

## The Relationship between the Intensity of Social Media Use and the Level of Digital Literacy in Informatics Subjects for Grade VIII Students of SMP Negeri 8 Salatiga

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**Abstract:** The study aims to determine the intensity of social media use and students' digital literacy level's relationship. Along with the times, social media is an essential part that is inseparable in everyday life. It is crucial to understand how the use of social media affects students in accessing and utilizing social media in learning. This research uses a quantitative method with a correlational approach. Correlational research in determining the two variables' relationship. The two variables to be tested are the intensity of social media use (X) and digital literacy (Y). Sampling using Cluster Random Sampling technique by taking 1 class totaling 32 students. The questionnaire with a Likert scale of 1-4 used to collect data. There was a significant relationship between the intensity of social media use and students' digital literacy level with a correlation value of 0.778. The results show that the higher the level of intensity of students' social media use, their digital literacy skills. This study provides suggestions for a more in-depth digital literacy development program.

**Keywords:** Digital Literacy; Relationship; Social Media; Correlational Study; Informatics Learning.

### 1. Introduction

Along with the development of technology, the subject of Informatics or ICT has become one of the main focuses in education. Informatics subjects are crucial because in the digital era, students need to be equipped with the ability and skills to use technology. Students who master how to use technology will later have relevant abilities to prepare themselves to face the world of work and improve their scientific and critical thinking skills. In addition, learning that uses computers through virtual laboratories can make students more active and interactive [1]. Informatics subjects now not only focus on technical mastery of technology, but also include digital literacy that helps students to use technology more critically and wisely. Not only the ability to use technology, it is very important for students to have good digital literacy skills as well. This ability is needed to help equip students to understand, evaluate and utilize

information obtained from the internet properly and wisely. Digital literacy not only makes it easier for students to face learning difficulties, but also becomes an active medium to improve the quality and effectiveness of learning [2]. Digital literacy facilitates fast, efficient, and fun learning and forms knowledge, attitudes and skills [3].

In an all-digital era, opening access to social media is a daily routine. This is motivated by the need for people who are thirsty to keep up to date with the latest information [4]. Social media platforms that are usually used to interact with friends online are now used as an effective learning medium used especially to improve students' digital literacy skills. Utilizing social media for learning media is the right step to realize effective learning messages and achieve quality learning [5]. Social media plays an active role in honing the ability to read, understand, and process information. So that this social media is a crucial part for students, because it is not only a means to communicate, but also a means to improve digital literacy skills [6]. Real-time or delayed social interaction between users is a key characteristic that sets social media apart from other digital platforms [7]. Not only that, social media also has other characteristics that encourage digital literacy, namely access to other users, meaning that collaboration between users is carried out so as to encourage cooperation and active participation [8]. We Are Social reports that by 2025, social media users in Indonesia will reach 143 million (50.2% of the population), while APJII records 221.6 million internet users out of a total of 278.7 million people in 2024. The majority of social media users are Gen Z (34.40%), this gene was born between 1997-2012. And followed by the millennial generation (30.62%) who were born in 1981-1996 [9]. The number of social media users aged 18 years and above reaches 126 million people, this shows that there is great potential in using social media for learning media effectively to encourage students' digital literacy skills.

Social media is a platform that emphasizes the existence of users and facilitates its users to carry out activities and work together [10]. Social media makes it possible to do learning without being limited in time or place [11]. The use of social media in Informatics subjects is expected to strengthen students' digital literacy skills, including students' ability to find, manage, and use information effectively and responsibly. Previous research has proven that social media can function as a collaborative tool to encourage student participation to be active in the learning process. For example, social media platforms such as Facebook and Twitter have been shown to increase student engagement in teaching and learning activities as well as facilitate student collaboration with teachers on online learning [12]. The high and low intensity of social media use will significantly have a positive and negative effect on students' digital literacy skills. On the one hand, the use of digital platforms or social media has been shown to show a positive correlation between digital literacy and adolescents' behavior in navigating information [13]. But on the other hand, excessive use of social media intensity will also have a negative impact on digital literacy skills by spreading misinformation, reducing critical thinking skills and causing dependence on internet platforms. This makes it difficult to distinguish between

true and false information which will have an effect on the ability to be responsible online [14].

Students at SMP N 8 Salatiga are active users of social media, but in its application this social media is more predominantly used for entertainment purposes. Although students' ability to use the internet is good, many students prefer to browse rather than read books to complete their assignments. This shows that students are less likely to do further verification for the information they encounter, so this shows that their digital literacy skills are not visible. Therefore, the study explores the relationship between the intensity of social media use and students' digital literacy skills in Informatics subjects. Based on that, the research was able to provide in-depth insights into the use of social media and the impact on digital literacy for grade VIII students in the subject of Informatics. The results of this research are expected to be developed to design strategies to improve students' digital literacy.

## 2. Materials and Methods

A correlational quantitative research was carried out at SMP Negeri 8 Salatiga to examine the relationship between the intensity of social media use (X1) and students' digital literacy (X2), with the Cluster Random Sampling technique used in sampling. The classes that are used as samples will be taken in their entirety so that the total sample used is 32 students. Data collection techniques through dissemination. The instruments in the questionnaire were obtained by adapting questionnaires from previous research which were then tested first on 30 outside the student sample to determine the validity and reliability of the instrument. The instrument was measured through a likert scale with 4 answer choices, namely strongly agree (SS), agree (S), disagree (TS), and strongly disagree (STS). The analysis used included normality tests, reliability tests, descriptive statistical tests and Spearman Rank correlation tests. The questionnaire grid from this study can be seen in the following table.

**Table 1.** Questionnaire Grid

Variable	Indicators	Item Number	Number of Questions
Intensity of Use Social Media	Attention	1-3	12 Items
	Appreciation	4-6	
	Duration	7-9	
	Frequency	10-12	
Digital Literacy	Literacy Information	1-3	21 Items
	Critical Thinking	3-6	
	Communication Skills	7-9	
	Ethics in Technology	10-12	
	Security of Personal Information	13-15	
	Device Security	16-18	
	Technology Security	19-21	

### 3. Results and Discussion

#### 3.1 Research Results

**Table 2.** Validity Test Results

Variable	Validity Index	Question Item
X	> 0.361 (Valid)	1,2,3,4,5,6,7,8,9,10,11,12
	< 0.361 (Invalid)	None
Y	> 0.361 (Valid)	1,2,3,4,5,6,8,10,12,14,15,16,17,18,19,20,21
	< 0.361 (Invalid)	7,9,11,13

Validity indicates the validity of the instrument with data considered valid if  $r$  calculates  $> r$  table at  $\alpha = 0.05$ . The test results showed 4 items were invalid because they were worth  $< 0.05$ .

**Table 3.** Reliability Test Results

Variable	Cronbach's Alpha Values	Information
X	0.739	Reliable
Y	0.871	Reliable

After the validity test was carried out, it was found that in variable X the research question items were all valid or the value was  $> 0.05$ , then for variable Y there were 4 items that were invalid or the value was  $< 0.05$ . Invalid items are removed and then tested for reliability. Reliability tests are used to show how well an instrument or measuring instrument can deliver consistent results under the same conditions over and over again. The instrument is said to be reliable if Cronbach's Alpha value  $> 0.60$ . Statements can be declared reliable.

**Table 4.** Normality Test Results

One-Sample Kolmogorov-Smirnov Test		Unstandardized Residual
N		32
Normal Parameters, b	Mean	.0000000
	Standard Deviation	5.72196026
Most Extreme Differences	Absolute	.101
	Positive	.099
	Negative	-.101
Test Statistic		.101
Asymp. Sig. (2-tailed)		.200c,d

The Kolmogorov-Smirnov normality test shows normal distributed data. The test results showed a significance value of  $0.200 > 0.05$ , then the data was normally distributed.

**Table 5.** Linearity Test Results with ANOVA

			Sum of Squares	Df	Mean Square	F	Sig.
Literacy * Intensity	(Combined)		653.283	12	54.440	2.790	.022
	Between Groups	Linearity	9.034	1	9.034	.463	.504
		Deviation from Linearity	644.249	11	58.568	3.002	.017
	Within Groups		370.717	19	19.511		
	Total		1024.000	31			

The linearity test shows that the relationship between two variables is linear. The relationship is said to be linear if the significance value of deviation from linearity > 0.05. The test results showed a value of 0.017 < 0.05, so there was no linear relationship between the X and Y variables.

**Table 6.** Descriptive Statistical Test Results

	N	Minimum	Maximum	Mean	Std. Deviation
Intensity	32	30	45	36.44	3.645
Literacy	32	44	68	54.50	5.747
Valid N (listwise)	32				

Digital literacy has an average score of 54.50, with a score range of 29-68 and the intensity of social media use has an average of 36.44 with a score range of 30-45. Compared to the intensity of social media use, digital literacy has a larger standard deviation of 5,747, the standard deviation value of social media use intensity is only 3,645. This shows that data from digital literacy is more varied than data on the intensity of social media use.

**Table 7.** Correlation Test Results

<b>Correlations</b>			Intensity	Literacy
Spearman's rho	Intensity	Correlation Coefficient	1.000	.778**
		Sig. (2-tailed)	.	.000
		N	32	32
	Literacy	Correlation Coefficient	.778**	1.000
		Sig. (2-tailed)	.000	.
		N	32	32

**Table 8.** Correlation Coefficients

Interval Coefficient	Relationship Level
0,00-0,199	Very Low
0,20-0,399	Low

Interval Coefficient	Relationship Level
0,40-0,599	Keep
0,60-0,799	Strong
0,80-1,000	Very Powerful

Source: [15]

The correlation test is used in proving the degree of relationship between two variables. The correlation test uses Spearman Rank correlation, this is because the data is ordinal. After testing with a correlation coefficient value of 0.778 and a significance value of 0.000 so that variable X is significantly related to Y. Based on the correlation coefficient table, the correlation coefficient interval which is at 0.778 is at a strong relationship level. This proves a strong relationship between the X and Y variables.

### 3.2 Discussion

According to the results described above, it can be seen that there is a significant relationship between the intensity of social media use and digital literacy. The test results found that the value of the correlation coefficient of the two variables was 0.778 so that the relationship between the two was categorized as strong. In accordance with the correlation level stated by Sugiyono, the correlation value which is between 0.60-0799 is included in the strong category. The variables of the intensity of social media use and digital literacy can be said to have a significant or positive relationship. The more often students use social media to learn, the more their digital literacy level will increase. Active social media users are more familiar with navigating digital interfaces, understanding their online privacy and also having good communication and evaluation skills. This is relevant to previous research which stated that user interaction with various digital content such as text, visuals and videos within social media encourages an increase in students' information literacy [16].

Social media has become a place for everyone to interact and share. Social media is one of the mandatory things that need to be accessed every day. The development of social media itself has become increasingly rapid along with the development of the times, which used to be only as an entertainment medium can now be used for fun learning. Social media helps in student learning through various fields to improve students' abilities. Social media as a platform that makes it easier for students to get information, materials and also learning resources. With this, students become more independent and increase motivation to learn. To increase students' learning independence, apps such as Instagram, WhatsApp, Facebook, Telegram, TikTok and others can be used [17]. Social media provides a lot of access to obtain information from various sites. With that, students get news, articles and also content about learning that is useful for updating the latest information, the more often students interact to evaluate whether the news is accurate or not. In an era of increasingly rampant disinformation, media literacy has become a powerful weapon of defense against the spread of hoaxes and the polarization of online communities [18].

Based on the results of the survey that has been conducted, students more often access social media TikTok and Instagram. This is in accordance with a report in katadata which states that the majority of Generation Z in Indonesia access Instagram more often. Instagram was chosen as a social media that is often used because of its convenience. Instagram allows its users to be used as a learning medium because it contains photos, videos, chats, and live [19]. With various features in it, Instagram can help in increasing students' creativity. Instagram can be used by educators to support information technology-based learning. Meanwhile, TikTok is a social media platform that presents audio-visual content for users to watch and listen to videos. Many users, especially students, actively use this platform because it provides entertainment when they feel bored, not only that this platform also provides the latest information that students can use to support learning.

Based on the results of the analysis, students showed the most prominent abilities in device security indicators, information literacy and also critical thinking skills. Students have high security skills because they are a generation that is technologically literate, since they have used technology in their daily lives. They have understood the importance of protecting themselves from malware attacks, using strong passwords for each account and using antivirus in their software. In information literacy skills, students can quickly access information on the internet easily compared to the generation of the 90s. With the advancement of the times, the critical thinking skills needed are even mandatory for students. With the increasing abundance of information circulating on the internet, students are required to analyze, identify and compare the credibility of information. Mastering these three abilities makes a solid foundation for students' digital literacy. So, grade VIII students of SMP N 8 Salatiga have quite good digital literacy skills.

Albert Bandura's theory of social learning provides a relevant theoretical framework in understanding how social media helps the development of digital literacy. Albert Bandura put forward a theory about social learning that emphasizes the importance of observing, modeling and imitating the attitudes, behaviors, and emotional reactions of others [20]. According to Bandura, the learning process is not through experience, but through observation of the behavior of others. Children observe the behavior of the people around them in a variety of ways. When accessing social media, students will pay attention to various influencers and imitate what they do, and later they will imitate the behavior they have observed before. The process of observing and imitating on social media is a practical example of the application of good and bad digital literacy. Here students must learn how to identify good content by observing how fellow social media users respond to information on the internet. The use of social media for learning can indeed improve students' abilities and knowledge, but it is also necessary to pay attention to the negative impact of using social media if not full of caution in using it. The use of social media that is not limited by time can make students not concentrate on learning, learning time will be wasted if students use social media without a clear purpose. Not only that, *Cyberbullying* It is also common in the use of social media itself,

students who do not have sufficient digital literacy skills will be easy targets for cyber predators in online fraud or phishing.

Many studies have discussed social media in helping to improve students' digital literacy skills. The results of the study show that social media can significantly help students in improving their digital literacy skills. As in a study by V. S et al. which showed that there was a significant increase in the digital literacy skills of students who used social media. Not only that, narrative-based activities on social media can be a practical approach in improving digital communication and digital literacy among students [21]. However, even though it can significantly improve digital literacy skills, there are many challenges in implementing the use of social media in learning. To develop social media literacy, a global approach is needed, this is needed to get maximum results [22]. Therefore, to maximize the use of social media in education, there needs to be a comprehensive approach that includes increasing access to technology and also teacher development. With that, social media will be an effective medium to increase digital literacy [23].

This study proves that factors such as critical thinking, analytical skills and social involvement determine students' digital literacy skills. Students at SMP N 8 Salatiga are actively involved social media users, so this is one of the factors why they have good digital literacy skills. This is in accordance with the theories in the previous literature which states that students' active involvement in using social media will be related to their digital literacy. Students who are active in social media tend to be able to think critically and are also able to analyze and evaluate information sources obtained on the internet so that this will improve their digital literacy skills.

This research provides insight into the use of social media and also its relationship with digital literacy. This research strengthens the theory of 21st century competence, digital literacy is not only a technical skill but is the basis for the ability to think critically and collaborate. With digital literacy, students will be more encouraged to wonder about the information obtained. Platforms in social media also encourage students to be able to collaborate anywhere and anytime. Social media can not only be used for entertainment, but also as a forum to develop 21st century skills.

#### 4. Conclusion

Grade VIII students in Informatics lessons at SMP N 8 Salatiga have quite good literacy skills. The intensity of social media use and digital literacy are related to each other. The higher the intensity of social media use, the higher the level of digital literacy of students. Students are more interested when learning is delivered using fun media such as videos and short texts, so TikTok and Instagram are social media that they often use to find sources of information or learning media. Social media can be used in learning because it helps students to be more independent and supports learning based on digital technology. Based on this, teachers can use social media to make students more interested and can also improve students' digital literacy skills.

## Author's declaration

### Author contribution

**Witkan Saputri:** Fully responsible for manuscript writing, title, research design, data collection, data analysis and interpretation. **Yuliana Tien Bayangkharwati Tacoh:** served as the main supervisor, providing direction and guidance, as well as substantive revisions to the manuscript.

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### Competing interest

The authors declare no competing interests.

### Ethical clearance

This research was conducted with the approval of Kesbangpol Salatiga, letter number 000.9/289, and the approval of the Principal of SMP N 8 Salatiga. The research subjects volunteered to participate in the study without coercion. The research was conducted by the ethical principles of research, specifically confidentiality and freedom of expression.

### AI statement

This article is the author's original work, written from original research and no sections or tables are generated by AI. English is checked using Grammarly and has been verified by the authors.

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