

## How to Improve Student's Learning Interest? The Role of Learning Media Variation and Smartphone Distraction



Nicolas Bayu Kristiawan<sup>1</sup>, MG Gita Kumalasari<sup>2</sup>

<sup>1,2</sup> Sanata Dharma University, Yogyakarta, Indonesia

**ABSTRACT:** This study aimed to examine the influence of learning media variation and smartphone distractions towards students' learning interests. The research approach is quantitative research. The population of this study were 461 students from Stella Duce 2 Yogyakarta High School. The sample in this study were 233 students who were taken by purposive sampling technique. Data were collected from March to April 2023 using a questionnaire that was adopted by prior research and analyzed using a multiple regression analysis. The results of this study showed that: 1) there is a positive influence of learning media variation towards student's learning interest, 2) there is a negative influence of smartphone distraction towards student's learning interest.

**KEYWORDS:** Learning media variation, smartphone distraction, and student's learning interest

### I. INTRODUCTION

Learning interest is one of the important factors that can affect both student learning process and outcomes. According to Zain (2006), interest is a feeling of attraction to something without any enforcement from external parties. Furthermore, Schiefele (1991) explained that interest is a content specific motivational characteristic composed of intrinsic felling-related and value-related valences. According to Slameto (2013) interest has a large influence on learning outcomes, since it becomes the main factor that can increase the degree of student activity. Learning interest is also important for students learning and development, because it can influences knowledge structures and academic achievement (Krapp et al., 1992). Therefore, learning interest become the important factor in learning process. However, according to the observation that was conducted at Stella Duce 2 Yogyakarta Senior High School, the learning interest was categorized as low. It can be seen from the attitude of students when participating in learning and teaching process that tend to be more engrossed in talking with other friends and do not focus to the subject matter. Therefore, it become important for this study to find factors that can improve students' learning interest, especially in in the context of students in Stella Duce 2 Yogyakarta Senior High School.

One of the factors that is expected to increase students' learning interest and motivation is the use of learning media (Muharam et al., 2021; Prasetya, 2018; Puspitarini & Hanif, 2019; Vebrianto & Osman, 2011), since the use of learning media, especially media that is based on technology is become common (Kristiawan, 2021). The appropriate use of learning media in learning process not only become effective tools to achieve learning goals but will also increase learning motivation (Puspitarini & Hanif, 2019). In addition, according to Vebrianto & Osman (2011), using a variety of media can make learning becomes interesting and meaningful for students, therefore it is expected to support student learning and improve students' knowledge, skills, and attitudes. Furthermore, the research conducted by Muharam et al. (2021) found that the use of digital variety media in distance learning increase students' digital literacy. In addition, Prasetya (2018) found that the use variation in learning media increase interest and learning outcomes significantly. In practice at Stella Duce 2 Yogyakarta Senior High School, the use of learning media is only focused on Google Classroom, therefore it was expected to be the cause of students' low interest in learning. Furthermore, this study focuses on learning media variation and its relationship with students' learning interest. This study argues that learning media variation has positive influence towards student's learning interest.

In addition, the low learning interest of students at Stella Duce 2 Yogyakarta High School is also thought to be affected by smartphones distraction. The use of smartphone in classroom can help both student & teacher in learning & teaching activity (Anshari et al., 2017). However, it could become a challenging task, specifically for teachers, since they need to create attractive teaching and optimum interaction in order to reduce distraction that emerged from smartphone that is used in classroom (Anshari et al., 2017). According to Throuvala et al. (2021), smartphone distraction generally occurs among young people due to social media content. In addition, the use of smartphones and social media that occurred among young people, causing disruption and conflict in academic activities (Throuvala et al., 2021). Furthermore, Throuvala et al. (2021) also stated that distraction from

## How to Improve Student's Learning Interest? The Role of Learning Media Variation and Smartphone Distraction

smartphone is more visible in the classroom environment which hinders academic achievement because the main tasks are disrupted and make learning interest lower. In addition, Mahsud et al., (2021) suggest that the use of smartphone in classroom distracts students and hampers learning. Therefore, this study proposes that smartphone distraction has negative relationship with student's learning interest.

### II. LITERATURE REVIEW

#### A. Learning Media Variation

Learning media is a tool that can help the learning process and serves to convey information that comes from information sources. The use of learning media is expected to make the learning atmosphere interesting so that it can increase student interest in learning. In addition, learning media is important to attract student and increase stimulus for more work and progress of a particular topic presented by teacher (Vebrianto & Osman, 2011). According to Primasari et al. (2015), learning media has functions to assist teachers in clarifying the meaning of the message to be conveyed to student. Furthermore, (Kemp & Dayton, 1985) suggested that learning media has 3 functions namely: motivate student interest and action, provide information to student, and provide directions & instructions to student. In addition, Baharun (2016) explained that learning media can help learning activities to achieve the intended goals. Puspitarini & Hanif (2019) argued that the appropriate use of learning media in learning process not only become effective tools to achieve learning goals but will also increase learning motivation. Therefore, learning media become very important in learning process. However, the use of learning media that is not appropriate can make students bored and have an impact on learning interest, motivation, and learning goals. Therefore, teacher need to use variations in learning media.

Learning media variation has become important, since technology is growing rapidly and become integral part in the learning and teaching process. The use of technology in learning and teaching activities is expected to provide many options for teacher to choose a variety of learning media. Therefore, it is expected to increase students' participation, motivation, and interest. This argument is supported by Vebrianto & Osman (2011) who suggested that teachers use variation in learning media is expected to make learning becomes interesting and meaningful for students. Therefore, they argued that it can support student learning and improve students' knowledge, skills, and attitudes (Vebrianto & Osman, 2011). Their result found that the teaching and learning process using various constructive teaching media has significantly improved the achievement among students. In addition, Prasetya (2018) argued that the students' learning will be meaningful and interesting if the material is presented in a variety of media. The result of the study showed that the use of learning media variation increase interest and learning outcomes significantly. Furthermore, Muharam et al. (2021) argued that teacher must consider the cognitive stages of children and child psychology in the context of implementing online learning. They proposed that the use of variation in learning media is necessary, in order to adapt to online learning and improve students' interest. The result of their research showed that the use of variation in learning media improve student's digital literacy. According to the argument and research result, the first hypothesis is proposed as follows:

H1: Learning media variation has a positive influence towards student's learning interest

#### B. Smartphone Distraction

The term distraction refer to a functional emotion regulation strategy utilized to relieve emotional distress (Throuvala et al., 2021). In recent years, distraction is often associated with digital technology use, since technology become integral part in our life. In the context of education, the use of technology can't be separated in learning and teaching process (Kristiawan, 2021), particularly in online learning during the covid-19 pandemic. One example of technology implementation in classroom is the integration of smartphone in learning and teaching process (Anshari et al., 2017; Kadry & Ghazal, 2019; Kim et al., 2019; Remón et al., 2017; Vahedi et al., 2021). The use of smartphone in classroom can help both student and teacher in learning and teaching activity (Anshari et al., 2017). Remón et al. (2017) found that the use of smartphone with interactive lesson in classroom increases higher outcomes of student rather than with traditional learning. In addition, Vahedi et al., (2021) proposed that technology integration, for example the use of smartphone, can be an effective method of increasing student engagement. However, using smartphone in classroom activity could become a challenging task for teachers, since they need to create attractive teaching and optimum interaction in order to reduce distraction that emerged from smartphone that is used in classroom (Anshari et al., 2017). According to Throuvala et al., (2021) distraction from smartphone is more visible in the classroom environment which hinders academic achievement because the main tasks are disrupted and make learning interest lower. In addition, Mahsud et al. (2021) suggest that the use of smartphone in classroom distracts students and hampers learning. Furthermore, Kadry & Ghazal (2019) argued that the use of smartphone result in a difficult education environment, since students using social media like texting, tweeting, and chatting causing distraction during learning and teaching activity. In addition, I. Kim et al., (2019) conducted research with the sample is first year college students in Korea. The result of their study showed that students use their phone effectively for more than 25% during class duration. However, phone distractions occurred every 3-4 minutes causing distraction among students. Finally, they also found that the use of smartphone negatively correlated with student grades. According to the argument and research result, the second hypothesis is proposed as follows:

# How to Improve Student's Learning Interest? The Role of Learning Media Variation and Smartphone Distraction

H2: Smartphone distraction has a negative influence towards student's learning interest

## III. RESEARCH METHODOLOGY

### A. Research Design

This research design is quantitative research. This study aims to determine the influence of learning media variation and smartphone distractions towards students' learning interests. The population of this study were 461 students of Stella Duce 2 Yogyakarta Senior High School. This study used purposive sampling technique to determine the amount of sample. The criteria of sample were students in grade 10<sup>th</sup> – 11<sup>th</sup> at Stella Duce 2 Yogyakarta Senior High School.

### B. Method of Collecting Data

This study used a questionnaire to collect data variables of student's learning interest, learning media variation and smartphone distraction. Student's learning interest is something that can arouse enthusiasm and make students feel interested in learning (Ricardo & Meilani, 2017). This study developed questionnaire that is based from indicators proposed by Slameto (2013). The indicator of student's learning interest consists of feeling of happiness, attention, interest, and involvement. Learning media variation is student's perception about the use of learning media by teacher which include the use of visual, audio visual, and internet media that is used appropriately as needed in the teaching and learning process. This study used questionnaire that is developed by learning theory proposed by Gagne (1985) with a few modifications. The indicator of learning media variation consists of student perception about the use visual, audio visual, and internet media. Modifications were made to adjust with the current conditions in which teachers always used computer, therefore indicator of media computer was excluded. Smartphone distraction is disruption from smartphone in classroom environment that causes external distractions that can hinder academic achievement. This study adopted questionnaire developed by Throuvala et al., (2021). The indicator of smartphone distraction consists of attention impulsiveness, online vigilance, multitasking, and emotion regulation. In total, there are 60 statement items in this research instrument that include 3 variables. Each question item is expressed on a five-point scale (1 = strongly disagree to 5 = strongly agree).

Before being used to collect data, this research instrument has been tested for validity and reliability. The validity test was conducted on 38 students outside the respondents of this study. The corrected item-total correlation value for each item of learning media variation smartphone distractions, students' learning interests is more than 0,320 (df at 38-2 = 36 at a significance level of 0,05). Therefore, it concluded that all item of the entire variable is valid. The reliability test results show that the Cronbach's Alpha value for learning media variation is 0,961, smartphone distraction is 0,854, and student's learning interest is 0,816. Therefore, it concluded that the research instrument is reliable.

### C. Data Analysis Techniques

The data analysis technique of this research is multiple linear regression. Before the data is analyzed, classical assumption testing is carried out which includes testing the normality of data distribution, multicollinearity testing, and heteroscedasticity testing. Classical assumption testing and multiple regression testing were carried out with the IBM SPSS 25 Statistics for Windows program application. The research model is shown as follows.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \epsilon$$

where:

Y = Student's learning interest

X1 = Learning media variation

X2 = Smartphone distraction

## IV. RESULT AND DISCUSSION

### A. Description of Research Data

The data description of student's learning interest, learning media variation and smartphone distraction is presented in table 1. As presented in table 1, variable student's learning interest is categorized as high, whereas variable learning media variation that is measured with student's perception is categorized as high. In addition, variable smartphone distraction is categorized as low.

Table 1: Description of Research Variable

Variable	N	Theoretical Range	Actual Range	Means	Standard Deviation
Student's Learning Interest	233	12-60	19-60	42.75	7.163
Learning Media Variation	233	27-135	27-135	103.65	21.044
Smartphone Distraction	233	13-65	13-65	35.87	10.338

## How to Improve Student's Learning Interest? The Role of Learning Media Variation and Smartphone Distraction

### B. Classical Assumption Test

This study conducted classical assumption test namely, normality, multicollinearity, and heteroscedasticity test before testing the hypothesis. To test normality of data distribution, this study used one-sample kolmogorov smirnov test. The result of normality test is presented in table 2. The value of Asymp. Sig. (2-tailed) is 0.200, indicates that data distribution of the research data is normal. The result of multicollinearity test is presented in table 3. The tolerance value of learning media variation and smartphone distraction shows value above 0.10, whereas the VIF value is less than 10, therefore it concluded that there is no multicollinearity in the research model. The result of heteroscedasticity test is presented in table 4. The variables of learning media variation and smartphone distraction are not significant, that is shown by the value of Asymp. Sig. (2-tailed) is more than 0.05. Therefore, it concluded that there is no heteroscedasticity.

**Table 2: One-Sample Kolmogorov Test**

		Unstandardized Residual
N		233
Normal Parameters <sup>a,b</sup>	Mean	0.000000
	Std. Deviation	5.81290323
Most Extreme Differences	Absolute	0.052
	Positive	0.052
	Negative	-0.049
Test Statistic		0.052
Asymp. Sig. (2-tailed)		0.200

**Table 3: Multicollinearity test**

Model		Unstandardized Coefficients			t	Sig.	Collinearity Statistics	
		B	Std. Error				Tolerance	VIF
1	(Constant)	26.859	2.454	10.943	0.00			
	Learning Media Variation	0.188	0.018	10.272	0.00	0.991	1.010	
	Smartphone Distraction	-0.100	0.037	-2.688	0.008	0.991	1.010	

**Table 4: Heteroscedasticity test**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error			
1	(Constant)	3.906	1.528		2.555	0.011
	Learning Media Variation	0.005	0.011	0.030	0.458	0.647
	Smartphone Distraction	0.002	0.023	0.007	0.108	0.914

### C. Hypothesis Testing

The result of hypothesis testing is presented in table 5 & 6. Table 5 shows that the significance value (sig.) is smaller than 0.05, which means that the regression model can be used to predict student's learning interest. Table VI (Multiple linear regression) shows that the significance value (sig.) for the variables of learning media variation and smartphone distraction is significant (sig. value less than 0.05). Therefore, it can be concluded that all of hypothesis in this study are supported. Learning media variation has positive influence towards student's learning interest, whereas smartphone distraction has negative influence towards student's learning interest.

**Table 5: Anova**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4064.318	2	2032.159	59.623	0.000
	Residual	7839.244	230	34.084		
	Total	11903.563	232			

**Table 6: Multiple Regression Analysis**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	26.859	2.454		10.943	0.000
Learning Media Variation	0.188	0.018	0.552	10.272	0.000
Smartphone Distraction	-0.100	0.037	-0.145	-2.688	0.008

## V. DISCUSSION

Learning media variation positively affect student's learning interest. The research findings are in line with prior research that proposed the importance of learning media in the context of teaching and learning activity and how it is used appropriately, especially about how to make student interested and involved in learning process, namely by using learning media variation (Muharam et al., 2021; Prasetya, 2018; Puspitarini & Hanif, 2019; Vebrianto & Osman, 2011). The use of learning media is expected to make the learning atmosphere interesting so that it can increase student's interest in learning. In addition, it is also important to attract student and increase stimulus for more work and progress of a particular topic presented by teacher (Vebrianto & Osman, 2011). However, the use of learning media that is not appropriate can make students bored and have an impact on learning interest, motivation, and learning goals, therefore teacher need to use variation in learning media. Learning media variation has become important, because it is expected to make learning becomes interesting and meaningful for student (Vebrianto & Osman, 2011). In addition, Prasetya (2018) suggested that the students' learning will be meaningful and interesting if the material is presented in a variety of media. Furthermore, Muharam et al. (2021) argued that learning media variation is necessary to improve student's interest.

Smartphone distraction negatively affect student's learning interest. The research findings are in line with prior research which argued that the use of smartphone in learning and teaching process distract student from their main task (Anshari et al., 2017; Kadry & Ghazal, 2019; Kim et al., 2019; Mahsud et al., 2021; Throuvala et al., 2021) therefore reducing student's learning interest. The integration of smartphone in classroom could have positive impact for both students and teachers, but in the other hand it also could be challenging task for teachers, since they need to create attractive teaching and optimum interaction in order to reduce distraction that emerged from smartphone that is used in classroom (Anshari et al., 2017). In addition, Kadry & Ghazal (2019), argued that the use of smartphone result in a difficult education environment, since students always use social media that cause distraction during learning and teaching activity. Furthermore, the study conducted by Mahsud et al., (2021) and Kim et al., (2019) suggested that the use of smartphone in classroom distract student from their main task, therefore reduce student's learning interest.

## VI. CONCLUSIONS AND RECOMMENDATION

This study shows that learning media variation positively affects students' learning interest, whereas smartphone distraction negatively affects students' learning interest. In line with these findings, teachers need to use variation in learning media during learning and teaching activity in order to improve student's interest and involvement in classroom. In the other hand, teachers should carefully in the integration of smartphone in learning and teaching process, since the use of smartphone could distract student from their main task and reduce student's learning interest. This study suggests that teachers need to create attractive teaching and optimum interaction in order to reduce distraction that emerged from smartphone that is used in classroom as proposed by Anshari et al. (2017).

## REFERENCES

- 1) Anshari, M., Almunawar, M. N., Shahrill, M., Wicaksono, D. K., & Huda, M. (2017). Smartphones usage in the classrooms: Learning aid or interference? *Education and Information Technologies*, 22(6), 3063–3079. <https://doi.org/10.1007/s10639-017-9572-7>
- 2) Baharun, H. (2016). *Pengembangan media pembelajaran PAI berbasis lingkungan melalui model ASSURE*. Cendekia.
- 3) Gagne, R. M. (1985). *The Cognitive Psychology of School Learning*. Little, Brown and Company.
- 4) Kadry, S., & Ghazal, B. (2019). Design and assessment of using smartphone application in the classroom to improve students' learning. *International Journal of Engineering Pedagogy*, 9(2), 17–34. <https://doi.org/10.3991/ijep.v9i2.9764>
- 5) Kemp, J. E., & Dayton, D. K. (1985). *Planning and producing instructional media*. Cambridge: Harper & Row Publishers.
- 6) Kim, I., Kim, R., Kim, H., Kim, D., Han, K., Lee, P. H., Mark, G., & Lee, U. (2019). Understanding smartphone usage in college classrooms: A long-term measurement study. *Computers and Education*, 141(March), 103611.

## How to Improve Student's Learning Interest? The Role of Learning Media Variation and Smartphone Distraction

<https://doi.org/10.1016/j.compedu.2019.103611>

- 7) Krapp, A., Hidi, S., & Renninger, K. A. (1992). *Interest, learning, and development*.
- 8) Kristiawan, N. B. (2021). Faktor-faktor yang mempengaruhi penerimaan mahasiswa terhadap e-learning exelsa moodle dengan menggunakan getamel. *Edcomtech: Journal Teknologi Pendidikan*, 6(2), 275–287. <https://doi.org/10.17977/um039v6i22021p275>
- 9) Mahsud, M., Khalaf, A. J. M., Mahsud, Z., Afzal, A., & Afzal, F. (2021). Addiction to smartphones leading to distraction in the classrooms: Effect of different cultures. *Journal of Statistics and Management Systems*, 24(4), 741–754. <https://doi.org/10.1080/09720510.2020.1834660>
- 10) Muharam, A., Mustikaati, W., Sanny, A., Yani, F., & Wiriyanti, K. (2021). The effect of using digital variety media on distance learning on increasing digital literacy. *Journal of Physics: Conference Series*, 1987(1). <https://doi.org/10.1088/1742-6596/1987/1/012049>
- 11) Prasetya, S. P. (2018). *Effect of Learning Media Variation to Increase Interest and Learning Outcomes of Geography*. 212(Icei), 558–561. <https://doi.org/10.2991/icei-18.2018.122>
- 12) Primasari, R., Zulfiani, Z., & Herlanti, Y. (2015). Penggunaan Media Pembelajaran Di Madrasah Aliah Negeri Se-Jakarta Selatan. *Edusains*, 6(1), 67–72. <https://doi.org/10.15408/es.v6i1.1101>
- 13) Puspitarini, Y. D., & Hanif, M. (2019). Using Learning Media to Increase Learning Motivation in Elementary School. *Anatolian Journal of Education*, 4(2), 53–60. <https://doi.org/10.29333/aje.2019.426a>
- 14) Remón, J., Sebastián, V., Romero, E., & Arauzo, J. (2017). Effect of using smartphones as clickers and tablets as digital whiteboards on students' engagement and learning. *Active Learning in Higher Education*, 18(2), 173–187. <https://doi.org/10.1177/1469787417707618>
- 15) Ricardo, R., & Meilani, R. I. (2017). Impak Minat dan Motivasi Belajar Terhadap Hasil Belajar Siswa. *Jurnal Pendidikan Manajemen Perkantoran*, 2(2), 79. <https://doi.org/10.17509/jpm.v2i2.8108>
- 16) Schiefele, U. (1991). Interest, Learning, and Motivation. *Educational Psychologist*, 26(3–4), 299–323. <https://doi.org/10.1080/00461520.1991.9653136>
- 17) Slameto. (2013). *Belajar dan faktor-faktor yang mempengaruhinya*. Rineka Cipta.
- 18) Throuvala, M. A., Pontes, H. M., Tsaousis, I., Griffiths, M. D., Rennoldson, M., & Kuss, D. J. (2021). Exploring the Dimensions of Smartphone Distraction: Development, Validation, Measurement Invariance, and Latent Mean Differences of the Smartphone Distraction Scale (SDS). *Frontiers in Psychiatry*, 12(March). <https://doi.org/10.3389/fpsyt.2021.642634>
- 19) Vahedi, Z., Zannella, L., & Want, S. C. (2021). Students' use of information and communication technologies in the classroom: Uses, restriction, and integration. *Active Learning in Higher Education*, 22(3), 215–228. <https://doi.org/10.1177/1469787419861926>
- 20) Vebrianto, R., & Osman, K. (2011). The effect of multiple media instruction in improving students' science process skill and achievement. *Procedia - Social and Behavioral Sciences*, 15, 346–350. <https://doi.org/10.1016/j.sbspro.2011.03.099>
- 21) Zain. (2006). *Strategi belajar mengajar*. Rineka Cipta.



There is an Open Access article, distributed under the term of the Creative Commons Attribution – Non Commercial 4.0 International (CC BY-NC 4.0) (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits remixing, adapting and building upon the work for non-commercial use, provided the original work is properly cited.