Boosting Informatics Interest with Google Classroom: A Study on 10th Graders at State Senior High School 8 Malang

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ABSTRACT

In the learning process, an educator can choose and use several strategies, methods and learning media appropriate to the subject matter and the character of the students being taught. This research aims to determine how students' interest in learning is taught using Google Classroom media in the Informatics subject. This research is experimental. The subjects of this research were class X students of SMA Negeri 8 Malang. Meanwhile, the number of samples that will be used in this research is 42 respondents. The instrument used in this research is a questionnaire, and the type of data analysis used is quantitative. It is hoped that the results of this research can contribute to the use of Google Classroom media in the future as input, suggestions, or considerations in developing learning strategies.

I. INTRODUCTION

The development of science and technology has brought major changes in various aspects of human life, including social, economic, cultural and educational. [1]. So that these developments do not leave education behind, adjustments need to be made regarding the factors that influence the learning process in schools. [2]. One important factor is teachers' and prospective teachers' mastery of learning media. By mastering learning media, educators can deliver lesson material to students effectively and competently. [3].

Research regarding the use of digital learning media has shown various positive impacts on student interest and learning outcomes. For example, a study conducted by [4] Revealed that e-learning platforms can increase student participation and involvement in the learning process. In addition, research by [5] Using Google Classroom as a learning medium significantly increased students' motivation and interest in various subjects. Especially in Informatics subjects, digital learning media makes it easier to access learning materials and encourages students to participate more actively and develop critical thinking and problem-solving skills.

Learning media, especially internet-based learning media, is expected to increase students' interest in the subject matter discussed. [6]. However, many teachers are still unable to utilise the technology that exists in the current era. Even though this can make it easier for a teacher to convey lesson material to students [7]. The use of learning media in schools, especially Senior High Schools (SMA), is still not optimal or less relevant, and some learning materials still do not have appropriate learning media for use in learning. [8].

Many schools still use conventional learning media [9]. This can lead to low interest in learning because conventional media seems boring and does not attract students' attention [10]. In the current era, students cannot be separated from their smartphones; most of their daily activities are related to smartphones and the internet. Therefore, it is necessary to try

out interesting internet-based learning media to increase students' interest in learning [11].

Before conducting the research, the researcher observed the teaching and learning process at one of the high schools in Malang, SMA Negeri 8 Malang. In this observation, the researcher observed students' learning attitudes and the teacher's way of carrying out the learning process. [12]Researchers observed from the students' perspective that students were less enthusiastic about participating in class learning. Most students just want to go to class without the enthusiasm and interest to learn.

Students are not ready to take part in learning in class; when given assignments by the teacher, many students do not do the assignment, so when they are asked to do it in class, they just do it and don't listen to the teacher's explanation and some students ask their friends for help which of course this will be annoying. The learning process in class [13]. During the learning process in class, many students are busy with their activities, such as chatting with their classmates without paying attention to the teacher's explanations. They are also busy playing with their respective smartphones. A teacher in today's developments must be more creative and innovative in utilising sophisticated technology because, in the current era, technology can be used as an innovative learning medium, and it is hoped that it can also attract students' interest in learning. [14].

This research contributes by filling the gap in the literature regarding the use of innovative, appropriate internet-based learning media for high school students. [15]. Although several studies have highlighted the importance of technology-based learning media, there is still a lack of in-depth analysis of how these media can be implemented effectively in senior secondary education environments. [16]This research will specifically explore learning media that utilise online platforms and applications that are interesting to students and their impact on increasing their interest and learning outcomes.

This research aims to further explore the influence of using Google Classroom on class X students' interest in learning at SMA Negeri 8 Malang. It hopes to contribute to the development of more effective and interesting learning strategies in this digital era.

II. METHOD

A. Place and time

This research was conducted at SMA Negeri 8 Malang, in Jl. Veteran No.37 Malang City. It was carried out in April, during the even semester of the 2023/2024 academic year.

B. Target/Objectives and Research Subjects

A population refers to a generalised area consisting of objects or subjects with certain quantities and characteristics determined by researchers to be studied and used as a basis for drawing conclusions. [17]. In this research, the population includes all classes.

Due to limited time and energy, researchers cannot research the entire population, so only a portion will be studied, called the research sample. Based on the research design used, samples were taken from existing groups using random sampling. Samples were taken from two classes, namely X-1 and X-2, with around 42 students as respondents.

C. Research Variable

According to [17]Research variables are objects or things that are the focus of attention in a study. This variable acts as a differentiator. Before conducting research, researchers must first determine the variables to be studied. Research variables function to differentiate one variable from other variables. In this research, there are two main variables, namely:

- The independent variable (X) is the Google Classroom learning media.

- Dependent variable (Y)

- The dependent variable is the variable that is measured and observed because of the independent variable. The dependent variable in this research is interest in studying the Informatics subject for class X SMA Negeri 8 Malang, East Java, academic year 2023/2024.

D. Procedure

The approach used in this research is quantitative. A quantitative approach uses numerical data and emphasises the breadth of information rather than its depth. This method is suitable for large populations with limited variables so that the data or research results represent the entire population. [17].
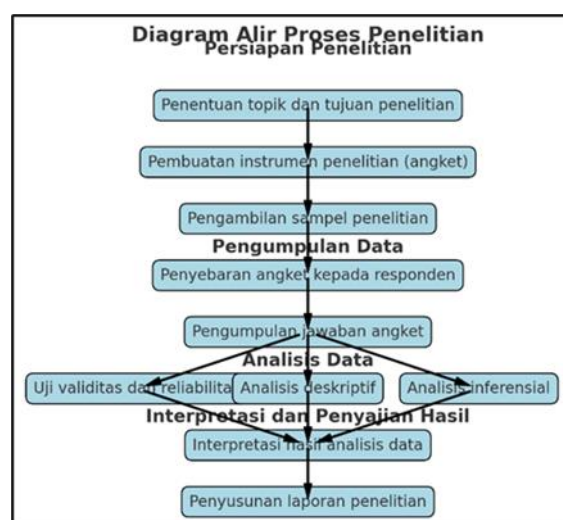

Fig. 1. Research Flow Diagram

Figure 1 explains the research process, which describes the steps taken from preparation to presenting the results. This process begins with Research Preparation, which includes determining the research topic and objectives, creating research instruments (questionnaires), and taking research samples. After the preparation stage, it continues with Data Collection, which involves distributing questionnaires to respondents and collecting questionnaire answers.

The next stage is Data Analysis, where the data that has been collected is tested for validity and reliability. After that, descriptive analysis was carried out to describe respondents' demographic data and the distribution of questionnaire answers.

Next, inferential analysis was used to test the effect of Google Classroom learning media on students' learning interests. Finally, the results of data analysis are interpreted in the Interpretation and Presentation of Results stage. At this stage, the results of data analysis are interpreted to answer research questions and prepared in the form of a comprehensive research report. This process ensures that research is carried out systematically and the results can be trusted and used for appropriate decision-making.

E. Data collection and data analysis techniques

A questionnaire is a data collection method involving a series of questions or written statements given to respondents. Researchers used a questionnaire in this research to obtain information about students' learning interests. The questionnaire was distributed to class X students of SMA Negeri 8 Malang for the 2023/2024 academic year, who were the research samples. Twenty-three statements in the questionnaire measure students' interest in learning before and after using Google Classroom learning media in the Informatics subject. This questionnaire is delivered via Google Forms and focuses on relevant aspects of students' learning interests.

The list of questions in the questionnaire given to respondents is a total of 23 question items, namely by selecting answers that are considered by the following criteria:

- For answer 1, Strongly Disagree
- For answer 2, Disagree
- For answer 3, Quite agree
- For answer 4, Agree
- For answer 5, Strongly Agree

To strengthen the study methodology, it is important to add a detailed explanation of the data analysis techniques used. Data collected from the questionnaire will be analysed using descriptive and inferential statistical methods. The analytical tools used include statistical software such as SPSS or similar software, allowing researchers to carry out validity, reliability and regression analysis tests.

The steps in data analysis include:

- Validity and Reliability Test: Test the reliability and validity of the questionnaire used to ensure the data obtained is accurate and consistent.
- Descriptive Analysis: Describes the respondents' demographic data and the distribution of questionnaire answers.
- Inferential Analysis: Using a regression test to test the effect of Google Classroom learning media on students' interest in learning.

III. RESULTS AND DISCUSSION

A. Number and Characteristics of Respondents

The data collected and used in this research came from 42 class X SMA Negeri 8 Malang respondents. Respondent characteristics:

- Respondent is an active class X student at SMA Negeri 8 Malang

- Respondent is a class X student in the 2023/2024 academic year
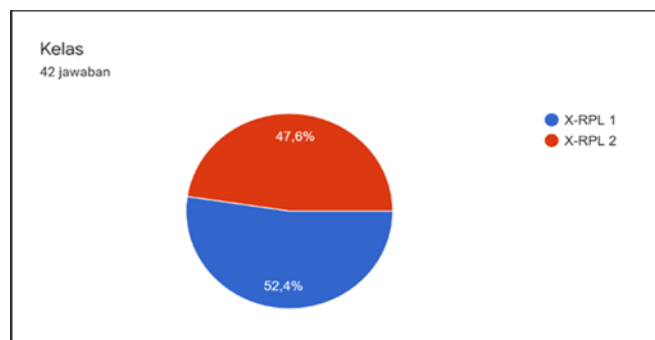- The respondent is a class X student studying Informatics.

Fig. 2. Graph of Respondent Characteristics

B. Normality test

In this study, a normality test was carried out to evaluate the data distribution. The normality test is a statistical procedure used to determine whether the observed data follows a normal distribution (Karakoç et al., 2021). In SPSS, the normality test can be carried out using the Shapiro-Wilk or Kolmogorov-Smirnov test. Apart from that, graphical methods can also be used to see data distribution. The following is a table showing the results of the normality test:

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre Test	.132	42	.064	.925	42	.009
a. Lilliefors Significance Correction						

Fig. 3. Normality Test

Based on the data obtained from the calculation of the Kolmogorof-Smirnov test results, it can be concluded that the average data is normally distributed because it has Asymp. Sign > 0.05. This test has a sign value of 0.064.

C. Descriptive Test

Apart from carrying out normality tests, this research also used descriptive tests. Descriptive tests describe or explain data by paying attention to the average value (mean), standard deviation, maximum value, minimum value, amount of data (sum), and data interpretation. As for interpretation, use Likert analysis with the following conditions:

- The lowest score with a description of strongly disagree is 1.
- The highest score with a description of strongly agree is 5. Rating interval = $(5-1)/5 = 0.80$

So from this interval, assessment limits will be given for each variable with the following conditions:

- 1.00 – 1.80 = Strongly Disagree

- 1.81 – 2.60 = Disagree
- 2.61 – 3.40 = Quite Agree
- 3.41 – 4.20 = Agree
- 4.21 – 5.00 = Strongly Agree

The following is a table of descriptive test results:

TABLE I. DESCRIPTIVE TEST

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Interpretation
I am very enthusiastic about taking Informatics lessons with Google Classroom.	423		5	3.81	,804	Agree
I feel bored taking Informatics lessons with Google Classroom because I can't communicate directly with teachers and friends.	421		5	3.45	1,109	Agree
I don't like studying Informatics with Google Classroom because it is difficult to understand.	421		5	3.57	1,192	Agree
Studying Informatics with Google Classroom makes me feel bored because I can't interact directly with teachers and friends.	421		5	3.69	1,024	Agree
I focus my attention on studying Informatics with Google Classroom.	422		5	3.69	,869	Agree
When studying Informatics with Google Classroom, I immediately asked the teacher for material I didn't understand.	421		5	3.64	,958	Agree
I follow Informatics learning using Google Classroom well.	422		5	3.86	,899	Agree
I record important Informatics material in a notebook when studying with Google Classroom.	422		5	3.48	,862	Agree
After studying with Google Classroom, I asked friends who understood better if they experienced difficulties in Informatics lessons.	422		5	4.12	,832	Agree

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Interpretation
I always read books that can support Informatics learning activities before starting learning with Google Classroom.	421		5	3.26	,857	Disagree
I rarely open books related to Informatics material before learning with Google Classroom begins.	421		5	3.17	1,057	Disagree
I don't like studying Informatics with Google Classroom.	421		5	2.90	1,031	Disagree
Learning Informatics is more fun with Google Classroom than other media.	421		5	3.26	,964	Disagree
I like the Informatics material taught by teachers using Google Classroom.	421		5	3.43	,991	Agree
With Google Classroom, I can study well and get satisfactory results.	422		5	3.50	,890	Agree
Getting high grades makes me more enthusiastic about studying with Google Classroom.	422		5	3.86	,899	Agree
I find learning Informatics with Google Classroom more difficult than with other media.	421		5	3.05	1,103	Disagree
I always repeat Informatics lessons at home after learning using Google Classroom.	421		5	3.36	,850	Disagree
I try to get information about developments in Informatics via the Internet and Google Classroom.	422		5	3.64	,759	Agree
I never studied Informatics myself after I finished studying with Google Classroom.	421		5	3.02	1,024	Disagree
I don't like opening Google Classroom to re-study the Informatics material that the teacher has taught.	421		5	2.93	1,135	Disagree
Before the lesson starts, I study the Informatics material the teacher will teach via Google Classroom.	421		5	3.43	,966	Agree

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Interpretation
I always take the initiative to study Informatics material independently, which I don't understand after studying with Google Classroom.	42	2	5	3.62	,854	Agree
Valid N (listwise)	42					

The table above shows the average value (mean) of the statements used in the research, ranging from 2.90 to 4.12. Of all the statements, the statement that "I asked a friend who understands better if I experienced difficulties in Informatics lessons after studying with Google Classroom, I followed Informatics lessons using Google Classroom well, and getting high grades made me more enthusiastic about studying with Google Classroom" has the highest mean value.

D. Discussion

Discussion of the research demonstrates a good understanding of the implications of the findings and links them back to the existing literature and research objectives. This research's findings indicate that using Google Classroom learning media significantly increases students' interest in learning in Informatics subjects. These results are in line with previous research by [18], who also found that Google Classroom increased student motivation and engagement. This shows that the use of technology in education not only makes access to material easier but also positively impacts students' interest in learning.

These findings can be compared to similar studies to deepen the analysis. For example, a study by Ramadhani shows that using e-learning platforms can increase student interest and learning outcomes in various subjects, including Science and Mathematics. [19]. In addition, research by Rofiqoh also found that more intensive interaction between students and teachers via digital platforms can increase interest in learning. [20]. By comparing the results of this research with other research, it can be concluded that the use of Google Classroom as an effective learning medium is not only in the context of Informatics subjects but can also be applied in other broader fields.

However, this study has several limitations that need to be acknowledged. One limitation is that the sample used only consisted of two classes in one school, so the results may not be generalisable to a wider population. In addition, this research only measures students' interest in learning and does not consider other aspects, such as learning achievement or student satisfaction. For future research, it is recommended to expand the research sample by involving more schools and classes and measuring other relevant variables such as student achievement and learning satisfaction.

IV. CONCLUSION

Based on the results of research and discussion regarding the influence of using Google Classroom learning media on the interest in learning of class teachers and friends, (2) they also feel bored and not happy learning Informatics with Google Classroom because of the experience of having difficulty understanding the material and the lack of direct interaction with the teacher, and (3) despite this, students are still active in asking friends who have more mastery of the material when faced with Difficulty in Informatics lessons after using Google Classroom. Based on the results of this analysis, researchers suggest several things that can be considered in the world of education regarding the use of learning media, including (1) teachers need to choose the learning media used in the learning process carefully, (2) it is important for teachers to create an atmosphere learning that is fun and appropriate to the characteristics of students to reduce boredom and boredom, (3) students need to be encouraged to help each other when there are friends who have difficulty understanding the lesson material.

REFERENCES

[1] Y. Indarta, A. Ambiyar, A. D. Samala, and R. Watrianthos, "Metaverse: Tantangan dan Peluang dalam Pendidikan," *J. Basicedu*, vol. 6, no. 3, 2022, doi: 10.31004/basicedu.v6i3.2615.

[2] P. Dita, "Pentingnya Media Pembelajaran dalam Meningkatkan Prestasi Belajar," *Early Child. Islam. Educ. J.*, vol. 3, no. 01, pp. 73–85, 2022, doi 10.58176/eciejournal.v3i01.679.

[3] B. Gan, T. Menkhoff, and R. Smith, "Enhancing students' learning process through interactive digital media: New opportunities for collaborative learning," *Comput. Human Behav.*, vol. 51, pp. 652–663, Oct. 2015, doi: 10.1016/j.chb.2014.12.048.

[4] A. Muniasamy and A. Alasiry, "Deep learning: The Impact on Future eLearning," *Int. J. Emerg. Technol. Learn.*, vol. 15, no. 1, pp. 188–199, 2020, doi: 10.3991/IJET.V15I01.11435.

[5] E. Sabran, & Sabara, "Keefektifan Google Classroom Sebagai Media Pembelajaran," *Pros. Semin. Nas. Lemb. Penelit. Univ. Negeri Makasar*, pp. 122–125, 2019.

[6] R. Atikah, R. T. Prihatin, H. Hernayati, and J. Misbah, "Pemanfaatan Google Classroom Sebagai Media," *J. PETIK*, vol. 7, no. 1, 2021.

[7] M. Sholeh, M. Murtono, and S. Masfuah, "Efektivitas Pembelajaran Google Classroom Dalam Meningkatkan Kemampuan Literasi Membaca Siswa," *J. Educ. FKIP UNMA*, vol. 7, no. 1, pp. 134–140, Mar. 2021, doi: 10.31949/education.v7i1.889.

[8] M. Tekege, "Pemanfaatan teknologi informasi dan komunikasi dalam pembelajaran SMA YPPGI Nabire," *J. Teknol. dan Rekayasa*, vol. 2, no. 1, 2017.

[9] M. Tsvetkova, "Cross-disciplinary higher education between radiology and bibliology: Book science as a degree programme in universities worldwide," *Eur. J. Contemp. Educ.*, vol. 8, no. 4, pp. 889–919, 2019, doi: 10.13187/ejced.2019.4.889.

[10] R. Motschnig-Pitrik and A. Holzinger, "Student-Centered Teaching meets new media: Concept and case study," *Educ. Technol. Soc.*, vol. 5, no. 4, pp. 160–172, 2002.

[11] D. M. Nombela, P. Dominici, M. J. Gato Bermúdez, G. Sarasqueta, J. F. Díaz Cuesta, and M. J. Silveira, "The new online university education: from the emotional to the spectacular," *Rev. Lat. Comun. Soc.*, vol. 2023, no. 81, pp. 508–537, 2023, doi: 10.4185/RLCS-2023-1980.

[12] E. G. Meri and D. Mustika, "Peran Guru dalam Pembelajaran di Kelas V Sekolah Dasar," *J. Pendidik. dan Konseling*, vol. 4, no. 4, pp. 200–208, 2022.

[13] N. S. Kumayas and W. Cendana, "Penerapan Peraturan dan Prosedur Kelas Guna Mendisiplinkan Siswa Sekolah Dasar dalam Pembelajaran Virtual," *J. Elem. Edukasia*, vol. 4, no. 1, 2021, doi: 10.31949/jee.v4i1.3037.

[14] A. S. Rahmatullah, E. Mulyasa, S. Syahrani, F. Pongpalilu, and R. E.

Putri, "Digital era 4.0: The Contribution to Education and Student Psychology," *Linguist. Cult. Rev.*, vol. 6, no. S3, pp. 89–107, 2022.

[15] V. A. Wulandari, I. M. Wena, and G. A. M. A. Putri, "Analisis Kebutuhan Media Video Pembelajaran Inovatif Berbasis Realistic Mathematics Education (RME) Dalam Pembelajaran Matematika Di SMA N 8 Denpasar," *J. Pembelajaran dan Pengemb. Mat.*, vol. 3, no. 1, pp. 31–38, Mar. 2023, doi: 10.36733/pemantik.v3i1.6057.

[16] S. Z. Dewi and I. Hilman, "Penggunaan TIK sebagai Sumber dan Media Pembelajaran Inovatif di Sekolah Dasar," *Indones. J. Prim. Educ.*, vol. 2, no. 2, p. 48, 2019, doi: 10.17509/ijpe.v2i2.15100.

[17] Sugiyono, "Metode Penelitian Pendidikan. Bandung," *Metod. Penelit. Pendidik. (Pendekatan Kuantitatif, Kualitatif, dan R&D)*, 2015.

[18] A. R. Harefa, "Analisis Kesulitan Belajar Biologi Masa Pandemi Covid-19," *Educ. J. Pendidik.*, vol. 1, no. 1, pp. 181–189, 2022, doi: 10.56248/educativo.v1i1.27.

[19] R. Ramadhani, E. Astuti, and T. Setiawati, "The Implementation Of Lms-Google Classroom To Improving Competence Skill Of Senior High School Teachers' In Industrial Revolution 4.0," *AMALIAH J. Pengabdi. Kpd. Masy.*, vol. 3, no. 2, pp. 327–335, 2019, doi: 10.32696/ajpkm.v3i2.286.

[20] J. Rofiqoh, T. L. A. Sucipto, and B. Basori, "Pengaruh Blended Learning Menggunakan Think Pair Share Berbantuan Google Classroom Dengan Traditional Learning Terhadap Hasil Belajar Dan Motivasi Belajar Siswa," *J. Ilm. Pendidik. Tek. dan Kejuru.*, vol. 13, no. 1, p. 11, 2020, doi: 10.20961/jiptek.v13i1.22368.