Aceh Students' Perspectives on Using Digital Media for Learning: A Gender-Based Study

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Abstract. Digital literacy has made a major contribution to students' understanding because digital literacy media can develop cognitive, affective and sociocultural aspects. Digital literacy is a critical talent that every individual requires to properly use digital technology. It encompasses a variety of abilities such as information literacy, technical literacy, communicative literacy, and innovative literacy. This study is a quantitative survey. In this study, the survey refers to a data-gathering strategy that focuses on obtaining information from high school students. This study included 645 high school students from Aceh province, with 358 females and 287 males participating. Convenience sampling was employed in this survey, and respondents were selected based on their gender, age, class, and amount of daily internet use. Data were collected to examine five different aspects of digital media use: (1) Impact of use; (2) Interaction with digital media; (3) Learning opportunities through digital media; (4) Habits of using digital media; and (5) Interest in learning through digital media.

Keywords: Digital Media, Gender, Aceh Students' Perspectives.

1.   Introduction

Digital literacy develops the skills necessary to use technology in educational settings [1]. Everybody must possess digital literacy, which includes a variety of skills like information literacy, technical literacy, communicative literacy, and innovative literacy, to use digital technology efficiently [2]. The capacity to use, assess, and analyze data using digital technology is known as digital literacy [3]. The ability to comprehend, analyze, organize, and evaluate information using digital technology is another definition of digital literacy [4]. The existence of digital literacy research will have implications for the importance of increasing the use of digital literacy among students because students must have a critical-creative nature when using digital literacy media so that they do not make mistakes [5].

Digital literacy has made a major contribution to students' understanding because digital literacy media can develop cognitive, affective and sociocultural aspects, especially

literacy in various digital environments [6]. The convenience of accessing information quickly, precisely, and in endless numbers is also an important aspect of digital literacy for pupils [7]. Define digital literacy as the use of literacy abilities in digital settings such as reading, writing, communicating, and participating online [8]. This includes things like searching for information, sending emails, creating social media content, and posting views and opinions online. Digital literacy is defined as the capacity to successfully use technology and digital resources to meet needs and achieve goals [9]. Digital literacy is also defined as the capacity to effectively use digital media and technology [10]. This comprises digital content access, analysis, evaluation, and creation skills [11].

Generation Z is made up of all people born between 1996 and 2012 AD. Like the preceding millennial generation, Generation Z is a transitional generation formed by rapidly advancing technology. It is a millennial generation that follows progress [12]. Information and communication technology has advanced as a result of technological advancements, which have accelerated the development of the internet [13]. Undoubtedly, the evolution of digital technology has had an impact on the advancement of educational technology. Teachers, legislators, and even parents must acknowledge that students' digital competency can serve as a springboard for lifelong learning. This is further evidenced by the fact that the educational process is shifting from teaching children traditional reading abilities to teaching them how to use today's technological literacy skills. Today's students need digital literacy as a survival skill and as a right because they are "digital natives" [14].

Students' usage of technology has been shown to increase their learning outcomes, particularly in the development of cognitive and critical thinking skills [15]. Technology can help improve the efficiency and effectiveness of the learning process [16]. But using technology in the classroom comes with hazards and obstacles that need to be properly addressed [18]. Students may benefit or suffer from the use of technology in the classroom. On the plus side, technology can enhance the quality of learning and assessment, as well as provide chances for distance learning and the development of students' digital abilities [13]. On the flip side, improper technology use can lead to health issues such as sleep disorders, eye fatigue, stress, and gadget addiction.

Nowadays, the majority of students use their smartphones as a tool to aid in their learning. But regrettably, a lot of pupils use smartphones incorrectly. Consequently, as internet users, it is critical that students gain a solid understanding of digital literacy, including time management, locating reliable sources of information, social media ethics, personal safety, device security, and even device usage [19].

As more students explore various forms of digital technology, several education development agencies are attempting to find efficient ways to create digital media that can boost student learning [20]. Digital media is a computer access network that is already very extensive due to the fact that it is made up of networks that are interconnected and will eventually reach the entire world [21]. The development of digital media is critical for

everyone because it is linked to the country's future [22]. The term "digital learning media" describes the dissemination of knowledge and the promotion of learning via the use of digital audio-visual resources and software. This makes it easier for students to obtain knowledge and skills and removes time and location restrictions [20].

Digital media must be an active partner in delivering gender-equal learning resources [23]. Female students' usage of digital media, particularly the potential for utilizing the internet, is regarded safe and allows them to express themselves creatively, according to research.

Some of them use digital media by experimenting with it or by rejecting gender identification and feminine conventions [24]. Women are also frequently depicted as more subordinate than men, underlining the glacial rate of change in gender-related societal systems [25]. The internet is typically used by female students for movie watching, academic research, and dating sites. Nevertheless, more male students use it to play video games online [26]. However, more research is required to determine whether or not students encounter this difficulty when attempting to solve problems with digital information to comprehend course material through the use of the internet [27].

2.   Methods

2.1   Research design

This study employed a quantitative method and is a survey. The term "survey" in this study refers to a technique for gathering data from high school students that focuses on learning facts about the usage of digital media as a learning aid

2.2   Research sample

This study included 645 high school students from Aceh province, including 358 females and 287 males. The convenience sample technique was employed in this study. This strategy, as mentioned by Sugiyono (2019), can be used to choose samples based on their availability to engage in research.

2.3   Data Collection Instrument

This study used a questionnaire as its primary data collection tool. Respondents are asked a series of questions to answer in order to complete the questionnaire. The following are the indicators included in this research questionnaire

Table 1. Digital literacy questionnaire indicators

No	Indicator
1	Impact of using digital media
2	Interaction with digital media

3	Learning Opportunities through digital media
4	Habitual experience of using digital media
5	Interest in learning using digital media

2.4   Data analysis technique

This research data was derived from questionnaire replies provided by respondents. Descriptive statistics are used to examine data qualities such as mean, standard deviation, and data percentage. After that, the data is evaluated using regression analysis to determine the causal relationship between variables. The Wilcoxon test was then used to see whether there was a significant difference in the average scores obtained for the two groups of variables.

3.   Results and Discussions

This study focused on five areas: (1) the impact of using digital media, (2) interaction with digital media, (3) learning opportunities through digital media, (4) habits of using digital media, and (5) interest in learning using digital media. The questionnaire sample triangulation method was used for field research analysis. Using random sampling procedures, 645 high school/equivalent pupils were sampled. Observations were carried out at 20 schools, namely SMA Syamtalira Bayu, SMAN 1 Gandapura, SMAN 1 Nisam, SMAN 2 Nisam, SMAN 7 Lhokseumawe, MAN Lhokseumawe city, MAS Ulumudin, SMAN 6 Lhokseumawe, MAS Darul Falah, MAS Jabal Nur, MAS Syamsuduha, SMAN 2 Lhokseumawe, SMAN 1 Kuta Makmur, SMAN 3 Lhokseumawe, SMAN 1 Peusangan, SMAN 1 Syamtalira Aron, SMAN 1 Sawang, SMAN 1 Muara Batu, SMAN 1 Lhokseumawe and SMAN Modal Bangsa Arun. Interviews were conducted with 28 chemistry teachers from these schools. Based on field studies, the results obtained are as presented in table 2.

Respondents included 287 (44.5%) male students and 358 (55.5%) female students ranging in age from less than 16 to more than 19 years, which represents the school age of Aceh high school students. The majority (43.3%) of all respondents spent more than 6 hours per day on the internet, while only a small percentage (5.7%) spent 1 - 3 hours per day. According to this research, the majority of pupils are quite familiar with digital media, particularly the internet. As a result, the questionnaire employed is pertinent to responders.

Table 2. Descriptive characteristics of respondents (N=645)

Variable	Category	Code	Amount	Percentage

Gender	Male		1	287	44.5%
	female		2	358	55.5%
Age	Under	16 years	1	205	31.8%
	17 years		2	272	42.2%
	18 years		3	133	20.6%
	Over	19 Years	4	35	5.4%
Class	Class X		1	199	30.9%
	Class XI		2	304	47.1%
	Class XII		3	142	22%
Length of Daily Internet Use	Less than 1 Hour		1	174	27%
	1-3 hours		2	37	5.7%
	4-6 hours		3	155	24%
	More than 6 hours		4	279	43.3%

Based on the responses, we may determine respondents' impressions of learning media, as well as indicators of the impact of utilizing digital media, interactions with digital media, learning opportunities through digital media, digital media habits, and interest in learning through digital media. The questionnaire items were declared valid with product moment person correlation validity based on the results of instrument validation. The estimated r value is compared to the r table to form the basis for decision-making in this test. Because the calculated r exceeds the table r of 0.105, the questionnaire item is declared valid. Validity can also be determined by comparing the Sig value. If the Sig (2- tailed) value is less than 0.05 and the Pearson correlation is positive, the questionnaire item is certified valid. Table 3 summarizes the instrument validation outcomes. According to this information, all question items were ruled valid.

Table 3. Sub-categories, codes, statement items, Pearson Correlation and Sig. (2-tailed)

Sub- Category	Code	Statement	Pearson Correlatio n	Sig. (2-tailed)
Impact of using digital media	A1	Using digital learning media will improve my performance	,840**	,000
	A2	Using digital learning media will increase my learning productivity	,858**	,000
	A3	Using digital learning media increases the effectiveness of my learning	,845**	,000
	A4	Using digital learning media helps me to achieve better grades	,853**	,000
Interaction with digital media,	B1	I understand how to use digital media in learning	,831**	,000
	B2	It is easy for me to use digital media in learning	,855**	,000

	B3	Using learning media makes learning clear and easy to understand	,854**	,000
Learning opportuniti es through digital media	C1	Learning media provides opportunities to experiment in learning	,845**	,000
	C2	Learning media provides the opportunity to control the learning process	,886**	,000
	C3	Learning Media provides	,862**	,000
	C4	Learning media provides the opportunity to link various learning materials	,873**	,000
	C5	Learning media provides opportunities to interact with other students	,853**	,000
Habit of using digital media	D1	I like using digital learning media	,824**	,000
	D2	I often use digital learning media	,650**	,000
	D3	I often learn using digital learning media rather than physical learning	,591**	,000
	D4	I use various types of digital learning media	,569**	,000
	E1	If I had a choice, I would choose to take lessons that use digital media	,868**	,000
	E2	If I had a choice, I would choose to use digital learning media in class	,873**	,000
	E3	I am enthusiastic about using learning media in class	,866**	,000

Table 4 shows the Cronbach's α values based on 5 sub-categories, namely the impact of using digital media, interaction with digital media, opportunities to learn through digital media, habits of using digital media and interest in learning using digital media. The smallest Cronbach's α value, namely 0.833, is in the sub-category of habits using digital media, and the largest is 0.956 in the sub-category of learning opportunities through digital media. Cronbach's α coefficient in all sub-categories was 0.973 indicating relatively high internal consistency. The items in the questionnaire are nominal, ordinal and scale.

Table 4. Sub-categories, codes, statement items, Pearson Correlation and Sig. (2-tailed)

Sub-Category	Code	Number of Items	Cronbach's α
Impact of using digital media	A	4	0.951
Interaction with digital media,	B	3	0.930
Learning opportunities through digital media,	C	5	0.956
Habits of using digital media	D	4	0.833
Interest in learning using digital media	E	3	0.951
All sub-categories		19	0.973

According to student perceptions, the usage of igital media improves learning. More than 46% of ose polled agreed that using digital media can boost rning performance and productivity. As many as 47% respondents said that using digital media to study uld improve learning effectiveness, and 48.5% said at using digital media helped them acquire good arks. According to this evidence, using digital media an improve the quality of respondents' learning.

In terms of interactions with digital media, more an 40% of respondents said they had no trouble using igital media in learning and thought it may help them understand learning more readily. This finding is pected given that most respondents are accustomed to ending more than 6 hours each day on digital gadgets d the internet. Because they are accustomed to using digital media in their daily lives, these behaviors assist respondents in comprehending its use. Aside from simplicity of use, more than 46% of respondents felt that digital media can provide chances r students to experiment with learning, regulate learning experience what is being studied, relate various learning resources, and engage with other dents while learning. Respondents believe that the e of digital media can provide considerable learning possibilities because of these opportunities. Despite the benefits, research appears that respondents are not yet used to using digital media in learning. According to the survey results, just 38.4% of respondents preferred the use of digital media in learning. Aside from that, the majority of respondents said they don't utilize digital media for learning very often, but it doesn't mean they never do. As a result, just 15% of respondents use digital learning media more frequently than physical learning media, and 17% use multiple digital learning medium rather frequently. Respondents, on the other hand, are interested in adopting digital media for learning. This is demonstrated by 32.4% agreeing and 28.4% strongly agreeing to choose to participate in learning using digital media, 32.7% agreeing and 31% strongly agreeing to use learning media in class, and 28.1% agreeing and 17.6% strongly agreeing to be enthusiastic about using learning media in class.
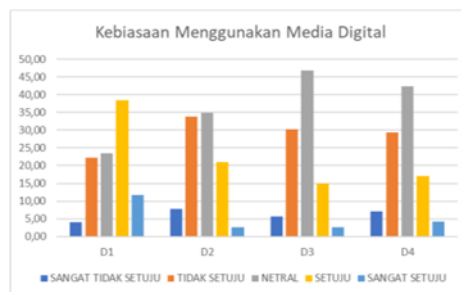

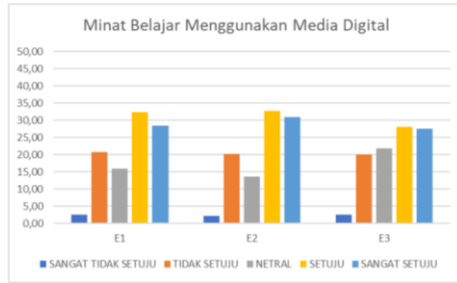**Fig 1.** students' perceptions of learning opportunities through digital media

Fig 2. students' perceptions of their habits of using digital media
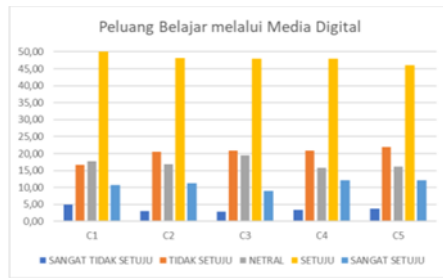

Fig 3. students' perceptions of their interest in learning using digital media

In terms of the effect of using digital media, as many as 60% of students believe it can boost performance, productivity, and learning effectiveness, and help them get higher grades. This reaction is reinforced by the findings of teacher interviews, which show that digital media can shorten learning time, provide a more realistic picture, and help students avoid misconceptions. In terms of interaction with digital media, more than 53% of students understand how to use digital media in learning and find it simple to utilize digital media, implying that students' perceptions of digital media have a high potential for enhancing learning efficiency.
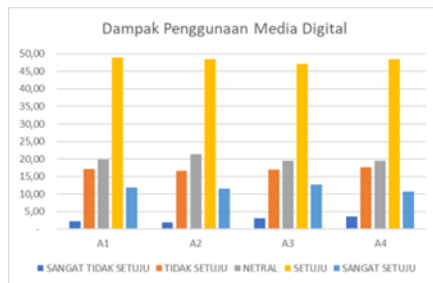
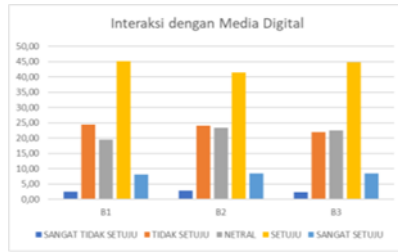**Fig 4.** student perceptions of the impact of using digital media

Fig 5. Student perceptions of digital media interactions

The inclusion of respondents with gender variations between men and women is aimed to determine whether gender differences influence perceptions of media use in learning. Based on the Man Whitney test in Table 4.7. Asymp value, the hypothesis proposed in data collection is Ha: there is a difference in the perception of the use of learning media between men and women, and Ho: there is no difference in the perception of the use of learning media between men and women. The Sig. (2- tailed) is 0.049, which is less than the probability of 0.05, indicating that Ha is accepted. As a result, it is possible to conclude that men and women perceive learning media differently.

Table 5. Man Whitney test

Test statistics	Total
Mann-Whitney U	46741,000
Wilcoxon W	111002,000
Z	-1,971
Asymp. Sig. (2-tailed)	,049

4.   Conclusions

Most students have extensive experience with digital media in their daily lives, particularly the Internet. This study has demonstrated how students' daily lives now involve digital media. According to students' assessments of the benefits of using digital learning resources, doing so can enhance productivity, performance, and learning efficacy in addition to helping students get higher marks. To now, one feature of students' contact with digital media has been their understanding of how to utilize it for learning and their ease of use, which increases the likelihood that students' proficiency with digital media will lead to increased learning efficiency.

There are considerable discrepancies in female and male pupils' digital media usage patterns. Female students are more likely to use the internet for academic purposes such as

research and watching movies, whereas male students are more likely to use the internet to play online games.

This result demonstrates the need for a comprehensive educational strategy to build students' digital literacy in Aceh, taking into account the disparities in the ways that male and female students utilize digital media.

Authors Contributions

To enhance the use of learning media and raise students' awareness of digital literacy—which includes knowing how to use technology sensibly and healthily—more study on the topic is crucial. Gender disparities in technology use patterns must be taken into consideration when designing digital literacy training and education programs..

Acknowledgments

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