

THE INFLUENCE OF DIGITAL CITIZENSHIP AND LEARNING OUTCOMES ON NEGATIVE ONLINE BEHAVIOR IN JUNIOR HIGH SCHOOLS

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ABSTRACT

The purpose of this study is to analyse the effect of digital citizenship and learning outcomes on negative online cyberbullying behavior among junior high school students. Cyberbullying behavior has become one of the crucial problems along with the increasing use of digital technology among adolescents. Digital citizenship is a concept that teaches responsibility and ethics in the digital world, which is expected to reduce negative online behavior. In addition, learning outcomes are also thought to have a contribution to such behavior, where students with low academic achievement tend to be more prone to engage in negative online behavior as a form of compensation. This study is quantitative research with a survey approach. The sample in this research is SMP Negeri Y in Bali. Data were collected through questionnaires. Data analysis was conducted using multiple regression techniques to see the influence between digital citizenship variables and learning outcomes on online negative behavior. The results showed that digital citizenship and learning outcomes affect cyberbullying behavior. Integrating digital citizenship education in the school curriculum is an effort to improve student academic achievement and can be an important strategy in minimizing negative online behavior among adolescents.

Keywords: digital citizenship, learning outcomes, negative online behavior, cyberbullying, survey method

1. PREFACE

In the 21st century we are entering the era of the industrial revolution 4.0 where science and technology are developing very rapidly. The rapid progress has affected various aspects of people's lives, one of which is the ease of access to information and communication. This is in accordance with the opinion of Castells (2010) who states that advances in information and communication technology enable global interaction without barriers of space and time.

The internet is one of the results of the development of communication and information technology. The world community uses the internet as a space to socialize, communicate, play, and learn. This is in accordance with Saiful (2019), which states that the presence of the internet and social media seems to open the gates to interact, communicate, and share information between countries around the world. The Indonesian Internet Service Providers Association, or APJII as we often know it, stated that the number of internet users in Indonesia in 2024 will reach 221.5 million people out of a total population of 278.7 million people (Asosiasi Penyelenggara Jasa Internet Indonesia, 2024). This is a 50% increase when compared to 2020 data. According to the Digital 2020 report from We Are Social and Hootsuite by Kemp (2020), around 175.4 million Indonesians have used the internet, and 160 million of them are active social network users.

The use of the internet has both positive and negative impacts. The positive impact of using the internet is the ease of quick access to various sources of information, increased connectivity, and

collaboration. However, on the contrary, it can also have a negative impact, if the internet is not used wisely, it can have negative impacts such as the spread of hoaxes, cybercrime, and cyberbullying (Fuchs, 2017). A survey conducted by UNICEF U-Report 2021 also found that 45% of 2,777 young people aged 14-21 experienced cyberbullying (Pinta, 2021). The results of research conducted by Al-Rahmi et al. (2019) stated that more than 50% of university students reported having experienced cyberbullying, online harassment, and stalking.

Cyberbullying is a form of bullying behavior that is carried out digitally using electronic devices or digital technology (<https://www.unicef.org>). According to Smith et al. (2008) Cyberbullying is a form of aggressive and deliberate action taken or issued by an individual or a group of people, using electronic contact forms repeatedly and over time against victims who cannot easily defend themselves. Cyberbullying is bullying in the cyber world that is offensive or disruptive in nature (Mccosker et al., 2016). According to Hinduja & Patchin (2008) and Kowalski and Limber (2007), Cyberbullying is an aggressive behavior that is carried out repeatedly as a form of bullying behavior against someone using electronic platforms including text, instant messaging, email, chat rooms, websites, online games, and social networking sites. One of the effects of cyberbullying victimization is the emotional health of adolescents (Reid et al., 2021).

One way to overcome the rampant cases of cyberbullying that occur in Indonesia is to provide knowledge and understanding to parents or teachers regarding the dangers of bullying (Sinaga, 2018). This is supported by the statements of Ellis and Shute (2007); Rigby (2005); and Sinaga (2018) which state that students who have a deep understanding of the negative effects of bullying will tend to stay away from this behavior.

One way to prevent cyberbullying is by instilling the concept of digital citizenship. It is a form of responsible and ethical behavior in the digital world (Ribble, 2011). Therefore, the application of digital citizenship is very important to be able to prevent cyberbullying behavior. This is confirmed by the results of research by Jones and Mitchell (2016), MacWilliams et al. (1977), and Zhong and Liu (2021) which states that through teaching digital citizenship will be able to prevent negative online behavior (cyberbullying). Kaluarachchi et al. (2020); Patchin and Hinduja (2010) also revealed the same thing, namely mastery of digital literacy based on awareness of digital ethics and responsibility will be able to reduce involvement in cyberbullying.

According to the European Commission: Directorate-General for Education (2015), learning outcomes are statements about what individuals know, understand, and can do as a result of the learning process that describes the level of individual qualifications. According to Popenici and Millar (2015), learning outcomes are the final report after completing the learning process. Students' achievement of their learning outcomes is a reflection of their knowledge, understanding, intellectual skills, and practical skills (Arifin et al., 2022; Dodridge & Kassinopoulos, 2003). According to Anderson and Krathwohl (2001), The soaring outcomes of student learning reflects good achievement in the cognitive, affective, and psychomotor domains. It shows that students not only have good knowledge but also positive attitudes and the skills needed to interact with others constructively. Thus, students with high learning outcomes tend to have better cognitive abilities to understand the social and moral impacts of cyberbullying, as well as affective abilities to respond to situations with empathy and a sense of responsibility. Rigby (2005) explains that students with good cognitive abilities are less likely to engage in bullying behavior. Caravita and Salmivalli (2009); Jolliffe and Farrington (2006) explain that

affective abilities, especially high empathy, will object to being involved in bullying and try to cease it.

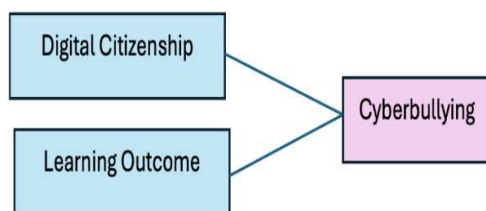
Based on the above background, the objectives in this study are: 1) Is there an effect of digital citizenship behavior on negative online behavior (cyberbullying)?; 2) Is there an effect of learning outcomes on negative online behavior (cyberbullying)?.

2. RESEARCH METHOD

This research is quantitative research with correlational research type. Correlational research is research with problem characteristics in the form of a correlational relationship between two or more variables (Sugiyono, 2016). Meanwhile, according to Arikunto (2013) correlational research aims to find whether or not there is a relationship and how close the relationship is and whether or not the relationship is meaningful. The research design is as follows.

Figure 1

Research design



The population in this study were all students from SMP Negeri Y in Denpasar city, Bali, they were 923 students. In determining the number of samples used in the study, the researcher used the Krejcie table Murnaka (2018), based on a 95% confidence level in the population. The sample in this study amounted to 135 students. with a significance level of 5%. The technique used in sampling is proportional random sampling. According to Creswell (2007) probability sampling is a sampling technique that provides equal opportunities for each member of the population to be selected as a member of the sample. To determine the size of the sample in each school is done proportionally so that the sample taken is more proportional.

Research variables are what is determined by the researcher and then used as a point of attention in the research to be carried out to study so that information is obtained which will be concluded (Sugiyono, 2015). There are three variables in this study, namely digital citizenship, cyberbullying, and learning outcomes. The scoring guidelines used in this study use a Likert scale using four alternative answers. Cyberbullying Suspect Scoring Guidelines : Never = 3; Once = 2; Several times a month = 1; Every day of a month = 0. Digital Citizenship Scoring Guidelines : Strongly agree = 3; Agree = 2; Disagree = 1; Strongly Disagree = 0

Student learning outcomes used are taken from three domains, namely cognitive (knowledge), affective (attitude), and psychomotor (skills). The combination of the three domains provides a comprehensive picture of student learning outcomes. The high achievement of scores in each domain indicates that students not only understand the material intellectually, but also internalize positive values and have good practical skills. The soaring of learning outcomes can influence student behavior, including in preventing involvement in negative behavior such as bullying.

The data analysis technique used to describe the correlation between the Digital Citizenship variable, the cyberbullying variable, and the student learning outcomes variable consists of normality test, linear regression test, hypothesis testing using product moment correlation.

3. RESULT AND DISCUSSION

Research results

This study aims to determine the relationship between digital citizenship variables (X1) and student learning outcomes variables (X2) on negative online behavior (cyberbullying) (Y). From the results of the data collection process carried out by researchers, by taking a sample of 135 student respondents at one of the State Junior High Schools (SMP) in the city of Bali. Of the 135 respondents, there were 3 outliers (did not fill in the data completely) and there were 132 respondents who filled in the data completely. Of the 132 student respondents, there were 46 males and 86 females who filled in the data completely. The following are the demographics of the study as follows. In this study, the number of female respondents was more than men, the results of internet usage per day both for school activities and entertainment obtained the following data.

Table 1

Demographics of Internet Usage Research Respondents Per Day in Review of Their Gender

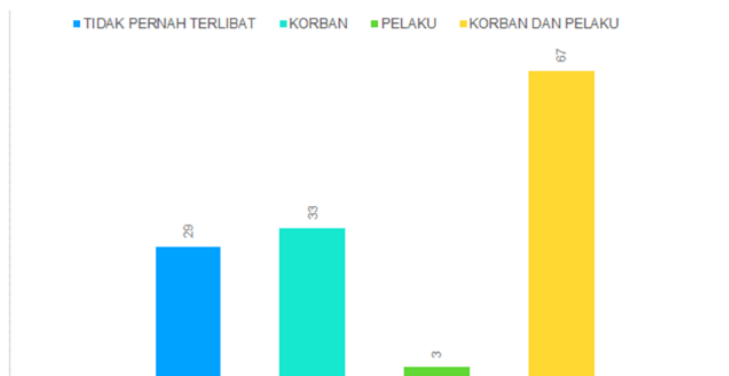
Grade	Gender										Total
	Male					Female					
	½ - 1 Hours	1 - 2 Hours	2 - 3 Hours	2 - 3 Hours	> 4 Hours	½ - 1 Hours	1 - 2 Hours	2 - 3 Hours	2 - 3 Hours	> 4 Hours	
Grade 7 JHS	2	4	3	4	3	2	2	5	1	28	54
Grade 8 JHS	1	0	3	2	8	1	0	2	3	18	38
Grade 9 JHS	0	0	1	4	11	1	0	4	2	17	40
Total	3	4	7	10	22	4	2	11	6	63	132

Based on table 1, there are 64.4% of students who use the internet per day for more than 4 hours. Using the internet for a long duration (more than 4 hours) opens up opportunities for teenagers to be able to interact with each other, get information, and socialize virtually. On the other hand, excessive internet use can also increase the risk of engaging in negative behaviors such as cyberbullying (Patchin, J. W., & Hinduja, 2010). Because long and repeated interactions in cyberspace can cause or increase the possibility of conflict between them (students / adolescents), negative comments, or acts of intimidation from other users. According to Hinduja and Patchin (2014), the soaring intensity of social media use by adolescents makes them more vulnerable to becoming victims of bullying, due to the high level of involvement in online communities that are not always closely monitored. In addition, Kowalski and Limber (2013) also mentioned that perpetrators and victims of cyberbullying often have a higher intensity of internet use compared to adolescents who are not involved in bullying behavior. Table 1 shows that women dominate internet usage per day for more than 4 hours. And also shows that long-term internet usage is used to access social media. Research by Zhong and Liu (2021) shows that adolescent girls are more often involved in social activities on the internet, which makes them more vulnerable to psychological impacts such as anxiety, depression, and others due to content on social media.

From the results of data processing, it shows that there are 29 respondents who have never been involved in cyberbullying (either as perpetrators or victims), 33 people are involved as perpetrators of cyberbullying, 3 people are involved as victims of cyberbullying, and 67 people are involved as victims of cyberbullying as well as perpetrators. A lot of people who are victims of cyberbullying then transform into perpetrators of cyberbullying.

Figure 2

Demographics of Research Respondents on the Dimensions of Cyberbullying Perpetrators and Victims



The Relationship Between Digital Citizenship Variables and Student Learning Outcomes Variables to Negative Online Behavior (Cyberbullying).

To test the hypothesis, previously the basic assumption test was first carried out, namely the normality test. This test is intended to determine whether the data distribution is normally distributed or not. The following are the results of the research data normality test.

Table 2

Basic Assumptions Test - Normality Test

		Learning Outcome	Digital Citizenship	Cyberbullying
N		132	132	132
Normal Parameters ^{a,b}	Mean	92.4940	103.9848	1.4015
	Std. Deviation	2.30351	11.51434	1.88550
Most Extreme Differences	Absolute	.095	.084	.249
	Positive	.095	.084	.249
	Negative	-.089	-.050	-.229
Test Statistic		.095	.084	.249
Asymp. Sig._(2-tailed)		.066 ^c	.052 ^c	.000 ^c

From table 2, it can be seen that the Asymp. Sig. (2-tailed) for the Learning Outcomes variable (X1) = 0.066 > 0.05, this means that the learning outcomes data has normal distribution. The value of the digital citizenship variable = 0.052 > 0.05, this means that the digital citizenship data has a normal distribution. For the value of Asymp. Sig. (2-tailed) value for the cyberbullying variable (as the Perpetrator) = 0.000 < 0.05, meaning that the cyberbullying data is not normally distributed.

To determine whether there is a relationship between variables, a correlation test is conducted. To determine whether a relationship exists between variables, a correlation test is conducted. The

correlation test measures the strength of the relationship between two or more distinct variables, expressed through the correlation coefficient. The correlation coefficient reflects the degree of linear association between the variables (Sugiyono, 2015). The following are the results of the correlation test between the digital citizenship variable and the student learning outcomes variable on negative online behavior (cyberbullying).

From the results of data analysis using SPSS it shows that above, it can be seen that the value of Asy.Sig. (2-tailed) between the Learning Outcome Variable and the Digital Citizenship Variable is $0.021 < 0.05$, this illustrates that there is a relationship between the Learning Outcome Variable and the Digital Citizenship Variable. The value of Asy.Sig. (2-tailed) between the Learning Outcome Variable and the Digital Cyberbullying Variable is $0.067 > 0.05$, this illustrates that there is a relationship between the Learning Outcome Variable and Digital Cyberbullying but not too significant. The value of Asy.Sig. (2-tailed) between the Digital Citizenship Variable and the Cyberbullying Variable is $0.819 > 0.05$, this illustrates that there is a relationship between the Digital Citizenship and Cyberbullying Variables but not too significant.

To determine the size of the relationship, the linear regression test is used. The functional relationship consists of two types of variables, namely the independent variable or predictor variable (dependent) generally expressed by X and the dependent variable or response variable (dependent) expressed by Y.

From the correlation test results obtained the value of Asy.Sig. (2-tailed) = $0.338 > 0.05$. This shows that there is no significant influence between the three variables, namely the Digital Citizenship Variable and the Student Learning Outcomes Variable on Negative Online Behavior (Cyberbullying). From the correlation test, show that the R Square value = $0.017 = 1.7\%$. This shows that the influence of the Digital Citizenship Variable and the Student Learning Outcomes Variable on Negative Online Behavior (Cyberbullying) is 1.7%.

The contribution of the influence of the Digital Citizenship Variable (X1) and the Student Learning Outcome Variable (X2) on Negative Online Behavior (Cyberbullying) is as follows $Y = -7.670 + (0.107)X1 + (-0.008)X2$. This equation provides a quantitative description of how the Digital Citizenship Variable (X1) and the Student Learning Outcomes Variable (X2) reduce Negative Online Behavior (Cyberbullying). The higher the value of the Digital Citizenship Variable (X1) and / or the Student Learning Outcomes Variable (X2), the lower the Online Negative Behavior (Cyberbullying) will be.

Discussion

Cyberbullying is a form of aggressive behavior carried out by individuals or groups of individuals using electronic media, and repeated repeatedly on victims who cannot defend themselves (8,35). One of the efforts to prevent this behavior is by equipping students with digital citizenship so that students will be more responsible in the digital world (Ribble, 2011). This is in accordance with the opinion of Choi et al. (2022) and Hidayat et al. (2021), which states that students with high digital literacy tend to be better at identifying the risks and negative impacts of dangerous online behavior.

Digital citizenship is a program that teaches responsible behavior in digital interactions. In addition to digital citizenship, learning outcomes also affect a person's tendency to engage or not in cyberbullying. Low learning outcomes that students will have an impact on low self-confidence, this can trigger aggressive behavior as a form of compensation. This is

supported by the opinion of Hinduja and Patchin (2014), which states that low academic achievement will trigger a greater likelihood of being involved in cyberbullying behavior, both as perpetrators and victims. Jones and Mitchell (2016) also mentioned the same thing, namely when students have good digital knowledge and skills, they will tend to go through understanding the consequences of negative online behavior so that they will be wiser in using technology to interact with others. In this case, low learning outcomes have the potential to lead to negative behaviors in cyberspace, such as bullying. These conditions arise or are often used by individuals to seek validation or cover academic weaknesses.

However, the correlation trend shows that students who have better learning outcomes tend to have a lower likelihood of engaging in negative online behaviors, such as cyberbullying. This is in line with research conducted by Hinduja and Patchin (2015), who found that students with good learning outcomes usually have higher social and moral abilities, which can reduce the tendency to engage in acts of bullying, both offline and online.

Thus, digital citizenship and learning outcomes are some important factors in preventing cyberbullying. However, for more effective results, a multidimensional approach involving digital literacy, social environmental support, and parental involvement is also needed to build a safe and responsible online culture.

4. CONCLUSIONS AND RECOMMENDATIONS

From the results of the above research, it can be concluded that there is a relationship between the variables of Digital Citizenship, Student Learning Outcomes, and negative online behavior (Cyberbullying), although the value is very small (not too significant). Nevertheless, the regression equation above provides an indication that increasing Digital Citizenship and learning outcomes can reduce the likelihood of students engaging in Cyberbullying. Therefore, we need to provide students with understanding and skills related to digital ethics and wise use of technology so that it can play a role in improving students' academic abilities and avoiding negative student behavior. Educational organizations should continue to strive for a more comprehensive education in building students digital and academic character can be an effective strategy to reduce Cyberbullying among students.

REFERENCES

- Al-Rahmi, W. M., Yahaya, N., Alamri, M. M., Aljarboa, N. A., Kamin, Y. Bin, & Moafa, F. A. (2019). A Model Of Factors Affecting Cyber Bullying Behaviors Among University Students. *IEEE Access*, 7(1), 2978–2985.
- Anderson, L. W., & Krathwohl, D. R. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. Longman Publishing.
- Arifin, S., Murnaka, N. P., Yuliawati, E. I., Pesulima, M. V. F., & Ohwyer, M. (2022). Higher order thinking skills competencies of junior high school teachers in Bogor Regency. *In AIP Conference Proceedings (Vol. 2479, No. 1, p. 020017)*.
- Arikunto, S. (2013). *Prosedur Penelitian Suatu Pendekatan Praktik*. Rineka Cipta.
- Asosiasi Penyelenggara Jasa Internet Indonesia (APJII). (2024). *APJII Jumlah Pengguna Internet Indonesia Tembus 221 Juta Orang*.
- Caravita, S. C. S., Di Blasio, P., & Salmivalli, C. (2009). Unique and interactive effects of empathy and social status on involvement in bullying. *Journal of Adolescence*, 32(2), 93–105. <https://doi.org/https://doi.org/10.1016/j.adolescence.2008.04.001>
- Castells, M. (2010). *The Rise of the Network Society*. (2nd ed.). Oxford: Wiley-Blackwell Publishers. <https://doi.org/10.1002/9781444319514>

- Choi, H., Kim, J., & Lee, S. (2022). Digital Literacy and Its Impact on Online Behavior: A Study on Cyberbullying Prevention. *Journal of Digital Education*, 45(3), 215–230.
- Creswell, J. W. (2007). *Qualitative Inquiry & Research Design: Choosing Among Five Approaches*, 2nd ed. Sage Publication.
- Dodridge, M., & Kassinopoulos, M. (2003). Assessment of student learning: The experience of two European institutions where outcomes-based assessment has been implemented. *European Journal of Engineering Education*, 28(4), 549–565. <https://doi.org/10.1080/0304379032000112861>
- Ellis, L. K., & Shute, R. (2007). Cognitive Abilities and Bullying Behavior: Exploring the Influence of Intelligence and Cognitive Empathy. *Educational Psychology Journal*, 27(1), 1–15. <https://doi.org/https://doi.org/10.1080/01443410601061488>
- European Commission: Directorate-General for Education. (2015). *Youth, Sport and Culture, ECTS users' guide 2015, Publications Office of the European Union*. <https://doi.org/https://data.europa.eu/doi/10.2766/87192>
- Fuchs, C. (2017). *Social Media: A Critical Introduction* (2nd ed.). SAGE Publications.
- Hidayat, F., Suryana, T., & Nugraha, A. (2021). Pengaruh Literasi Digital terhadap Perilaku Online Siswa di SMP Kota Bandung. *Jurnal Pendidikan Indonesia*, 9(2), 145–156.
- Hinduja, S., & Patchin, J. W. (2008). Cyberbullying: An Exploratory Analysis Of Factors Related To Offending And Victimization. *Deviant Behavior*, 29(2), 129–156. <https://doi.org/https://doi.org/10.1080/01639620701457816>
- Hinduja, S., & Patchin, J. W. (2014). Cyberbullying: Identification, Prevention, and Response. In *Cyberbullying Research Center*.
- Hinduja, S., & Patchin, J. W. (2015). *Bullying Beyond the Schoolyard: Preventing and Responding to Cyberbullying*. Corwin Press.
- Jolliffe, D., & Farrington, D. P. (2006). Examining the Relationship Between Low Empathy and Bullying. *Aggressive Behavior*, 32(6), 540–550. <https://doi.org/https://doi.org/10.1002/ab.20154>
- Jones, L. M., & Mitchell, K. J. (2016). Defining and measuring youth digital citizenship. *New Media and Society*, 18(9), 2063–2079. <https://doi.org/10.1177/1461444815577797>
- Kaluarachchi, C., Warren, M., & Jiang, F. (2020). Understanding Cybersecurity Behavioral Risks In Digital Platforms: A Digital Citizen Perspective. *Journal of Cybersecurity and Privacy*, 1(2), 366–384. <https://doi.org/https://doi.org/https://doi.org/10.3390/jcp1030021>
- Kemp, S. (2020). *We Are Social And Hootsuite “Digital 2020 Indonesia : All The Data, Trends, And Insights You Need To Help You Understand How People Use The Internet, Mobile, Social Media, And Ecommerce.”*
- Kowalski, R. M., & Limber, S. P. (2007). Electronic Bullying Among Middle School Students. *Journal of Adolescent Health*, 41(6).
- Kowalski, R. M., & Limber, S. P. (2013). Psychological, Physical, and Academic Correlates of Cyberbullying and Traditional Bullying. *Journal of Adolescence*, 36(1), 1–11. <https://doi.org/https://doi.org/10.1016/j.jadohealth.2012.09.018>
- MacWilliams, F. J., Sloane, N. J. A., & Sloane, N. J. A. (1977). *The theory of error-correcting codes* (Vol. 16). North-Holland Publishing Co., Amsterdam.
- Mccosker, A., Vivienne, S., & Johns, A. (2016). *Negotiating Digital Citizenship: Control, Contest & Culture*. Rowman & Littlefield Publishers.
- Patchin, J. W., & Hinduja, S. (2010). Cyberbullying and Self-Esteem. *Journal of School Health*, 80(12), 614–621. <https://doi.org/https://doi.org/10.1111/j.1746-1561.2010.00541.x>
- Popenici, S., & Millar, V. (2015). *Writing Learning Outcomes. A practical guide for academics*. Melbourne Centre for the Study of Higher Education. <https://doi.org/https://doi.org/10.13140/RG.2.1.1215.6246>

- Ribble, M. (2011). Digital Citizenship in Schools Second Edition. In *The Nine Elements of Digital Citizenship* (pp. 15–43). ISTE.
- Rigby, K. (2005). Bullying in schools and the mental health of children. *Australian Journal of Guidance and Counselling*, 15(2), 195–208.
<https://doi.org/https://doi.org/10.1375/ajgc.15.2.195>
- Saiful, N. I. (2019). Dampak Globalisasi Terhadap Perubahan Gaya Hidup Pada Masyarakat Kampung Komboi Distrik Warsa Kabupaten Biak Numfor. *Gema Kampus IISIP YAPIS Biak*, 14(2), 32–40.
- Sinaga, D. (2018). *Cyberbullying: Ancaman di Tengah kemajuan Teknologi*. CNN Indonesia.
<https://www.cnnindonesia.com/edukasi/20180103112946-445-266342/cyberbullying-anca-man-di-tengah-kemajuan-teknologi>
- Smith, P. K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N. (2008). Cyberbullying: Its Nature And Impact In Secondary School Pupils. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 49(4), 376–385.
<https://doi.org/https://doi.org/10.1111/j.1469-7610.2007.01846.x>
- Murnaka. (2018). Penerapan Metode Pembelajaran Guided Inquiry Untuk Meningkatkan Kemampuan Pemahaman Konsep Matematis. *Journal of Medives: Journal of Mathematics Education IKIP Veteran Semarang*, 2(2), 163–171.
- Sugiyono. (2015). *Metode Penelitian Kombinasi (Mix Methods)*. . Alfabeta.
- Sugiyono. (2016). *Metode Penelitian Kuantitatif kualitatif dan R&D*. Bandung, Indonesia. Penerbit Alfabeta.
- Reid, C. M., Jenny Radesky, M., Dimitri Christakis, M., & Megan A. Moreno, M. (2021). Children and Adolescents and Digital Media. *Pediatrics*, 138(5).
<https://doi.org/https://doi.org/10.1542/peds.2016-2593>
- Zhong, B., Huang, Y., & Liu, Q. (2021). Mental health toll from the coronavirus: Social media usage reveals its effects on quarantine-related post-traumatic stress disorder in China. *Computers in Human Behavior*, 114(106579).
<https://doi.org/https://doi.org/10.1016/j.chb.2020.106579>