.

The Effect of Critical Thinking Skills & Digital Literacy on National Insight

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ABSTRACT

This study aims to determine the effect of critical thinking skills and digital literacy on national insight. The method used in this study is a quantitative method by testing the validity and reliability. The data collection method in this study used a questionnaire distribution method to rural youth in Sidoarjo. The results of this study are the relationship between critical thinking and nationalism in Sidoarjo rural youth showing a path or original sample value of 0.594 and showing a positive relationship, the t-count value is 4.773 higher than the P value of 1.96 and lower than the Sig value of 0.004, which is less than 0.05, indicating that critical thinking has a positive value and a significant effect on the national insight of rural youth. Whereas in the relationship between digital literacy and national insight, the path value (original sample) is 0.208, reflecting a positive relationship, with a t-count value of 4.773 higher than t-table 1.96 and lower than the Sig value. 0.00 which is less than 0.05, indicating a positive and statistically significant relationship between digital literacy and national insight among young people.

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1. INTRODUCTION

The rapid development of the times requires humans to have high adaptability. This is based on the faster and more widespread technologies that facilitate human life. If humans cannot take advantage of these changes, they will be far behind in the course of the world. The wave of development of the times brings positive and negative influences [1]. In a positive aspect, the development of the times will bring humans to a higher level which will produce new humans who have many abilities. In a negative aspect, the development of the era that brings all the conveniences for humans can raise the potential for humans to become lazy in trying. The negative side can be seen in the many people who easily believe in hoax news because they are lazy to find out the truth of the news in circulation. As a result, the inculcation of national insight values will weaken, in the worst conditions people will start to believe in radicalism.

As a barrier so that the notion of radicalism does not spread, Indonesia must improve to protect its young generation from following the trend of radicalism. Instilling national insight must be done from a young age [2]. Because, young people will absorb all the information that comes to them, this information is then brought to adulthood. Today's cultivation of nationalism is aimed at producing a younger generation that is not only superior in technology but also upholds the values of Indonesian nationalism [3].

Explains that in a country, national insight plays a role in determining the use of geographical, social and cultural conditions, history, politics, economy, security, and national defense for the benefit of the state [4]. Apart from cultivating national insight, one of the important things to teach young people is the ability to think critically. Critical thinking, a rational and open higher-order thinking mode in human cognition, is becoming imperative to success in modern life. Therefore, cultivating students' critical thinking has become a common goal of education reform worldwide [5]. Critical thinking is commonly considered one of the higher-order abilities of thinking [6]. The ability to think critically is a fundamental ability for someone to be able to

make decisions. The ability to think critically will make a person question the details of a problem which is then processed and analyzed in the brain to be able to determine the truth and solutions to problems that occur [7]. With critical thinking being a part of education, it can be said that students become more successful academically and more helpful, positive, and sensitive socially [8].

Someone who has the ability to think critically must be accompanied by broad insight. To produce a balance of thought, the breadth of information possessed will be useful for a person's truth in every action. Knowledge does not only lie in one container because along with the development of technology, especially information technology, but it will also make it easier for someone to access the various information needed. In the world of education, for example, there are a lot of uses of digital media for learning [9]. Learning that is done digitally has a positive influence on students in understanding the material presented [10] revealed that digital literacy can be interpreted as a person's ability to understand and utilize all forms of information available in digital sources. The concept of digital literacy was derived by Gilster (1997) during the internet revolution to denote the cognitive ability to understand and use multimodal information [11]. Digital literacy is viewed by many governments as an educational priority area, resulting in policies and curricula aimed at developing students' digital literacy skills [12]. The development of digital competencies is also possible with educational activities that increase the level of digital literacy [13]. This statement reveals how important digital literacy is in everyday life. Because, in terms of nationalism, digital literacy plays a role in spreading nationalism to the public.

2. METHOD

This research uses quantitative research methods. The quantitative method is a method for testing hypotheses from data collected by making research instruments with results in the form of numbers. The source of the data in this study is the results of answers from questionnaires that have been distributed to youth in the Sidoarjo district.

The method of collecting data contained in this study is the method of distributing questionnaires. The questionnaire method is a data collection method that is carried out by presenting questions to respondents. The data analysis technique in this study used the SEM-PLS analysis technique with the aim of knowing the relationship between variables.

This study tested the results of the validity and reliability of digital literacy constructs. Validity test is a testing technique to determine the validity or invalidity of a research instrument contained in the results of a questionnaire. While the reliability test is a test conducted to determine whether a questionnaire is reliable or not in the data collection that has been carried out.

3. RESULTS AND DISCUSSION

To assess the relationship between digital literacy and critical thinking on students' national insight, there are two types of analysis consisting of two models: the outer model on the evaluation of the measurement model and the inner model on the structural model. Prior to testing, construct validity and indicator reliability for each construct were examined. Once all indicators are deemed valid and reliable and all assumptions are met, the test can proceed.

Figure 1 display the results of the SEM-PLS measurement model construct analysis test that can be used if the measurement model has passed the construct validity and reliability tests. Checking the outer loading (factor loading) and Average Variance Extracted (AVE) values of each indicator in the construct can serve as a construct validity test. In validity testing, an indicator is considered valid if it has an external loading value and Average Variance Extracted (AVE) above 0.5, and construction is considered reliable if the Contract Reliability (Composite Reliability) and Cronbach's Alpha are both above 0.7.
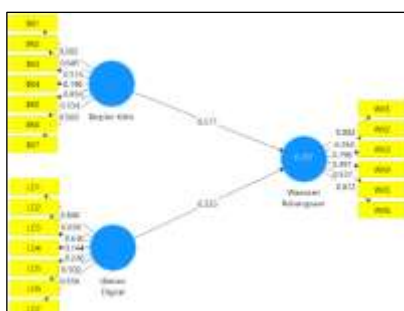

Figure 1. The results of the model construct analysis test

Figure 1 shows that not all indicators have a loading factor value above 0.5. Two indicators in these three issues have loading factor values below 0.5, such as easy communication (CT 4), defending opinions (CT 6), selecting and processing information (DL 4), sharing information constructively (DL 5), prioritizing discussion (NI 2), and easy to communicate (NI 4).

Testing indicators is an initial construct analysis test to assess the validity of variables before conducting reliability tests. Table 1 displays the results of the analysis of the Digital Literacy variable indicators:

Table 1. Results of Testing the Validity and Reliability of the Digital Literacy Construct

Variable	Indicator	Validity	AVE	CR	CA	Statement
Digital Literacy	Understanding and knowing the use of social media (DL1)	0.848	Valid	0.512	0.791	0.754	Valid and reliable
	Finding national insight information easily (DL2)	0.638	Valid				
	Selecting and confirming information (DL3)	0.630	Valid				
	selecting and processing information (DL4)	0.144	cancelled				
	share information constructively (DL5)	0.226	cancelled				
	Be careful about spreading information (DL6)	0.502	Valid				
	prevent inaccurate information or hoaxes (DL7)	0.556	Valid				

Table 1 shows that the DL 4 and DL 5 indicators of the digital literacy variable have an outer loading value lower than 0.5, which can be considered invalid; therefore, they should be removed from the measurement model despite the fact that the AVE value is higher than 0.5. In addition, the reliability test results with CR and CA values above 0.7 can be said to be reliable.

Table 2. Test Results for the Validity and Reliability of Critical Thinking Constructs

Variable	Indicator	Validity	AVE	CR	CA	Statement
Critical thinking	Able to identify (CT1)	0,582	Valid	0.504	0.752	0.701	Valid and reliable
	Easy to make decisions (CT2)	0,645	Valid				

Variable	Indicator		Validity	AVE	CR	CA	Statement
	Able to describe problems based on data (CT3)		0,516	Valid			
	Easy to communicate (CT4)		0,190	cancelled			
	Able to identify problems (CT5)		0,854	Valid			
	Able to defend opinion (CT6)		0,354	cancelled			
	Decision made (CT7)		0,569	Valid			

In addition, the measurement of validity analysis tests is based on critical thinking indicators. Table 2 shows that there are five indicators of critical thinking variables that must be removed in the validity measurement test results: CT4, and CT6. Indication has an outer loading value of 0.5; therefore, the four invalid indicators must be removed from the construct measurement. The findings of the reliability test show that Composite Reliability (CR) and Cronbach's Alpha (CA) of 0.7 are reliable.

Table 3. Results of Testing the Validity and Reliability of the National Insight Construct

Variable	Indicator		Validity	AVE	CR	CA	Statement
Digital Literacy	Have a tolerant attitude (DL1)		0,802	Valid	0.591	0.850	0.761	Valid and reliable
	Prioritizing dialogue (DL2)		0,264	Cancelled				
	Easy to socialize and collaborate (DL3)		0,798	Valid				
	Easy to communicate (DL4)		0,491	Cancelled				
	Sharing constructive information (DL5)		0,537	Valid				
	Able to defend opinion (DL6)		0,872	Valid				

National Insight is the next latent variable whose validity must be assessed. Based on table 3 of the results of the Smart PLS analysis test for Competency variables, it can be said that competency indicators are valid and reliable. However, there are two indicators that should be removed as invalid: WK2 and WK4. The indicator should be removed from the measurement model because it does not meet the validity standard of 0.5, even though its AVE, Composite Reliability (CR), and Cronbach's Alpha (CA) values are all 0.7.

After analyzing the validity and reliability of the construct with the necessary assumptions, the test proceeds to the goodness of fit test or structural model. According to [14], model fit tests (fit for purpose tests)

can be classified as follows: a) GoF 0.5 indicates the model classification as Weak; b) 0.5 GoF 0.75 indicates the classification of the model as Moderate; and c) GoF > 0.75 indicates the model classification as Good.

After removing invalid indications or those that did not meet the criteria/requirements, the model suitability test yielded an R2 of 0.961%. The community averages for motivation and critical thinking were 0.7806 and 0.8041, respectively.

Calculation results for goodness of fit (GoF):

$$GoF = \sqrt{Com \; x \; R^2}$$
$$= \sqrt{0.792 \; x \; 0.691}$$
$$= 0.782$$

The calculation results show that the GoF value of 0.782 can be classified as Good; Therefore, the following Goodness of fit test model is obtained.

Figure 2. Goodness of fit test
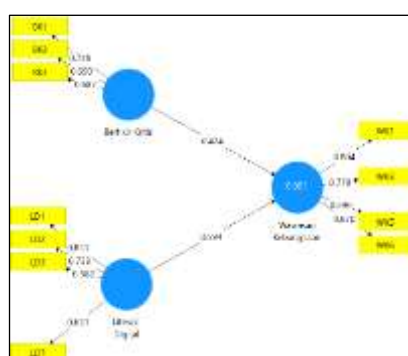
The Fornell-Larcker Criteria for Discriminant Validity is applied to guarantee that the results of each concept of each construct or latent variable are different from other variables. As shown in Table 3, the results of the discriminant validity test show that the loading value for the desired construct is greater than the loading value for the other constructs. Consequently, it is possible to conclude that all constructs and latent variables have high discriminant validity. The calculation results show that the GoF value of 0.782 can be classified as Good; Therefore, the following Goodness of fit test model is obtained:

Table 4 Discriminant Validity

	Critical thinking	National outlook	Digital literacy
Critical thinking	0.947		
National outlook	0.710	0.978	
Digital literacy	0.836	0,753	0.848

Based on the results of statistical analysis tests using SEM-PLS, the R-Square (reliability indicator) of competence has a positive value of 0.691, indicating that critical thinking skills and digital literacy have a positive and substantial effect on nationalism. Table 4 describes the relationship between exogenous and endogenous variables in the construct model:

Table 5. Test Results between exogenous and endogenous variables

	Original sample (O)	Average samples (M)	Standard deviation (STDEV)	T Statistics (O/STDEV)	Score (P)
Critical thinking → national insight	0.424	0.780	0.042	18.533	**0.004**
Digital literacy → national insight	0.594	0.209	0.044	4.773	**0.000**

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The findings of the test of the relationship between the hypothesized model variables indicate a good fit of the model; Therefore, this model can be used to further examine the relationship between critical thinking skills and digital literacy on the national insights of Sidoarjo village youth.

By paying attention to table 4.19, the following findings are obtained regarding the relationship between exogenous variables and endogenous variables:

1. The relationship between critical thinking and national insight

The value of the path (original sample) critical thinking towards nationalism is 0.594, indicating a positive relationship, with a t-count value of 4,773 higher than the P value of 1.96 and lower than the Sig value. of 0.004, which is less than 0.05, indicating that critical thinking has a positive value and a significant effect on the national insight of rural youth. This finding is in line with [15] stating that there is a correlation between critical thinking and national insight.

2. The relationship between digital literacy and national insight

The path value (original sample) of digital literacy towards nationalism is 0.208, reflecting a positive relationship, with a t-count value of 4.773 higher than t-table 1.96 and lower than the Sig value. 0.00 which is less than 0.05, indicating a positive and statistically significant relationship between digital literacy and national insight among young people which is in accordance with the findings found by [2]

4. CONCLUSION

Based on the explanation of the results and discussion above, it can be concluded that in the relationship between critical thinking and national insight in Sidoarjo rural youth, it shows a path value or original sample of 0.594 and shows a positive relationship, the t-count value is 4.773 higher than the P value of 1.96 and lower than the value of Sig. of 0.004, which is less than 0.05, indicating that critical thinking has a positive value and a significant effect on the national insight of rural youth. Whereas in the relationship between digital literacy and national insight, the path value (original sample) is 0.208, reflecting a positive relationship, with a t-count value of 4.773 higher than t-table 1.96 and lower than the Sig value. 0.00 which is less than 0.05, indicating a positive and statistically significant relationship between digital literacy and national insight among young people.

Thus, it can be seen that critical thinking and digital literacy have a significant influence on nationalism. This influence can indicate that national insight will be embedded in the nation's youth if youths have a high level of literacy, in this case digital literacy and critical thinking. Both of these abilities are very important for national life in the future, because the nation's younger generation are good at technology, they will also be good at national insights.

Based on the results of the research that has been done, the advice that can be given is to strengthen the national insight to the younger generation of the Indonesian nation, it should be strengthened in instilling national values. In addition, there is a need to increase in-depth socialization regarding national insight to all corners of Indonesia so that the nation's young generation throughout Indonesia can understand the values of nationalism in Indonesia.

REFERENCES

[1]   M. R. Saidi, S. Supriyono, and A. R. Al-Atok, "Pengaruh Literasi Digital dan Literasi Kewarganegaraan terhadap Tingkat Ketahanan Pribadi Siswa Sekolah Menengah Kejuruan," *Jurnal Ilmiah Pendidikan Pancasila dan Kewarganegaraan*, vol. 7, no. 1, pp. 119–128, Mar. 2022, doi: 10.17977/UM019V7I1P119-128.

[2]   F. Nurfauziyanti, Damanhuri, and F. A. Bahrudin, "PENGARUH LITERASI DIGITAL TERHADAP PERKEMBANGAN WAWASAN KEBANGSAAN MAHASISWA," *Jurnal Pendidikan Kewarganegaraan Undiksha*, vol. 10, no. 3, pp. 54–66, Sep. 2022, doi: 10.23887/JPKU.V10I3.51067.

[3]   A. Jimly, "Mahkamah Konstitusi Republik Indonesia Ideologi, Pnacasila, dan Konstitusi," *Ideologi, Pancasila, Dan Konstitusi*, no. 1, pp. 2–6, 2003.

[4]   P. R. Indonesia, "Undang-undang Sistem Pendidikan Nasional No. 20 tahun 2003," *Ekombis Sains: Jurnal Ekonomi, Keuangan dan Bisnis*, pp. 39–45, 2003.

[5]   W. Yanlan, Y. Ruoqing, L. Qi, and B. Hualin, "Views of Chinese middle school chemistry teachers on critical thinking," *Chemistry Education Research and Practice*, no. 1, 2023.

[6]   D. N. Rositawati, "KAJIAN BERPIKIR KRITIS PADA METODE INKUIRI," *Prosiding SNFA (Seminar Nasional Fisika dan Aplikasinya)*, vol. 3, no. 0, pp. 74–84, Feb. 2019, doi: 10.20961/PROSIDINGSNFA.V3I0.28514.

[7]   M. M. Fatimah, A. Abdulkarim, and D. Iswandi, "Meningkatkan Pemahaman Wawasan Kebangsaan Peserta Didik melalui Literasi Digital," *JURNAL CIVICUS*, vol. 20, no. 1, pp. 31–39, Jun. 2020, doi: 10.17509/CIVICUS.V20I1.16327.

[8]   H. TEMEL, "The Effect of Critical Thinking Course Carry Out with Distance Education on Critical Thinking Skills and Dispositions," *International Journal of Psychology and Educational Studies*, vol. 9, no. 3, pp. 792–808, Jul. 2022, doi: 10.52380/ijpes.2022.9.3.894.

[9]   F. Fuad, "ISLAM DAN IDEOLOGI PANCASILA, SEBUAH DIALEKTIKA," *Sebuah Dialektika Lex Jurnalica*, vol. 9, 2012.

[10]   R. S. Kusuma and N. Azizah, "Melawan Radikalisme melalui Website," *Jurnal ASPIKOM*, vol. 3, no. 5, pp. 943–957, Sep. 2018, doi: 10.24329/ASPIKOM.V3I5.267.

[11]   T. Mayisela, "A Practice-Based Approach to Developing First-Year Higher Education Students' Digital Literacy," *International Journal of Mobile and Blended Learning*, vol. 14, no. 3, pp. 1–14, Nov. 2022, doi: 10.4018/ijmbl.314582.

[12]   C. Weninger, "Skill versus Social Practice? Some Challenges in Teaching Digital Literacy in the University Classroom," *Wiley Online Library*, 2022.

[13]   F. Gökdaş and A. Çam, "Examination of Digital Literacy Levels of Science Teachers in the Distance Education Process," *Educational Policy Analysis and Strategic Research*, vol. 17, no. 2, pp. 208–224, Jun. 2022, doi: 10.29329/epasr.2022.442.9.

[14]   J. F. Hair, G. T. Hult, C. Ringle, and M. Sarstedt, "A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM) - Joseph F. Hair, Jr., G. Tomas M. Hult, Christian Ringle, Marko Sarstedt," *Sage*, p. 374, 2017.

[15]   Y. Irhasyuarna, M. Kusasi, H. Fajeriadi, W. R. Aulia, S. Nikmah, and Z. Rahili, "Integrated science teaching materials with local wisdom insights to improve students' critical thinking ability," *Jurnal Biologi-Inovasi Pendidikan*, vol. 4, no. 3, pp. 328–334, Oct. 2022, doi: 10.20527/bino.v4i3.14148.

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