


Analysis of Factors Influencing Students' Digital Literacy in the Smart School Program at State Senior High School 13 Takalar

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Article Info	ABSTRACT
<p>Keywords: Self Determination, Digital Literacy, Digital Mindset, Curiosity, Smart School.</p>	<p>This study aims to analyze the influence of internal factors in the form of curiosity, self-determination, and digital mindset on the level of digital literacy of students in the context of implementing the Smart School program at SMA Negeri 13 Takalar. Using a quantitative approach with descriptive and verification methods, data were obtained from 65 respondents through a Likert scale questionnaire. The results of the regression analysis showed that the three independent variables had a positive and significant effect on students' digital literacy. Self-determination was the factor with the largest contribution, followed by digital mindset and curiosity. The determination coefficient of 75.9% indicates that most of the variation in digital literacy can be explained by these three variables. This finding emphasizes the importance of students' psychological readiness, not only the provision of technological infrastructure, in supporting digital learning. The implications of this study indicate the need for learning strategies that focus on developing students' character and internal competencies so that the transformation of digital education can run optimally</p>
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INTRODUCTION

The current development of digital technology has transformed various aspects of life, including the education system. Digital transformation requires educational institutions to utilize technology not only as a learning tool but also to develop students' digital literacy competencies. Digital literacy extends beyond the ability to operate digital devices, encompassing critical thinking skills, information evaluation, and effective digital communication (UNESCO, 2023). In the context of Indonesian education, digital literacy has become an integral part of the Freedom to Learn policy, particularly through the replacement of the National Examination with the Minimum Competency Assessment (AKM), which emphasizes strengthening literacy, numeracy, and character.

The importance of digital literacy becomes increasingly apparent when examining the profile of Indonesia's current youth. According to data from the Central Statistics Agency (BPS, 2023), 59.9% of those aged 5–24 use the internet for learning. This figure demonstrates the growing accessibility of digital technology, but does not necessarily guarantee the quality of its use. At the high school level, internet use for learning activities

reaches 91.01%. However, national surveys also indicate low digital literacy competencies among students, particularly in understanding, analyzing, and critically validating information (Kemdikbudristek, 2024).

The implementation of the Smart School program is one strategy adopted by various schools, including State Senior High School 13 Takalar. This program integrates online and offline learning in a structured manner to strengthen the quality and access of education. Digital facilities such as smart TVs, computer labs, and internet connections have been provided to support hybrid learning activities. However, findings from the 2023/2024 academic year report card indicate that students' digital literacy at this school remains low. This condition indicates a gap between infrastructure provision and students' mastery of digital competencies.

Many previous studies have highlighted external factors influencing digital literacy, such as parental support, intensity of social media use, and device availability (Nasution & Harahap, 2022; Setiawan et al., 2023). However, research on the influence of internal factors is still limited. In this context, psychological factors such as curiosity, self-determination, and digital mindset are believed to play a significant role in shaping students' digital literacy skills (Deci & Ryan, 2020; Dweck, 2021; OECD, 2023). Curiosity drives individuals to explore information, while self-determination reflects persistence in facing digital challenges. On the other hand, digital mindset is mental readiness and attitudes toward innovation and technology.

Therefore, this study focuses on analyzing internal factors influencing students' digital literacy levels within the context of Smart School learning implementation at SMA Negeri 13 Takalar. The primary objective of this study is to identify and evaluate the influence of curiosity, self-determination, and a digital mindset on students' digital literacy skills. The results are expected to contribute to the development of technology-based learning strategies and support educational policies that are more responsive to the demands of the digital era.

THEORETICAL STUDY

Digital Literacy

Digital literacy is an individual's ability to use digital technology, communication tools, and networks to access, manage, analyze, evaluate, and create information effectively (Gilster, 1997; ALA, 2023). Digital literacy is not just technical skills, but also encompasses critical thinking skills, ethical interactions in digital spaces, and awareness of data security and privacy (UNESCO, 2023). In an educational context, digital literacy is necessary for students to filter information objectively and use digital resources productively.

Curiosity

Curiosity is a cognitive drive that drives individuals to acquire new information. In educational psychology literature, curiosity plays a crucial role in self-directed learning and digital exploration (Litman, 2005). Individuals with a strong sense of curiosity tend to actively seek information and have strong intrinsic motivation for technology-based learning.

Self Determination

Self-Determination Theory (SDT) by (Deci & Ryan, 2020) explains that someone with strong internal motivation will persevere in the face of challenges. In the digital context, self-determination encourages students to persist and learn to use technology despite facing technical or conceptual difficulties.

Digital Mindset

A digital mindset refers to viewing technological change as an opportunity, not a threat. Individuals with a digital growth mindset are more adaptable and open to innovation in learning (Dweck, 2021). This mindset is crucial in digital learning transformation processes such as the Smart School program.

Smart School

The Smart School concept combines offline and online learning by leveraging information technology to improve the efficiency and quality of learning (Fadli & Pardiyansyah, 2022). In this system, learning success depends heavily on the digital readiness of students, teachers, and infrastructure.

METHODS

This study uses a quantitative approach with descriptive and verification methods. The aim is to identify and analyze the influence of internal factors (curiosity, self-determination, and digital mindset) on students' digital literacy levels in the context of Smart School learning. The population in this study was all 181 students of grade XII at SMA Negeri 13 Takalar. Sampling was conducted using the proportionate stratified random sampling technique, using the Slovin formula with a 10% error rate, resulting in a sample of 65 students.

Data were collected using a closed-ended questionnaire based on a Likert scale. The instrument was structured around specific indicators for each variable. For curiosity, the indicators included internet use, knowledge of the web, and persistence in searching for information. Self-determination was measured through learning motivation, learning independence, and technological competence. The digital mindset was assessed by evaluating technology adaptation, digital creativity, and willingness to learn. Finally, digital literacy was defined as the ability to access, evaluate, and use digital information.

Data analysis was performed using multiple linear regression to test the effect of each independent variable on the dependent variable. Classical assumption tests, including normality, multicollinearity, and heteroscedasticity, were performed before hypothesis testing. Calculations were performed using the latest version of SPSS software.

RESULTS AND DISCUSSION

Result

This study aims to analyze the influence of internal factors, namely curiosity, self-determination, and digital mindset, on students' digital literacy levels in the context of Smart School learning at SMA Negeri 13 Takalar. Data were obtained from 65 respondents using a Likert-based questionnaire.

Table 1. Descriptive Statistics of Curiosity (X1)

Indikator	Average	Percentage (%)	Category
Utilization of the internet	4.20	84.0	Very high
Utilization of search engines	4.15	83.0	Very high
Knowledge about the difference between books and the internet	4.00	80.0	Tall
Knowledge of how the web works	3.75	75.0	Tall
Understanding hyperlinks	3.85	77.0	Tall
Persistence in seeking digital answers	4.10	82.0	Very high
Total Average	4.01	80.17	Tall

Source: Processed data, 2025

This table shows that all curiosity indicators have average scores ranging from high to very high, with an overall average of 4.01 or 80.17%. This indicates that most students have a strong drive to explore digital information. Students actively use the internet and search engines and have a basic knowledge of web structure and hyperlinks, which supports technology-based learning. Therefore, curiosity is a crucial factor driving increased digital literacy.

Table 2. Descriptive Statistics of Self-Determination (X2)

Indikator	Average	Percentage (%)	Category
Autonomy in the use of technology	3.95	79.0	Tall
Digital competence	3.80	76.0	Tall
Internal motivation in learning	4.05	81.0	Very high
Independent learning ability (kombel)	3.90	78.0	Tall
Total Average	3.93	78.5	Tall

Source: Processed data, 2025

The average score for this variable was 3.93, or 78.5%, which is considered high. This indicates that students are persistent and intrinsically motivated in using technology for learning. Their autonomy in using digital devices and independent learning skills demonstrate their readiness to manage digital-based learning without relying on direct instruction from teachers. Self-determination is a key pillar for successful independent use of digital media.

Table 3. Descriptive Statistics of Digital Mindset (X3)

Indikator	Average	Percentage (%)	Category
Understanding of technology	4.10	82.0	Very high
Adaptation to technological changes	4.05	81.0	Very high
Creativity in using technology	3.85	77.0	Tall
Digital collaboration	3.80	76.0	Tall
Willingness to continue learning	4.15	83.0	Very high
Total Average	3.99	79.8	Tall

Source: Processed data, 2025

The digital mindset had an average score of 3.99, or 79.8%, approaching the very high category. Students were shown to have a positive outlook on technology. They were willing to learn new technologies, able to adapt to change, and demonstrated digital creativity and collaboration. These findings indicate that students have begun to view technology not as a challenge, but as an opportunity in the learning process. With a positive digital mindset, the digital transformation process in schools becomes easier to implement.

Table 4. Descriptive Statistics of Digital Literacy (Y)

Indikator	Average	Percentage (%)	Category
Access to digital devices	4.20	84.0	Very high
Ability to use search engines	4.00	80.0	Tall
Mastery of learning applications	3.90	78.0	Tall
Understanding the function of digital devices	3.85	77.0	Tall
Digital ethics and security	3.70	74.0	Tall
Skills in using technology	4.00	80.0	Tall
Ability to utilize technology	4.10	82.0	Very high
Total Average	3.96	79.29	Tall

Source: Processed data, 2025

The average digital literacy score for students was 3.96, or 79.29%, which is in the high category. This reflects that students are generally able to access, use, and utilize digital technology effectively. However, indicators such as digital ethics and security scored slightly lower, indicating the need for further emphasis on awareness of responsible media use. Overall, students demonstrated competencies that support successful digital learning.

Multiple Regression Test

Partial Test

Table 5. Partial Test

No.	Variabel	t hitung	t tabel	Sig.
1.	Curiosity	2.011	1.669	0.049
2.	Self Determination	5.027	1.669	<0.001
3.	Digital Mindset	3.505	1.669	<0.001

Source: Processed data, 2025

Based on the results of the partial test or t-test above, the results obtained can be interpreted as follows:

1. The Curiosity variable (X1) shows a positive and significant influence on Digital Literacy (Y) as indicated by the regression coefficient value of 0.161, the t-count value of 2.011 which is greater than the t-table of 1.66940, and the significance value of 0.049 which is below the 0.05 limit.
2. The Self-Determination variable (X2) is proven to have a positive and significant influence on Digital Literacy (Y) with a regression coefficient value of 0.837, a t-count value of 5.027 which exceeds the t-table value of 1.66940, and a significance value of 0.000 which is smaller than 0.05.

- The Digital Mindset variable (X3) has a positive and significant effect on Digital Literacy (Y). This is indicated by a regression coefficient of 0.579, a t-value of 3.505, which is greater than the t-table of 1.66940, and a significance value of 0.000, which is below the threshold of 0.05.

Simultaneous Test (F Test)

Table 6. Simultaneous Test

F hitung	F tabel	Signifikansi
63.891	2.76	<0.001

Source: Processed data, 2025

Based on the results displayed in the table above, the calculated F value was 63.891, which is higher than the F-table of 2.76. In addition, the significance value of 0.000 is below the significance level (α) of 0.05. Thus, it can be concluded that simultaneously, the variables of Curiosity, Self-Determination, and Digital Mindset have a positive and significant influence on Digital Literacy.

Coefficient of Determination Test (R2)

The coefficient of determination test in this study was used to measure the extent to which capital can explain variations in the dependent variable. The coefficient of determination value ranges from 0 to 1 ($0 < R^2 < 1$). The results of the coefficient of determination test in this study can be seen in the following table.

Table 8. Coefficient of the Determination test

Adjusted R Square	R square
0.747	0.759

Source: Processed data, 2025

Based on the results of the coefficient of determination test in the table above, the R Square (R2) value was obtained at 0.759, equivalent to 75.9%. This value indicates that the three independent variables used in this study—Curiosity, Self-Determination, and Digital Mindset—could collectively explain 75.9% of the variation in the dependent variable, Digital Literacy. The remaining 24.1% was influenced by factors outside the research model that were not included in this study.

Discussion

The results of this study reinforce the understanding that the success of technology integration in education depends not only on the availability of digital infrastructure but is also significantly influenced by the psychological and cognitive readiness of students. The three internal factors analyzed in this study were shown to significantly contribute to students' digital literacy competencies.

First, the influence of curiosity on digital literacy aligns with (Litman's, 2005) findings, which suggest that curiosity encourages students to more actively explore information, including in digital contexts. Research by (Riswanti & Suryadinata, 2022) also supports this finding, stating that students with high curiosity are more open to learning digital media.

Second, these results align with (Deci & Ryan's, 2020) theory of self-determination, which states that individuals with high self-determination will have strong internal motivation to learn independently, including mastering digital devices. This finding is further supported by Musalina (2019), who found that self-determination positively correlates with vocational high school students' technological literacy skills.

Third, the digital mindset proved to be the most dominant factor in this study. This finding is supported by (Dweck, 2021), who argued that a growth mindset toward technology encourages individuals to be unafraid of change and more flexible in exploiting digital opportunities. (Sumarni et al., 2023) also found that teachers' and students' digital mindsets influenced the successful implementation of the Smart School program at SMAN 2 Wajo.

Furthermore, contextually, these results are consistent with a study by Saleh et al. (2023) that examined the effectiveness of Smart School at SMAN 4 Pangkep. They found that internal student factors significantly determine the success of digital technology utilization in hybrid learning.

Overall, the results of this study indicate that strengthening digital literacy in schools is not sufficient simply by providing facilities. Digital competency development programs must also encompass students' internal psychological aspects, such as motivation, determination, and mindset toward technology.

CONCLUSION

Based on the results of research conducted on students at SMA Negeri 13 Takalar in the context of Smart School learning, it can be concluded that the students' digital literacy level is in the high category. Their digital literacy is influenced not only by access to technology but also by internal factors such as curiosity, self-determination, and a digital mindset. These three variables have been shown to contribute significantly to improving digital literacy skills, with a digital mindset being the most dominant factor. These findings provide the foundation that improving digital literacy in schools is not just about providing facilities, but also requires learning strategies that foster character building and students' internal competencies. Therefore, educational interventions oriented toward developing mindset, motivation, and curiosity are highly relevant to support the success of digital transformation in education. Based on the findings of this study, it is recommended that schools, particularly teachers and education personnel, be more proactive in designing learning that fosters curiosity, strengthens self-determination, and fosters a positive digital mindset in students. This can be achieved through the integration of project-based learning methods, collaborative use of technology, and providing students with space for exploration and reflection in the use of digital media. Furthermore, teacher training in managing adaptive and student-centered digital learning needs to be improved to ensure optimal implementation of the Smart School program. Local governments and related parties are also expected to continue supporting the strengthening of schools' digital capacity by providing equitable infrastructure and regulations that support the development of 21st-century competencies.

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