

Writing Literacy Motivation and Habits and Their Relations With Learning Technology Among Students in Rural Indonesian Schools

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Abstract—Technology learning has become an integral part of contemporary education and has a significant impact on students' writing literacy motivation. This study aims to review the level of motivation for writing literacy in Public Junior High Schools (SMPN) in rural areas of Indonesia. In addition, this study aims to review the relationship between learning technology and students' writing habits. This study uses a quantitative approach with an online survey data collection technique using the Qualtrics system. The analysis technique used in this study is the Structural Equation Model-Partial Least Square (SEM-PLS). The test results showed that learning technology had a significant influence on writing literacy with a path coefficient of 0.798. This shows that mastery of learning technology provides a positive boost to students' motivation to write. Learning technology on habits and behavior also has a significant direction with a path coefficient of 0.798. The use of technology has increased students' motivation for writing literacy because of the easy access to the necessary resources. Learners feel more motivated to explore new topics and ideas and offer opportunities to express themselves through writing. For further development, several recommendations were put forward to deepen understanding and improve the quality of students' digital literacy. The government can design a digital literacy curriculum that focuses on developing a student writing practice platform. In addition, there needs to be an equal distribution of adequate access to technology and digital learning tools to reach all regions, including rural areas, so that there is no gap in writing literacy and digital literacy skills.

Index Terms—habit and behavior, learning technology, rural school, students, writing literacy

I. INTRODUCTION

In an era filled with technological advancements, the approach to education has undergone a significant transformation. One of the main changes that has had a big impact is the use of technology as one of the learning series in strengthening reading literacy and increasing reading motivation among students (Hall & Lundin, 2024, p. 1). Sampling in this study used a cross-sectional design method. In this context, the influence of learning technology on reading literacy and reading motivation is the focus of attention for education practitioners, researchers, and other education stakeholders (Huntington et al., 2023, p. 1). This paradigm shift is reflected in efforts made to understand how technology can be used effectively to stimulate reading interest and improve students' reading skills at different levels of education (Schwartz et al., 2023, p. 1).

However, along with the rapid growth of technology, questions arise about the extent of the influence of learning technology on students' literacy and learning motivation (Cárdenas-Sainz et al., 2023, p. 1). Several studies show that the use of technology can increase students' interest in reading through interactive multimedia content (Wijayanti, 2020). However, there are concerns, such as the use of digital use that can obscure students' focus (Bergdahl et al., 2020, p. 1). As is the case Gallardo-Echenique et al. (2016) explained the condition of rapid technological growth distracts students. Students' reading habits decline along with technological advances (Giannini & Bowen, 2019). This is because students are more interested in using technology for interaction and communication activities with their peers than in things related to academics (Siegel, 2023, p. 1).

Technological developments in Indonesia during the period 2018 to 2022 reflect positive progress, with a significant increase in the index of technological development and internet usage. According to the Central Statistics Agency (BPS, 2023), there was an increase of 0.78 points in the five years. Internet usage in Indonesia has also increased by 13% in one year. However, there are still significant inequalities in access and utilization of technology, especially in remote

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areas. Indonesia still faces challenges in leveling the accessibility of technology and information, with technology development centers still focusing on the island of Java. Data reported by BPS (2023) shows that eastern Indonesia, such as Papua and East Nusa Tenggara, has a low technology and information development index when compared to Jakarta.

This inequality reflects the challenges that need to be overcome in expanding access and utilization of technology throughout Indonesia (Belcher et al., 2024, p. 1). In addition, the era of information-rich digitalization also brings new challenges in information processing and management (Giannini & Bowen, 2019). These challenges are important to understand to integrate technology effectively in the learning environment (Sageengrana et al., 2024, p. 1). By understanding the challenges faced and the potential of existing technologies, steps can be taken to maximize the benefits of technology in the context of learning (Rosen, 2009). Efforts to formulate effective strategies in integrating technology into learning are very important to ensure that the benefits of technology can be felt equally by all Indonesian people, as well as to overcome the challenges that arise along with this era of digitalization.

Thus, this study will trace the influence of learning technology on writing literacy motivation. This study will also outline how learning technology can provide more detailed measurements of the progress of writing literacy. Through a deeper understanding of the dynamics that have been described, it is hoped that this research can formulate a more effective strategy for integrating technology into the learning environment. So that it can strengthen reading literacy and foster sustainable writing motivation for students at various levels of education.

II. LITERATURE REVIEW

A. Literacy Motivation

Literacy is a process of developing individual knowledge and potential that refers to understanding, assessment, use, and involvement in written texts. Good literacy skills allow individuals to access information, analyze texts, and make decisions based on a deep understanding of the material being read (Esmer, 2019). This emphasizes that literacy is not only about technical ability, but the ability to understand, evaluate, and interpret the information contained in written texts (Su et al., 2024, p. 1). The emphasis on cognitive skills required in the reading process shows that reading is a process that requires a variety of complex cognitive skills.

Several studies reveal that achievement in literacy is influenced by a variety of complex and multidimensional factors (Koyuncu & Firat, 2021). The first influence is the ability to read fluently (Zhao & Huang, 2024, p. 1) and understanding the structure of the text in helping to interpret and relate the information read (Teng & Ma, 2024, p. 1). This is because understanding the structure of a text is a form of cognitive construction that plays an active role in the individual (Zhu et al., 2024, p. 1). The use of cognitive and metacognitive strategies plays an important role in understanding and managing the information obtained from reading texts (Zheng et al., 2024, p. 1). Lastly, high motivation for reading will encourage individuals to be actively involved in understanding reading texts (Wurster et al., 2023, p. 1). A deep understanding of these factors can help in the development of effective educational strategies to improve students' reading comprehension holistically.

The association between students' reading literacy levels and writing literacy has a close relationship and influences each other in the development of a person's language skills (Xu & Zheng, 2024, p. 1). A person who has a high level of reading literacy tends to have a better understanding of grammar, vocabulary, or sentence structure and these components are very important in effective writing (Koyuncu & Firat, 2021). Reading diverse books, stories, and articles can expand one's imagination and stimulate creativity. This helps in generating new ideas and crafting interesting stories or writings (Weng et al., 2024, p. 1). Good reading literacy can provide inspiration and fuel for a person's writing ability (Juanda et al., 2024; Lee & Mao, 2024, p. 1). As such, the emphasis on literacy development in schools and other learning environments is an important step in improving the overall quality of education and preparing students for success in various aspects of academic and professional life (Esmer, 2019).

Empirical studies have shown a positive and moderate relationship between intrinsic motivation and literacy (Kowalski et al., 2022; Liu, 2023). Reading motivation arising from an individual's inner interest and pleasure is considered the most important type of motivation (Herrewijn et al., 2021, p. 1). When individuals feel intrinsic motivation to read, this tends to increase their level of engagement in the reading process, which in turn can lead to improved reading skills and achievement (Honko et al., 2023, p. 1; Juanda et al., 2024). This emphasizes the importance of creating an environment that supports and fosters interest and enjoyment in literacy, which will ultimately help improve an individual's overall writing literacy skills and achievement (Chiu et al., 2024, p. 1).

B. Student Habits in the Use of Technological Tools

The use of literacy learning resources facilitated by the use of technology is becoming increasingly important in the world of education (Rusydiyah et al., 2020). This is because technology-based learning can present instructional materials in a contextual, visual, and auditory manner that is interesting and interactive (Imjai et al., 2024, p. 1). In line with the Decree of the Minister of Education Number 22 of 2016 concerning standards for the primary and secondary education process, information and communication technology must be applied integratively, systematically, and effectively by considering conditions and situations in the field. By utilizing digital literacy, teachers can present

learning materials more dynamically and interestingly to students (Rusydiyah et al., 2020). This not only makes the learning process more interesting but also helps students to be more engaged and understand the material being taught.

Learning technology creates wider access to a variety of reading resources, such as e-books, online articles, and interactive learning platforms (Imjai et al., 2024, p. 1). These innovations can help improve accessibility to diverse reading materials, providing more options for students to expand their knowledge and deepen their understanding of various topics (Wang & Wang, 2025). Learning technology can be packaged interactively and interestingly through various media, such as video, audio, animation, and educational games (Gallardo-Echenique et al., 2016). Packaging learning using technology can increase students' interest and involvement in reading materials. By presenting information through various media, students can have a more varied and interesting learning experience (Ford, 2024). This can strengthen students' motivation to read more because engaging learning tends to stimulate students' interest in a topic (Booton et al., 2023).

The integration of information and communication technology in the learning process has been proven to help students develop digital skills that are very important in the current era (Gómez-Trigueros et al., 2019). Technological skills are an integral part of the concept of literacy (Parrila & Georgiou, 2024, p. 1). So the meaning of literacy here includes not only the technical ability to use technology, but also a deep understanding of how technology can be used effectively to learn, work, and collaborate (Beck, 2020; Kyrlyova et al., 2023). Therefore, literacy includes not only technical abilities but also a contextual understanding of the role of technology in daily life (Shafiee Rad & Alipour, 2024, p. 1). The importance of these technology and literacy skills is becoming increasingly relevant in students' preparation for an increasingly digitally connected future (Rieh et al., 2022, p. 1). The ability to use technology wisely and effectively is an important asset that can help students adapt to developments and changing times.

III. METHODS

The sample withdrawal in this study uses a cross-sectional design method. The cross-sectional method is a research approach that involves collecting data at one specific point in time from a variety of different individuals, groups, or variables. It aims to provide a representative picture of the situation or relationship between variables at a given moment. This approach does not involve collecting data from the same individuals or groups at regular intervals over some time. The research hypothesis is as follows:

H1: The influence of learning technology on students' habits and behavior

H2: The influence of learning technology on students' writing literacy motivation

The analysis method used to answer the hypothesis in this study is the Structural-Partial Least Square Equation Model (SEM-PLS) with the help of SmartPLS3 software. SEM-PLS is a powerful analysis method because it does not assume data with scale measurements and small samples and can be used for nominal, categorical, ordinal, interval, and ratio data (Hair et al., 2017). In addition, SEM-PLS also has the advantage of its flexibility to handle complex models, overcome multicollinearity, and estimate asymmetrical models well. This makes it an ideal choice for studies with relatively small samples or when the data do not meet the assumptions of normal distribution (Hair et al., 2017).

The participants in this study are students in several junior high schools in Indonesia, both boys and girls, who study in rural schools, with the category of grades 7, 8, 9, and aged 12-15 years. This survey is a self-report survey distributed over 5 months, with a total of 1. 214 participants. The following are the results of the description of the characteristics of the respondents.

TABLE 1
SAMPLE STRUCTURE

Demographics	Frequency	Percentage	Accumulated
Gender			
Male	586	48.3	48.3
Female	628	51.7	100.0
Age			
12 years old	167	13.8	13.8
13 years old	484	39.9	53.6
14 years old	360	29.7	83.3
15 years old	203	16.7	100.0
Period of use of learning technology			
0-1 years	124	10.2	10.2
1-2 years	339	27.9	38.1
3-5 years	751	61.9	100.0

Table 1 illustrates the structure of the research sample based on demographic characteristics and factors related to the use of learning technology. In terms of gender, as many as 586 students (48.3%) were male, while the rest, as many as 628 students (51.7%), were female. In terms of age, 13-year-old students have the highest proportion with 484 students (39.9%), followed by 14-year-old students as many as 360 students (29.7%). From the period of use of learning technology, the majority of students have used learning technology for 3-5 years, namely 751 students (61.9%).

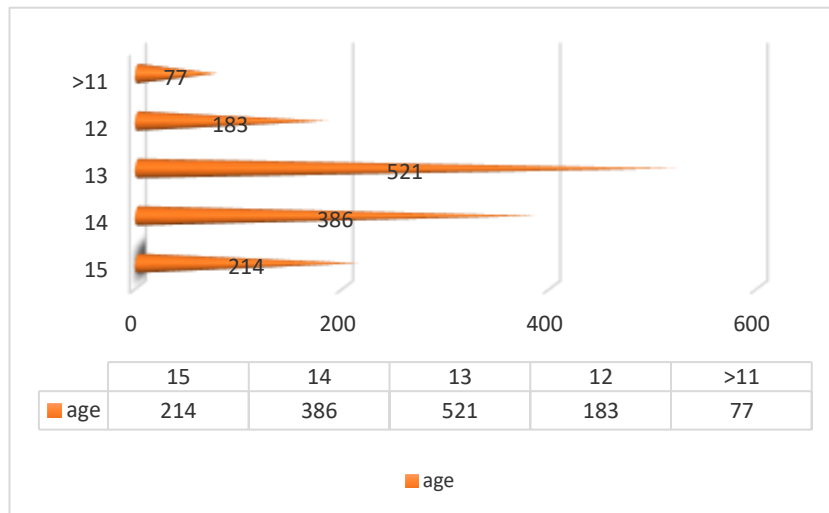


Figure 1. Total Participant Based on Age

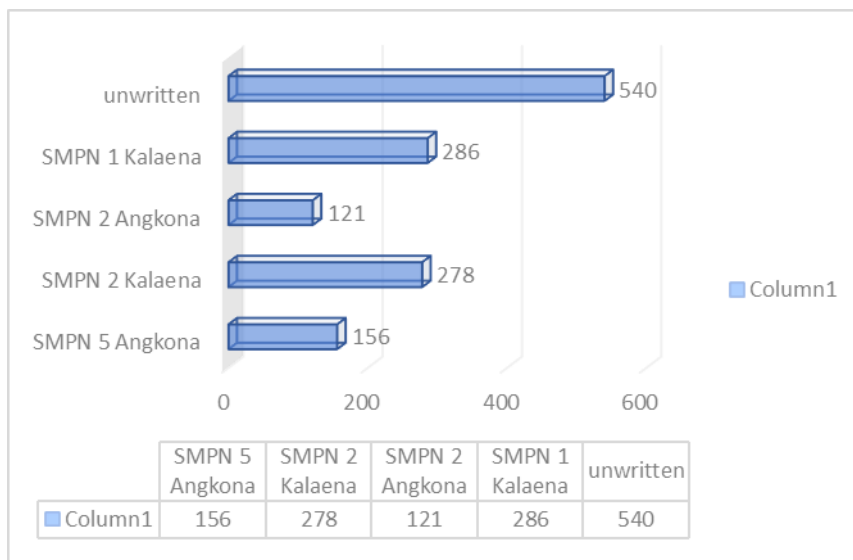


Figure 2. Total Participant Based on School

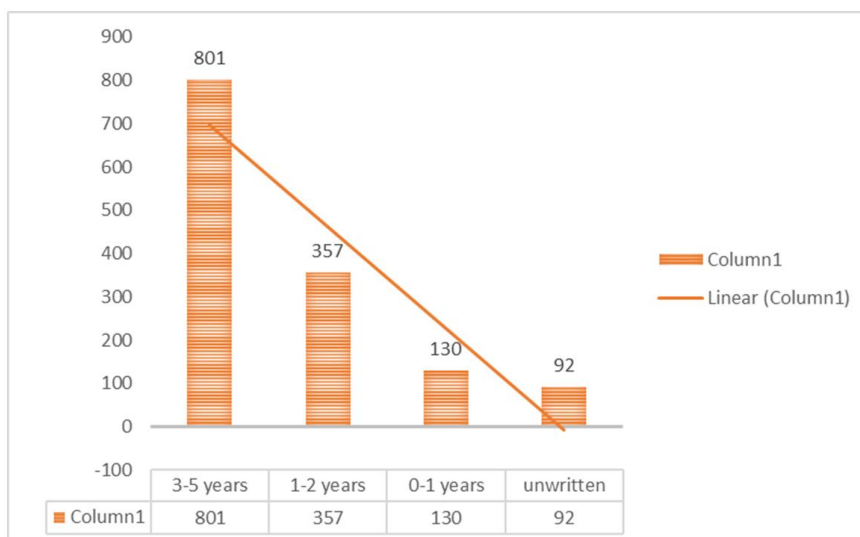


Figure 3. Total Participant Based on Period of Use of Learning Technology

IV. RESULTS

Table 2 displays the results of a descriptive analysis for the variable "Learning Technology" based on five question

items using a Likert scale of 1-7. The overall average for the variable "Learning Technology" is 4.98, indicating the level of students' preference for the use of learning applications or technologies in the learning process. This result is also reinforced by the second highest ranking on the question item "I enjoy using learning applications or technologies in the learning process," with an average of 5.31.

TABLE 2
DESCRIPTIVE STATISTICS OF LEARNING TECHNOLOGY

Items	Mean	SD
I like to use learning applications or technology in the learning process.	5.31	1.51
The learning technology that has been prepared is very easy to use and the features provided are interesting.	5.05	1.39
Learning technology or ASCL helps me gain new knowledge such as socio-cultural knowledge and other knowledge.	4.77	1.54
The learning technology that I have used has made a significant contribution, making me more effective and productive in completing tasks, saving time, meeting learning needs, and meeting my expectations.	5.01	1.47
Ideally, the application of sociocultural literacy and similar learning technologies should be applied in the early stages of learning for all subjects or used every day.	4.77	1.46

In addition, a high average is also seen in the question item "The learning technology I have used has made a significant contribution, making me more effective and productive in completing tasks, saving time, meeting learning needs, and meeting my expectations," with an average score of 5.01. This shows that students feel significant benefits from the use of learning technology in increasing their effectiveness and productivity in the learning process. Nevertheless, the question items "Learning technology or ASCL helps me gain new knowledge such as socio-cultural knowledge and other knowledge" and "Ideally, the application of socio-cultural literacy and similar learning technologies should be applied at the initial stage of learning for all subjects or used daily" received relatively lower average scores, namely 4.77 and 4.77 respectively.

TABLE 3
DESCRIPTIVE STATISTICS OF STUDENT HABIT AND BEHAVIOUR

Items	Mean	SD
I always want to go to the library or bookstore to find a book that I enjoy.	4.67	1.51
I always open the application of learning technology or social media to read whatever information is available in it.	4.78	1.50
I like to participate in reading organizations or activities either carried out by the school or outside the school.	4.69	1.48
I love to read anything my eyes can see.	4.81	1.42
I enjoy seeing or paying attention to my friends, teachers, or social environment if I'm reading.	4.66	1.38

Table 3 shows the results of descriptive analysis for the variable "Student Habit and Behaviour" based on five question items using the Likert scale 1-7. The overall mean for this variable was 4.98, indicating students' tendency in reading habits and behaviors. The question item that received the highest average was "I enjoy reading anything that my eyes see" with an average score of 4.81. This shows that the majority of students tend to read whatever material they see around them. Followed by the question item "I always open learning technology applications or social media to read whatever information is available in it" with an average of 4.78, indicating that students tend to use learning technology and social media as additional reading resources. In addition, a relatively high average score was also seen in other question items, such as "I always want to go to the library or bookstore to find books that I like" with an average score of 4.67 and "I like to participate in reading organizations or activities either carried out by the school or outside of school" with an average score of 4.69. However, the question item "I enjoy seeing or paying attention to my friends, teachers, or the social environment if I'm reading" scored the lowest average score, which was 4.66, indicating that students tended to focus more on reading than social interaction while reading.

TABLE 4
DESCRIPTIVE STATISTICS OF WRITING LITERACY MOTIVATION

Items	Mean	SD
I feel happy to express my writing through technology platforms such as writing apps, social media, and various accessible digital learning tools.	4.62	1.39
Every day I write a diary, do schoolwork, and write to communicate on social media.	4.50	1.40
I got intrinsic motivation (attitude and belief) to keep writing.	4.61	1.35
I feel motivated to continue writing because of external (extrinsic) factors, such as support and encouragement from teachers, friends, and parents.	4.59	1.38
I feel motivated to read thanks to the use of several technologies, participation in the writing process in the application platform that has been prepared increases my motivation level in writing literacy.	4.71	1.43

Table 4 displays the results of the descriptive analysis for the variable "Writing Literacy Motivation" based on five question items using a Likert scale of 1-7. The overall average for this variable is 4.61, indicating the level of motivation of students in writing literacy. The question item with the highest average score was "I feel motivated to read thanks to the use of several technologies, participation in the writing process in the application platform that has been prepared increases my motivation level in writing literacy" with an average score of 4.71. This shows that the use of technology, especially in writing on application platforms, can increase students' motivation in writing literacy. Followed by the question item "I feel excited about expressing writing through technology platforms such as writing apps, social media, and various accessible digital learning tools" with an average of 4.62, indicating that students feel joy in writing through technology platforms. In addition, a fairly high average score was also seen in other question items, such as "I got intrinsic motivation (attitude and belief) to continue writing" with an average score of 4.61. However, the question item "Every day I write daily notes, schoolwork, and writing to communicate on social media" scored the lowest average score, which is 4.50, indicating that not all students actively engage in writing activities every day.

TABLE 5
CONVERGENT VALIDITY

Variable	Items	MLE Parameter Estimation		SMC	AVE	CR
		Item Loading (λ_x/λ_y)	Measurement Error (δ/ϵ)			
Learning Technology	LT1	0.735	0.460	0.540	0.551	0.859
	LT2	0.757	0.427	0.573		
	LT3	0.690	0.524	0.476		
	LT4	0.781	0.390	0.610		
	LT5	0.744	0.446	0.554		
Student Habit and Behaviour	SHB1	0.716	0.487	0.513	0.533	0.850
	SHB2	0.780	0.392	0.608		
	SHB3	0.780	0.392	0.608		
	SHB4	0.709	0.497	0.503		
	SHB5	0.657	0.568	0.432		
Writing Literacy Motivation	WLM1	0.805	0.352	0.648	0.640	0.899
	WLM2	0.769	0.409	0.591		
	WLM3	0.801	0.358	0.642		
	WLM4	0.812	0.341	0.659		
	WLM5	0.811	0.342	0.658		

Convergence analysis is one of the important aspects of the validity of the construct of a measurement instrument. Table 4-6 show the results of convergence analysis for the variables "Learning Technology", "Student Habit and Behaviour", and "Writing Literacy Motivation" in this study. The results of the loading measurement (λ_x/λ_y) for all question items on each variable showed a fairly high number, with a range between 0.657 to 0.812, indicating that all question items were able to measure the desired construct well.

Furthermore, Shared Mean-Variance (SMC) and Average Variance Extracted (AVE) are measures used to evaluate how well the observed variable reflects the observed latent variable, where high values indicate a better degree of convergence. The results of the analysis showed that all variables had fairly high SMC and AVE values, with a range between 0.513 to 0.659 for SMC and 0.432 to 0.659 for AVE. This showed that the observed variable was well representative of the observed latent variable.

In addition, the Composite Reliability (CR) value is also used to measure the internal reliability of the measuring instrument, where a high value indicates a better level of reliability. The results of the analysis showed that all variables

had high CR values, with a range between 0.850 to 0.899, indicating that the measurement instruments used in this study had good reliability.

Overall, the results of the convergence analysis show that the measurement instruments used in this study have good constructive validity, with all question items being able to measure the desired latent variables consistently and reliably. This interpretation gives confidence in the use of such measurement instruments in this study.

TABLE 6
CORRELATION MATRIX FOR MEASUREMENT SCALES

Construct	LT	SHB	WLM	AVE	CR
LT	0.742			0.551	0.859
SHB	0.751	0.730		0.533	0.850
WLM	0.886	0.816	0.800	0.640	0.899

Correlation analysis is one way to evaluate the relationship between variables in a study. Table 4-7 show the correlation matrix between the constructs "Learning Technology" (LT), "Student Habit and Behaviour" (SHB), and "Writing Literacy Motivation" (WLM), as well as the average values of AVE (Average Variance Extracted) and CR (Composite Reliability) for each construct.

The results of the analysis show that there is a significant relationship between the LT, SHB, and WLM constructs. The highest correlation occurred between the LT and WLM constructs, with a correlation value of 0.886. This shows that there is a strong relationship between the use of learning technology and students' motivation for writing literacy. In addition, the SHB construct also showed a significant relationship with LT (correlation 0.751) and WLM (correlation 0.816), indicating that students' reading habits and behaviors were also closely related to the use of learning technology and writing motivation.

Furthermore, the high AVE and CR values for each construct (LT: AVE = 0.551, CR = 0.859; SHB: AVE = 0.533, CR = 0.850; WLM: AVE = 0.640, CR = 0.899) indicate that the construct has good constructive validity and internal reliability. Overall, the results of the correlation analysis show that there is a significant relationship between the LT, SHB, and WLM constructs in the context of this study.

TABLE 7
RELIABILITY ANALYSIS

Variable	Items	Corrected Item-Total Correlation	Alpha If Item Deleted	Cronbach's α
Learning Technology	LT1	0.678	0.839	0.865
	LT2	0.721	0.829	
	LT3	0.643	0.848	
	LT4	0.712	0.830	
	LT5	0.680	0.838	
Student Habit and Behaviour	SHB1	0.658	0.821	0.851
	SHB2	0.671	0.817	
	SHB3	0.710	0.807	
	SHB4	0.654	0.822	
	SHB5	0.615	0.832	
Writing Literacy Motivation	WLM1	0.751	0.875	0.898
	WLM2	0.718	0.883	
	WLM3	0.756	0.874	
	WLM4	0.763	0.873	
	WLM5	0.754	0.875	

Table 7 displays the results of reliability analysis for the variables "Learning Technology" (LT), "Student Habit and Behavior" (SHB), and "Writing Literacy Motivation" (WLM) in this study, using the item-total and alpha Cronbach correlation methods. The results of the analysis showed that all question items for each variable had a fairly high item-total correlation, with a range between 0.615 to 0.763 for LT, 0.615 to 0.710 for SHB, and 0.718 to 0.763 for WLM. This shows that all question items have a strong relationship with the total score of the variable in question.

Furthermore, the Cronbach alpha for each variable also showed a high level of reliability, with values between 0.851 to 0.898 for LT, 0.807 to 0.832 for SHB, and 0.873 to 0.898 for WLM. This shows that the measurement instruments used in this study have good consistency in measuring the desired construct. Overall, the results of the reliability analysis show that the measurement instruments for the LT, SHB, and WLM variables in this study have a good level of reliability, so they can be trusted in measuring the desired construct. This interpretation gives confidence in the use of such measurement instruments in this study.

TABLE 8
EXAMINATION OF COMMON METHOD VARIANCE-EXPLORATORY FACTOR ANALYSIS

Components	Total	%	Cumulative
1	3.518	23.453	23.453
2	2.228	14.857	38.310
3	1.707	11.379	49.690
4	1.574	10.491	60.181
5	1.544	10.297	70.477
6	1.120	7.465	77.942

All indicators were analyzed by factors with the results in tables 4-9 produced on the first factor having a variance value of 23.45% which is lower than 50%. The EFA results show that there is no significant variance problem from the general method data.

TABLE 9
PROPOSED MODEL RESULTS

Symbol	Paths	Coefficients	R2	Hypotheses	Test Results
γ_{11}	LT → SHB	0.920***		H1	
γ_{21}	LT → WLM			H2	

The analysis of the proposed model in Table 9 shows significant results related to the relationship between the variables "Learning Technology" (LT) and "Student Habit and Behaviour" (SHB), and LT with "Writing Literacy Motivation" (WLM), both of which are variables that represent student performance. The results of the analysis showed statistically significant path coefficients, namely 0.920 for the LT → SHB line and 0.798 for the LT → WLM line, with a significance level of $p < 0.001$. This indicates that the use of learning technology has a strong positive influence on students' habits and behaviors in learning (SHB) and writing literacy motivation (WLM).

The results of the analysis show that the path coefficients between Learning Technology (LT) and Student Habit and Behaviour (SHB) are 0.920, while between LT and Writing Literacy Motivation (WLM) is 0.798. These two values show a strong and positive relationship between the use of learning technology and students' learning habits and behaviors, as well as their motivation for writing literacy. A high path coefficient indicates that any increase in the use of learning technology will contribute positively to the improvement of students' learning habits and their writing motivation.

In addition, a significance value (p-value) of less than 0.001 confirms that the relationship between LT SHB and WLM did not occur by chance. This means that these results are reliable and not just a result of chance. These results are in line with theories that state that the use of technology in learning can affect students' motivation and learning behavior. In this context, learning technology is not only a tool but also an important factor in forming a learning environment that is conducive to improving student performance.

Thus, the results of this analysis support both research hypotheses, namely H1 which states that LT has a positive effect on SHB, and H2 which states that LT has a positive effect on WLM. This interpretation shows the importance of integrating learning technology in education to improve student's learning habits and behaviors as well as their motivation in writing, which can ultimately have a positive impact on overall student performance.

V. DISCUSSION

Technology has given birth to fundamental changes in the world of education, especially in the context of learning. These changes not only affect the way we access information, but also have a significant impact on students' motivation, habits, and writing behavior. Technology acts as a mediator that stimulates the imagination to create new ideas and strengthen students' independence during the learning process (Koyuncu & Firat, 2021). In addition, technology-enabled learning encourages critical thinking processes in students, which has the potential to improve their academic achievement (Zheng et al., 2024, p. 1). Through technology, students have wider access to educational resources, including learning materials, reading materials, and writing tools (Koyuncu & Firat, 2021). This allows them to explore a variety of topics and express their ideas more creatively and innovatively. With technology, students can also learn independently and develop their writing skills without depending on the traditional learning environment.

The results of the study showed that there was a significant relationship between the use of technology in writing literacy and literacy motivation. This confirms that mastery of learning technology can provide a positive boost to students' motivation to write. In line with the findings of Weng et al. (2024) who highlight that learning technology has great potential to increase student motivation in writing. Using various technology tools and platforms, students can experience a more engaging and interactive writing experience. The use of technology can also help students feel more connected to the topic they are writing about, as well as provide opportunities to explore various social and cultural aspects related to the topic (Tran & Ma, 2025). Furthermore, the use of technology is no longer just a process of pouring ideas but also transformed into a schematic framework for writing (Zhu et al., 2025). Technology helps students to be more involved in the writing process, broadens their understanding of the topic being discussed, and provides space for creative exploration in their written expression.

The results of the study also showed that there was a significant relationship between the use of technology and

student habits and behavior. Through technology, students can access a variety of educational resources that can improve their learning abilities and enrich their knowledge beyond the material taught in the classroom (Varona-Gomez et al., 2025). This allows students to be more motivated in learning and exploring the material independently. In addition, another benefit of using technology in learning is the ability of students to better manage time. Technology helps student complete assignments on time through productivity and time management apps, which in turn can improve their academic performance. Another positive impact of the use of technology is the strengthening of social relationships and the building of a wider support network (Yang, 2025). Technology allows students to communicate and collaborate with classmates and teachers, both through online learning platforms and social media. This enhances students' collaborative and communication skills, which are crucial in a modern learning environment.

The use of technology must be directed effectively and sustainably. A planned and directed approach to integrating technology into writing literacy can ensure that students are truly engaged and motivated to write actively. Educators need to consider a variety of factors, including choosing a platform or app that suits students' needs and interests, as well as providing constructive guidance and feedback to help them develop their writing skills (Zheng et al., 2024, p. 1). The next problem that must be addressed is to ensure that there is no gap in access to technology and information between rural and urban areas (Xu & Zheng, 2024, p. 1). Therefore, educators need to develop the right strategies to integrate technology into learning so that they can maximize its benefits while overcoming potential risks and obstacles (Imjai et al., 2024, p. 1). As such, educators need to be aware of the potential of technology in increasing students' motivation to write, while paying attention to effective strategies in applying it (Rusydiyah et al., 2020). With the right approach, learning technology can be a powerful tool in strengthening students' writing literacy and stimulating their interest in exploring the world of writing more deeply.

It is important to pay attention to how technology is applied in forming positive habits in students' writing literacy, although it has advantages in increasing writing literacy motivation (Wang & Wang, 2025). The results of the study show that there is a significant relationship between the use of technology in the formation of students' writing habits. The flexible nature of technology opens up opportunities for learners to express ideas and ideas in various ways (Beck, 2020; Kyrlylova et al., 2023). They can use various platforms to share their writing and get feedback from fellow writers. The feedback received is a crucial element in continuously improving the quality of students' writing. Through feedback, learners have the opportunity to improve and develop their writing skills (Gómez-Trigueros et al., 2019). The existence of this feedback is one of the advantages of using technology in writing literacy.

Students can also collaborate in the writing process, provide feedback to each other, and learn from other people's writing experiences. Collaboration between learners not only enriches the learning experience but also allows them to hone their writing skills together (Booton et al., 2023). In addition, through technology, students can deepen their understanding of grammar, writing structure, and the use of appropriate writing styles (Juanda et al., 2024; Lee & Mao, 2024, p. 1). With interactive and collaborative learning experiences, students can feel motivated to write naturally (Herrewijn et al., 2021, p. 1). The integration of technology in writing learning has a significant positive impact on the formation of students' writing habits (Kowalski et al., 2022; Liu, 2023). A wise approach to the use of technology not only strengthens students' writing skills but also stimulates their interest in exploring the world of writing more deeply and diversely (Rusydiyah et al., 2020). Thus, learning technology can be an effective tool in strengthening students' writing skills and building a sustainable interest in writing literacy.

VI. CONCLUSION

Learning technology has brought significant changes in students' motivation related to writing literacy. The use of technology in writing learning has increased student motivation by providing easy access to learning resources. Students demonstrate increased motivation to explore new topics and ideas, while simultaneously being provided with opportunities to express themselves through writing. The quick and measurable feedback from the technology allows students to see their progress more clearly and provides an opportunity to improve their writing skills firsthand.

However, it is important to pay attention to the negative impact of using technology in learning to write, such as distractions from social media or confusion due to too many choices. Therefore, educators need to take a balanced approach in integrating technology in writing learning, by ensuring that its use supports and increases student motivation rather than hindering it. Overall, learning technology has opened the door for the development of students' writing skills significantly. By harnessing the potential of technology wisely and being aware of the challenges associated with it, it can continue to advance students' motivation and writing skills to face the demands of an increasingly digital and connected world.

The researchers believe that the results of the study are important findings, but the researchers are also aware of the limitations in this study, such as the researcher choosing to use a cross-sectional design to make it easier to find respondents and also because of the limited funds and time that this research team has.

This study has unraveled the correlation between technology learning and writing literacy motivation in junior high school students in rural Indonesia. For further development, several recommendations were put forward to deepen understanding and improve the quality of students' digital literacy. The government can design a digital literacy curriculum that focuses on developing a student writing practice platform. In addition, there needs to be an equal distribution of adequate access to technology and digital learning tools to reach all regions, including rural areas, so that

there is no gap in writing literacy and digital literacy skills.

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