA curriculum, may be achieved with the support of the school community. It is possible that this will ensure the students' continued success in the future.

**Keywords:** Blended Learning, 21st Century Learning, Self-Regulated Learning, Mindset, 21st Century Skills, Tmua Curriculum, Integrated Curriculum Tahfiz.

## Introduction

The interaction between humans, machines, and other sources of energy has resulted in the impact of information and communication technology on several sectors, including education (Arifin, 2022). The advancement of technology is crucial, particularly in the field of education, for a country to compete with other developed nations in producing educators

who can contribute to the country's education and economy (Haleem et al., 2022; Aziz & Sieng, 2019). Therefore, the integration of technology in teaching and learning is necessary to engage students in learning sessions (Hashim, 2018). Furthermore, the Malaysia Education Blueprint (Preschool to Post-Secondary Education) 2013-2025 highlights the necessity of integrating technology into the school curriculum. Technology may enhance teaching and learning by enabling access to a wide range of educational resources and providing opportunities for interactive learning. Therefore, the integration of technology into the school curriculum is crucial in preparing students with relevant skills for the future.

In Malaysia, there are six curricula [Curriculum Development Division (BPK), 2021] under the Ministry of Education Malaysia (MOE), and one of them is the Integrated Curriculum Tahfiz (KBT) introduced in 2014. There are 32 schools (MOE, 2018) around Malaysia that implement KBT under MOE, and 15 of them are TMUA schools. In order to distinguish KBT from the TMUA program, the term TMUA curriculum (Kenit, 2022; Kenit & Hambali, 2022; Isa et al., 2021; Saad et al., 2021; Haron et al., 2019; Ambo & Mokhssein, 2019; Arshad, 2015; Othman & Mokhshein, 2016) is used. The TMUA curriculum combines the national curriculum, known as the Integrated Curriculum Tahfiz (KPM, 2016), which consists of core, compulsory, and elective subjects (BPK, 2021), with the Ulul Albab model, which includes Quranic, Encyclopedic, and Ijtihadik (QEI) components (Arshad, 2017). Due to the prevailing tendency among educational curriculum designers worldwide, there is a movement towards integrating technology into learning (Twining et al., 2020; Dudar et al., 2021; Brown, Englehardt & Mathers, 2016). Furthermore, the integration of technology is also aligned with all curricula in schools throughout Malaysia, including the TMUA curriculum.

The integration of modern technology in teaching and learning is an effort to attract students' interest in the TMUA curriculum (Haron et al., 2019). The student-centered learning and integration of technology in teaching and learning is an initiative of the Ministry of Education towards 21st century education. Blended learning is a 21st century learning and student-centered approach to education (Hill, 2022; Centers, 2018). Blended learning is an increasingly widespread approach of teaching and learning worldwide (Tong et al., 2022; Rasheed et al., 2020; King et al., 2019; Hrastinski, 2019). Furthermore, the increased interest of students in blended learning methods has a positive impact on their learning (Sankar et al., 2022; Alajmi, 2022; Ahmad, 2018). Therefore, the integration of technology in the TMUA curriculum can assist students in achieving their learning objectives.

The blended learning approach has been approved and recognized as one of the instructional methods in the education system (Seong et al., 2023; Yang et al., 2021; Wayne, 2012). This is because a technologically rich learning environment provides students with opportunities and abilities to self-regulated their learning (Kamal, 2022; Fahnoe & Mishra, 2013). Furthermore, self-regulated learning, implementation, and supportive structures cater to the learning needs of students (Xu et al., 2023). Therefore, the use of self-regulated learning methods by students can enhance academic outcomes through blended learning (Turan et al., 2022; Zimmerman, 2008).

Furthermore, blended learning is employed as a teaching approach to support the development of students' mindset (Peter, 2018). Furthermore, according to Cahill et al. (2018), a student's mindset can predict their learning across various topics, courses, teaching methods, and assessments. This is because the creative and flexible process of teaching and learning can enhance students' interest in learning for the development of students' mindset for information processing (Nordin et al., 2021). Therefore, blended learning can have a

positive impact on students' mindset and foster students' interest in the learning process (Denker et al., 2022).

The 21st century skills identified by the MOE (2014) as relevant to the Malaysian context are (1) Learning and innovation skills; (2) Information, media, and technology skills; and (3) Life and career skills. It is well recognized that 21st century skills are in high demand in the worldwide employment landscape (Schleicher, 2020; Wats & Wats, 2009; Pukelis & Pileicikiene, 2010). Therefore, it is crucial for a student to acquire skills while still in school in preparation for entering the workforce (Dishon & Gilead, 2020; Hodges, 2020). The use of blended learning in schools can enhance students' 21st century skills (Hadiyanto, 2019). Therefore, blended learning may enhance students' skills and is not just focused on academics.

Tahfiz education is becoming increasingly prevalent nowadays, and currently there are 15 MOE schools offering the TMUA curriculum (MOE, 2023). There are 12,689 students enrolled in schools that implement the TMUA curriculum, and there are 1,097 teachers (Salleh, 2021). MOE aims to produce 125,000 professional huffaz in Malaysia by 2050 (Ahmad, 2021; Zanariah, 2018). Therefore, the TMUA curriculum requires more than one learning method, and blended learning is the appropriate method for students to achieve the goals set by MOE.

### **Objective**

The objective of this study is to assess the relationship between self-regulated learning, mindset, and 21st century skills in blended learning within the curriculum of the TMUA.

### **Literature Review**

Since 2014, MOE has taken proactive measures to establish integrated education by combining academic elements with tahfiz education at the secondary school level. One of the initiatives is the establishment of the Ulul Albab Model Tahfiz Program (TMUA). The TMUA curriculum is a Malaysian education system that has been characterized as a new phenomenon (Hayati et al., 2015) and aims to produce committed Muslim professionals and knowledgeable scholars who uphold the principles of the Quran by implementing the national curriculum (Ahmad & Adam, 2018). It aims to shape individuals with social ethics and noble character through educational components (Dzulkifli & Suhid, 2018), and to produce individuals consisting of professionals, technocrats, and leaders who are Mutadayyin or those who have careers in various fields with a strong religious foundation (Habibah, 2018), thereby enhancing the effectiveness of Islamic education in the national education system to meet the significant need for high-quality human capital in the industry (Haron et al., 2019). The TMUA curriculum is a combination of national curriculum, including Higher Order Thinking Skills (HOTS), consisting of core, compulsory, elective subjects, and tahfiz subjects, namely Maharat Al-Quran and Hifz Al-Quran, as well as the Ulul Albab model, which includes QEI approaches (KPM 2016; Arshad 2017; Othman & Mokshein, 2016).

The QEI element is a key component in the TMUA curriculum (MOE, 2015), and all of these characteristics are in line with and align with the goals set by Malaysia Education Blueprint (Preschool to Post-Secondary Education) 2013-2025. The TMUA curriculum aims to produce individuals who are professionals, technocrats, and leaders who are Mutadayyin or those who have strong religious beliefs and pursue careers in many fields (Habibah, 2018). This is because the technology that can produce results requires technology resources that are obtained reasonably or judiciously, free from oppression or colonization, and free from

neglect or disobedience, and can enhance faith, which is the highest achievement of Ulil Albab (Radzi & Bakar, 1996). Furthermore, the integration of technology in the TMUA curriculum's teaching and learning process can have a positive impact on students (Isa et al., 2021; Mohd Saad, 2021; Haron et.al., 2020).

The utilization of technology in Islamic education can generate human capital (Jima'ain, 2020; Buang & Chew, 2014; Ahmad & Tamuri, 2010) that can meet the economic demands of a country (OECD, 2022; Islam et.al., 2016; Kim et al., 2008). The integration of technology in the TMUA curriculum's teaching and learning process can have a positive impact on students (Isa et al., 2021; Saad et.al., 2021; Haron et. al., 2020). Therefore, technology-based learning leads to the emergence of blended learning. The integration of technology in both conventional and online learning within the TMUA curriculum may effectively provide educational content to students, therefore significantly impacting the education sector of the country.

Blended learning refers to a hybrid kind of learning that combines face-to-face and online methods (Hrastinski, 2019; Staker & Horn, 2012; Garrison & Kanuka, 2004; Driscoll, 2002). Blended learning is one of the teaching programs and 21st century learning (MOE, 2016) under the strategy 2.1 Teacher Teaching Improvement Action Plan, which integrates Information and Communication Technology (ICT) in teaching and learning. ICT is an important medium for supporting teaching and learning (Syed Abdullah, 2022; Mohd Yusoff & Husain, 2021; Alobaid, 2021; Wong et al., 2017; Deore, 2012). The selection of technology in teaching and learning by teachers can achieve the goals of teaching and improve classroom management (Yu et al., 2022; Zhang & Aslan, 2021; Mcculloch, 2018). This is because the blended learning approach focuses on integrating technological tools into the teaching and learning process (Sedi, 2023; Ealangov & Jamaludin, 2022; Salleh & Manaf, 2017; Isman et al., 2014; Maarop & Embi, 2016).

Empirical evidence has shown the effectiveness of student-centered and technology-integrated blended learning in allowing teachers to diversify their teaching methods (Islam et al., 2022; Said et al., 2020; Huang, 2019). This is because a learning environment equipped with technology provides space and opportunities for students to enhance their self-regulated learning abilities (Cheung et al., 2021; Fahnoe & Mishra, 2013). In addition, integrating technology into education, such as blended learning, is an appropriate method for the intellectual and cognitive development of Generation Z in their learning process (Sharif et al., 2021; Szymkowiak et al., 2021; Luttrell & McGrath, 2021). In addition, the integrated learning implemented in religious-based schools, such as the TMUA curriculum, might enhance students' interest in the teaching and learning process, hence improving their academic performance (Manan & Hanafi, 2020). Furthermore, blended learning has the potential to replace conventional learning and fulfill 21st century skills (Sudirta et al., 2022; Hadiyanto et al., 2021; Fatkhulloh & Haryanto, 2020). Therefore, it is undeniable that the integrated learning implemented in the TMUA curriculum is capable of engaging students in teaching and learning process, thus strengthening the self-regulated learning, mindset, and 21st century skills of the students.

## **Research Methodology**

### **Study Location**

There are 15 states in Malaysia that have schools implementing the TMUA curriculum, namely 11 SMKA in 11 states and territories (Kedah, Perak, Pulau Pinang, Perlis, Negeri Sembilan, Johor, Wilayah Persekutuan Putrajaya, Wilayah Persekutuan Kuala Lumpur,

Kelantan, Sabah, and Sarawak), 3 Sekolah Berasrama Penuh (SBP) or fully residential school in 3 states (Melaka, Selangor, and Terengganu), and a Sekolah Menengah Agama (SMA) or Islamic school (secondary) in the state of Pahang (MOE, 2021). SMKA was selected for the study based on the highest student population. 11 schools in 11 states are then divided into 5 regions, namely the Northern Region (Kedah, Perak, Pulau Pinang & Perlis), East Region (Kelantan), Southern Region (Negeri Sembilan & Johor), Central Region (Wilayah Persekutuan Putrajaya & Wilayah Persekutuan Kuala Lumpur), and East Malaysia (Sabah & Sarawak). The Northern Region has a high student population rate, with a total of 2,561 students, followed by the Southern Region with 1,423 students, while the Central Region has 1,341 students, and followed by the East Region and East Malaysia. (MOE, 2023). The population for this study consists of 200 form 4 students who are enrolled in the TMUA curriculum in four states, namely Perak, Kedah, Pulau Pinang, and Perlis, in the northern zone.

### **Research Design**

The research design utilizes the correlation method to determine the relationship between the independent and dependent variables. The questionnaire is used to examine the relationship between self-regulated, mindset, and 21st century skills in blended learning within the TMUA curriculum.

### **Research Instrument**

There are three independent variables, namely self-regulated learning, which is measured using the instrument The Online Self-regulated Learning Questionnaire (OSLQ; Barnard et al., 2009). Furthermore, the Growth vs. Fixed Mindset (Dweck, 2006) is used to assess students' mindset. Meanwhile, the 21st century skills of students are assessed using Student Attitudes toward Science, Technology, Engineering, and Math (Unfried et al., 2015) survey and their interest in occupations. Meanwhile, the measurement of dependent variables relies on the survey study titled "Factors of Learning towards Creating Blended Learning Curriculum Using Learning Management System in Higher Education during Covid-19" by Razali et al. (2022). A total of 68 items were utilized in this study, involving four instruments within the dependent and independent variables. The Likert scale, consisting of five points ranging from 1 (strongly disagree) to 5 (strongly agree), is utilized to measure the relationship between blended learning and student self-regulated learning, mindset, and 21st century skills in the TMUA curriculum.

Table 1

*Correlation between the independent variable and the dependent variable (N=200)*

<b>Correlations</b>		Self-Regulated Learning	Mindset	21st Century Skills	Blended Learning
<b>Self-Regulated Learning</b>	Pearson Correlation	1	.538**	.638**	.668**
	Sig. (2-tailed)		<.001	<.001	<.001
	N	200	200	200	200
<b>Mindset</b>	Pearson Correlation	.538**	1	.506**	.579**
	Sig. (2-tailed)	<.001		<.001	<.001
	N	200	200	200	200
<b>21st century skills</b>	Pearson Correlation	.638**	.506**	1	.725**
	Sig. (2-tailed)	<.001	<.001		<.001
	N	200	200	200	200
<b>Blended Learning</b>	Pearson Correlation	.668**	.579**	.725**	1
	Sig. (2-tailed)	<.001	<.001	<.001	
	N	200	200	200	200

**\*\* . Correlation is significant at the 0.01 level (2-tailed).**

The correlation analysis results indicate a relationship between the independent variables (self-regulated learning, mindset, and 21st century skills) and the dependent variable, which is blended learning. Table 1 demonstrates a high positive correlation between the independent variable and the dependent variable, with a p-value of <0.001.

## Discussion

Relationships encompass the self-regulated learning, mindset, and 21st century skills for blended learning in the 21st century learning. Blended learning, as described by Hill (2022) and Centers (2018), is an instructional approach that combines online and in-person learning activities and places the student at the center of the learning process. The blended learning method can enhance students' self-regulated learning toward achieving goals (Muhammad & Mydin Kutty, 2021). The conclusions of this study are corroborated by prior research, which suggests a relationship between self-regulated learning. According to Setyaningrum (2019) and Zimmerman (2008), it is stated that student self-regulated learning is crucial in blended learning because a significant amount of research on learning and achievement clearly demonstrates the importance of self-regulated learning in any learning context, whether online, blended, or face-to-face. Meanwhile, the relationship between mindset and blended learning is significant. This is because blended learning is an instructional method that

enhances students' mindset in the process of teaching and learning (Adarkwah & Huang, 2023; Mariano-Dolesh et al., 2022; Quinn & Aarão, 2020). A recent study has indicated that blended learning, as a teaching approach, can support the formation of students' mindset (Ibrahim et al., 2021; Peter, 2018).

Table 2

*Summary of the correlation strengths between the independent and dependent variables.*

Construct	R <sup>2</sup>	p-value
Blended Learning → Self-Regulated Learning	0.668	<.001
Blended Learning → Mindset	0.579	<.001
Blended Learning → 21 <sup>st</sup> century skills	0.725	<.001

Additionally, Table 2 presents a summary of the correlation strengths between the independent and dependent variables. The analysis of the relationship between 21<sup>st</sup> century skills and blended learning demonstrates a strong positive correlation compared to other independent variables ( $R^2=.725$ ,  $p<0.001$ ). In line with a recent study indicating that blended learning implemented in schools could boost students' 21<sup>st</sup> century skills (Hadiyanto, 2019). The 21<sup>st</sup> century skills are crucial in curriculum development and co-curricular approaches (Ahmad et al., 2019; Raja Ismail & Ismail, 2018; Ain & Wan Mohamed, 2017). The three of the 21<sup>st</sup> century skills defined by MOE as applicable to the Malaysian context are: (1) Learning and innovation skills; (2) Information, media, and technology skills; and (3) Life and career skills (MOE, 2014). The 21<sup>st</sup> century skills encompass collaboration (leadership), critical thinking, problem-solving, and communication skills (Unfried et al., 2015). The findings of this study are also consistent with the objectives of the Blended Learning Module (MOE, 2022). Therefore, there is a significant relationship between the independent variable and the dependent variable.

## Conclusion

Data analysis indicates a significant correlation between blended learning and self-regulated learning, mindset, and 21<sup>st</sup> century skills. The initial execution of blended learning at the school level, particularly in the TMUA curriculum, can have a positive impact on students' self-regulated learning, mindset, and 21<sup>st</sup> century skills. The skills and knowledge acquired via well-structured teaching and learning process may prepare students for global competition. Therefore, it is crucial for the school community to ensure that students in the TMUA curriculum are exposed to integrated learning. By integrating blended learning into the TMUA curriculum, students can develop a sense of autonomy and take ownership of their learning. This approach encourages them to become self-directed learners who can set goals, manage their time effectively, and seek out resources independently. Moreover, the mindset embedded in blended learning fosters a growth mindset, where students believe in their ability to learn and grow. This mindset is essential for developing 21<sup>st</sup> century skills such as critical thinking, problem-solving, collaboration, and adaptability, which are highly valued in today's globalized world. Therefore, it is imperative for schools to prioritize integrated learning in the TMUA curriculum to equip students with the necessary skills and mindset for success in the future.

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