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DIGITAL LITERACY IN USING GEOGEBRA LEARNING MEDIA IN TERMS OF SELF-DIRECTED LEARNING

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Abstract:
Digital literacy is important to improve the quality of education, especially in mathematics learning which can develop and engage students in exploring the efficient digital world for learning mathematics. The purpose of this study is to analyze the digital literacy of grade VIII students of SMP Negeri 1 Karangrejo in using GeoGebra learning media in terms of self-directed learning. This type of research is descriptive qualitative. The subjects of this study consisted of six students, and the instruments used were lesson plans, self-directed learning questionnaires, student response questionnaires, and interview guidelines. The result of this research shows that digital literacy with students who have high level for self-directed learning are able to fulfill all of indicators for digital literacy including being able to understand instructions for use and how to use the GeoGebra application, explain the information in the GeoGebra application, do the exercises correctly, participate in exchanging ideas with friends and develop their creativity into a new work in the GeoGebra application, students with moderate self-directed learning are only able to meet five digital literacy indicators including being able to understand instructions for use and explain the information in the GeoGebra application, do the exercises correctly, participate in brainstorming with friends and try to develop their creativity into a new work on the GeoGebra application, and students with low self-directed learning are only able to meet two digital literacy indicators including able to understand the instructions for use and be able to do practice questions correctly.

Keywords*:* Self-Directed Learning, Digital Literacy, GeoGebra Learning Media

LITERASI DIGITAL DALAM MENGGUNAKAN MEDIA PEMBELAJARAN GEOGEBRA DITINJAU DARI SELF-DIRECTED LEARNING

Abstrak:
Literasi digital penting untuk diterapkan dalam peningkatan kualitas pendidikan khususnya pada pembelajaran matematika yang dapat mengembangkan dan melibatkan siswa dalam menjelajahi dunia digital yang efisien untuk pembelajaran matematika. Tujuan penelitian ini adalah untuk menganalisis literasi digital siswa kelas VIII SMP Negeri 1 Karangrejo dalam menggunakan media pembelajaran GeoGebra ditinjau dari *self-directed learning*. Jenis penelitian ini adalah kualitatif deskriptif. Subjek

penelitian ini terdiri dari 6 orang siswa dan instrumen yang digunakan adalah RPP, angket *self-directed learning*, angket respons siswa, dan pedoman wawancara. Hasil penelitian menunjukkan bahwa literasi digital siswa dengan *self-directed learning* yang tinggi sudah mampu memenuhi semua indikator literasi digital, meliputi mampu memahami petunjuk penggunaan dan cara penggunaan pada aplikasi GeoGebra, menjelaskan informasi yang ada pada aplikasi GeoGebra, mengerjakan soal latihan dengan benar, berpartisipasi bertukar pikiran dengan teman dan mengembangkan kreativitas yang dimiliki ke sebuah karya baru pada aplikasi GeoGebra, siswa dengan *self-directed learning* sedang hanya mampu memenuhi lima indikator literasi digital meliputi mampu memahami petunjuk penggunaan dan menjelaskan informasi yang ada di aplikasi GeoGebra, mengerjakan soal latihan dengan benar, berpartisipasi bertukar pikiran dengan teman dan berusaha untuk mengembangkan kreativitas yang dimiliki ke sebuah karya baru pada aplikasi GeoGebra, dan siswa dengan *self-directed learning* yang rendah hanya mampu memenuhi dua indikator literasi digital meliputi mampu memahami petunjuk penggunaan dan dapat mengerjakan soal latihan dengan benar.

Kata Kunci: Self-Directed Learning, Literasi Digital, Media Pembelajaran GeoGebra

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INTRODUCTION

In the educational environment, a good digital literacy plays a role in developing one's knowledge of a particular subject matter to encourage curiosity and creativity (Hague & Payton, 2010). Digital literacy is important to be applied in improving the quality of education, especially in mathematics learning. The application of digital literacy to mathematics learning provides opportunities for interaction. Literacy becomes an interesting source of reading, various reference materials, communication, and problem-solving (Kissane, 2009, as quoted by Muliawanti & Badu Kusuma, 2019). Digital literacy is the ability of each individual to understand information, access, apply, analyze, and use digital tools properly and carefully. According to Hague & Payton (2010), digital literacy is the ability and understanding to apply critically and intelligently when engaging with digital devices to seek information, cooperate and communicate with others.

Digital literacy is important to be applied in improving the quality of education, especially in mathematics learning. Digital literacy is used to think

and disseminate information (Nurjanah, Rusmana, & Yanto, 2017). Digital media consists of various forms of information, such as sound, images, and writing (Salehudin, 2020). Even digital literacy is predicted to be a key and important foundation in the field of education in the future (Keskin, Nilgun, Ozata, Banar, & Royle, 2015).

According to Kurniawati and Baroroh (2016), individual competence has the following two categories:

a. Personal competence is a person's ability to utilize and study digital media content. Personal competence has two variables, namely:
   1. Use skills are technical abilities in using digital media.
   2. Critical understanding is a cognitive ability in using digital media, such as the ability to understand, analyze, and evaluate digital media content.
b. Social competence is a person's ability to communicate and build social relationships through digital media and produce digital media content. Social competence consists of communicative abilities, which are the ability to build social relationships, participate in the community environment through digital media, and include the ability to create and produce digital media content.

According to OECD (2015), one of the efforts of the digital literacy movement is to familiarize students in schools so that they are skilled in doing digital literacy activities is through information technology-based learning media used in the learning process. In a school environment, digital technology can be implemented by applying digital technology to create critical and creative students (Utami, 2020). Information technology-based learning media is indispensable in learning mathematics because it helps students increase understanding and motivation, learning outcomes of mathematics, and can be used inside and outside the classroom (Suratman, Afyaman, & Rakhmasari, 2019). One of the information technology-based learning media that can improve students' skills in digital literacy activities is through learning media that are currently developing rapidly and are easy to understand and use, namely GeoGebra software (Priwantoro, Fahmi, & Ariesta, 2019).

GeoGebra is a software dynamic geometry that makes it easy to form points, lines, and shapes of curves. GeoGebra is a software to help students learn mathematics, especially geometry and algebra, which is very effective in becoming more active and understanding mathematical concepts. According to Hohenwarter, Hohenwarter, Kreis, & Lavicza (2008), GeoGebra is software for learning mathematics, especially geometry and algebra. Kesumawati (2017),

stated that GoeGebra is a dynamic program that can display and visualize concepts and tools to form mathematical concepts. The same thing was also expressed by Nur (2016) that GeoGebra can visualize mathematical objects quickly, accurately, and efficiently.

GeoGebra can be useful as a mathematics learning medium that provides visual experiences to students in dealing with mathematical concepts. Learning media using GeoGebra is a student-centered learning strategy to create and design media that students can use during the learning process (Asngari, 2015). In general, GeoGebra also has three advantages, among others, as a tool for creating images of geometric objects and function graphs, being able to solve mathematical problems, and as a medium for learning mathematics. (Prasistayanti, Santyasa, & Sukra-Warpala, 2019). Besides, Murni, Sariyasa, & Ardana (2017) revealed that GeoGebra can also facilitate interactive evaluation in the learning process. GeoGebra can also help teachers describe mathematical concepts and procedures (Zulnaidi & Zamri, 2017). In addition, GeoGebra can increase students' understanding of the concepts they have learned or construct new concepts (Pianda & Rahmiati, 2020).

One of the learning strategies developed to increase the interest, creativity in learning, and effectiveness in instructional GeoGebra media, i.e., self-directed learning. Self-directed learning strategy aims to build individual initiative, independence and self-improvement without the help of others (Martharina, Warjiman, & Santoso, 2016). Self-directed learning is a process in which individuals increase their knowledge, proficiency, achievement, with or without the help of others, and develop themselves by using many methods and strategies at any time. Gibbons in Akbar and Anggaraeni (2017) argues that self-directed learning increases knowledge, proficiency, achievement, and where an individual develops himself by using many methods in many situations at any time. Efforts to improve self-directed learning can be done by creating pleasant learning conditions, which give students the freedom to ask questions, think, and have opinions.

The use of digital literacy in GeoGebra learning media can create learning conditions that are more active, independent, and easy in using GeoGebra learning media that can be used anywhere and anytime. It is necessary to use GeoGebra learning media to help students learn mathematics, especially in geometry and algebra.

RESEARCH METHOD

This research is a descriptive study with a qualitative approach. Descriptive qualitative research is an approach to explore and understand an event. The event that will be observed and studied is students' digital literacy in using GeoGebra learning media. The research was conducted in grade VIII I of SMP Negeri 1 Karangrejo Tulungagung in the even semester of the academic year 2019/2020. From grade VIII I, the research subjects were taken using the purposive sampling method, which is determined by the researcher and the consideration of the mathematics teacher who teaches and the results of students who have different characteristics of self-directed learning.

This study's data collection techniques are observation, self-directed learning questionnaire, student response questionnaire, and interview. Observation is used to determine all activities that are ongoing during learning. The self-directed learning questionnaire was used to classify students into three competencies: low, medium, and high. The student response questionnaire to digital literacy is used to determine students' ability to understand and use digital media, namely GeoGebra learning media, which includes clarity, convenience, and interest in media. Interviews are used to dig more profound information about student responses to digital literacy using GeoGebra learning media.

The main instrument is the researcher himself, while the supporting instruments are lesson plan, self-directed learning questionnaire, student response questionnaire to digital literacy, and interview guideline. The lesson plan has been used for learning using GeoGebra. Self-directed learning questionnaire to measure a person's learning independence where students decide for themselves what to learn. Student response questionnaire to digital literacy to understand the use of digital media, namely GeoGebra learning media for students. Interview guidelines were carried out by semi-structured interviews.

The data analysis technique is carried out in 3 stages in this study: data reduction, data display, and conclusion drawing/verification. The triangulation method was used to test the validity of the data, namely by comparing the results of the student response questionnaire with the results of the interview.

RESULTS AND DISCUSSION

This research was conducted using online learning through the WhatsApp application by making a group application, which was carried out

during four meetings. In the first meeting, researchers introduced themselves to students, gave a self-directed learning questionnaire via google form, and provided videos. The tutorial using GeoGebra media has been uploaded by researchers on YouTube with the URL address https://youtu.be/z-aqJFtpZSk. The second meeting was carried out by implementing learning using GeoGebra learning media, which students could see via youtube with the URL address https://youtu.be/s4YNAex2csw. In the third meeting, the researchers gave a questionnaire to discover the students' responses to digital literacy in using GeoGebra learning media. In the fourth meeting, researchers conducted interviews with research subjects after using GeoGebra learning media.

The subjects of this study are grade VIII I students of SMP Negeri 1 Karangrejo Tulungagung, which consisted of 6 students who reflected 3 characteristics of self-directed learning, namely 2 students of low self-directed learning (subject R1 and R2), 2 students of medium self-directed learning (subject S1 and S2), and 2 students of high self-directed learning (subject T1 and T2). Researchers distributed self-directed learning questionnaires to grade VIII I of SMP Negeri 1 Karangrejo Tulungagung via google form with the URL address https://forms.gle/zrZ5hhy7oFf97TJB6 to find out students' self-directed learning. Data from the self-directed learning questionnaire results are then analyzed to determine the subject that reflects the 3 characteristics of self-directed learning. Some of the students who filled out the self-directed learning questionnaire were 15 students from grade VIII I of SMP Negeri 1 Karangrejo Tulungagung. Furthermore, the taking of the research subject is based on consideration of the mathematics teacher who teaches and the results of the students' scores who have different characteristics of self-directed learning. Based on the results of consultation and questionnaire scores of students' self-directed learning, it is found that 6 (six) students from grade VIII I of SMP Negeri 1 Karangrejo Tulungagung become research subjects in using GeoGebra learning media.

The results of the student response questionnaire to digital literacy were obtained from students who had filled out a response questionnaire via google form in the URL address https://forms.gle/5CyBTKrxPti2HyG4A. Self-directed learning questionnaire and student response questionnaire to digital literacy use a closed questionnaire in which alternative answers are provided. Students only choose one of the answers provided using the scale range Likert in table 1.

Table 1. Scoring Format of Self-Directed Learning Questionnaire and Students Response Questionnaire

Alternative Answers	Weight	
	(+)	(-)
Very Suitable	5	1
Suitable	4	2
Less suitable	3	3
Unsuitable	2	4
Very unsuitable	1	5

Source: Sugiyono (2014)

The following description is the students' response to the digital literacy in using GeoGebra learning media.

1. Description of Digital Literacy Response Results from Subject T1

The following is an excerpt from the interview of subject T1 toward GeoGebra learning media.

Researcher : "*When using the GeoGebra application, what difficulties did you experience?*"
T1 : "*At first, I opened the application and felt confused, but after seeing the video given, I understood the use of the GeoGebra application.*"
Researcher : "*What information do you get when using the GeoGebra application?*"
T1 : "*I can paint a common external tangent to two circles, make a circle, and then it can be used for algebraic material too.*"
Researcher : "*What obstacles did you face when working on practice questions in the GeoGebra application?*"
T1 : "*When doing it, Alhamdulillah, there were no obstacles at all.*"

From the results of the interviews and response questionnaires carried out, it shows that the response of subject T1 in accordance with the statement that the GeoGebra application is a digital learning medium that is very useful for adding insight, the rules for its use have been explained in the instructions for use and the use of GeoGebra applications when learning encourages subjects to find new ideas. The subject also knows how to use the GeoGebra application and makes him more motivated to learn and also able to think creatively.

The GeoGebra application can be used for algebraic material. The subject also knows the functions of the features and information in the application that GeoGebra is easy to understand, can help him to understand new things, make

it more active, not boring, can be used by anyone and can increase interest learn and help him in refining a new work and ideas. The response of the subject T1 in accordance with the statement that his friends were involved when studying GeoGebra media, could help him exchange ideas with friends and were enthusiastic in doing practice questions. Subject T1's response stated that it was not in accordance with the statement regarding the GeoGebra application, which was made just for fun and felt lost after using the application. Figure 1 shows student answer in making a common external tangent of two circles using the GeoGebra application.

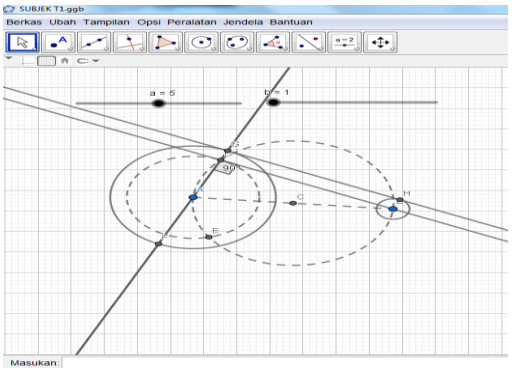

Figure 1. Subject T1 Answer

2. Description of Digital Literacy Response Results from Subject T2

The following is an excerpt from the interview of subject T2 toward GeoGebra learning media.

Researcher : "*When using the GeoGebra application, what difficulties did you experience?*"
T2 : "*Alhamdulillah, there are no difficulties, Mam.*"
Researcher : "*What information do you get when using the GeoGebra application?*"
T2 : "*I can paint external tangents of two circles and can be used for algebraic material as well.*"
Researcher : "*What obstacles did you face when working on practice questions in the GeoGebra application?*"
T2 : "*So far, there have been no obstacles, Mam.*"

From the results of the interviews and response questionnaires conducted, it shows that the response of subject T2 in accordance with the that the GeoGebra application is a digital learning medium that is very useful for adding insight, the rules for its use have been explained in the content of the

instructions for use and the use of GeoGebra applications when learning encourages subjects to find new ideas. The subject also knows how to use the GeoGebra application and makes him more motivated to learn and also able to think creatively.

The GeoGebra application can be used for algebraic material. The subject stated that the information in the GeoGebra application is easy to understand, can help student understand new things, make students more active, not boring, their friends are involved when studying GeoGebra media, anyone can use it, can help students to exchange ideas with friends about the material being studied and increase interest in learning and help him improve work and new ideas. Subject T2 already knows the function of the features in the GeoGebra application and is enthusiastic about working on practice questions. The response of subject T2 is not in accordance with the statement regarding the GeoGebra application, which was only made for fun and felt a loss after using the application. Figure 2 shows student answer in making a common external tangent of two circles using the GeoGebra application.

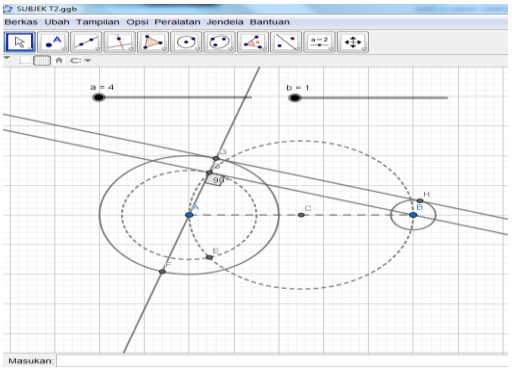

Figure 2. Subject T2 Answer

3. Description of Digital Literacy Response Results from Subject S1

The following is an excerpt from the interview of subject S1 toward GeoGebra learning media.

Researcher : "*When using the GeoGebra application, what difficulties did you experience?*"

S1 : "*The difficulty is there are too many icons. Sometimes, I try to make it myself because I am not used to using the GeoGebra application.*"

Researcher : "*What information do you get when using the GeoGebra application?*"

S1 : "*The steps are correct in drawing a common external tangent of two circles.*"

Researcher : "*What obstacles did you face when working on practice questions in the GeoGebra application?*"
S1 : "*Nothing*"

From the results of the interviews and response questionnaires conducted, it shows that the response of subject S1 in accordance with the statement that the GeoGebra application is a digital learning medium that is very useful for adding insight, the rules for its use have been explained in the content of the instructions for use, the subject already knows how to use the GeoGebra application, can add his knowledge, helps him to understand new things related to geometry, his enthusiasm in doing practice questions and GeoGebra media makes him more active and less tedious.

The subject's response feels in accordance with the statement that the use of the GeoGebra application during learning encourages him to find new ideas, makes him more motivated in learning, and makes him able to think creatively by knowing the functions of the features and information in the GeoGebra application that are easy to understand, his friends are also involved when studying media GeoGebra, can be used by anyone and help him to exchange ideas with friends about the material given, can increase interest in learning, help him in improving work and new ideas. The subject's response felt that it was not in accordance with the statement regarding the GeoGebra application, which could be used for algebraic material as well. The response of subject S1 is not in accordance with the statement regarding the GeoGebra application, which was only made for fun, and felt a loss after using the application. Figure 3 shows the student answer in making a common external tangent of two circles using the GeoGebra application.

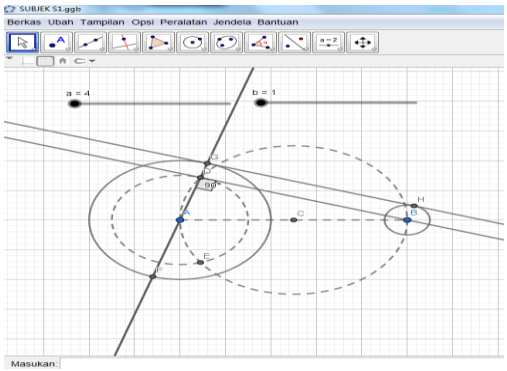

Figure 3. Subject S1 Answer

4. Description of Digital Literacy Response Results from Subject S2

The following is an excerpt from the interview of subject S2 toward GeoGebra learning media.

Researcher : "*When using the GeoGebra application, what difficulties did you experience?*"
S2 : "*The difficulty is understanding many icons, Mam.*"
Researcher : "*What information do you get when using the GeoGebra application?*"
S2 : "*The information is from the icons because it really helps to draw a common external tangent of two circles.*"
Researcher : "*What obstacles did you face when working on practice questions in the GeoGebra application?*"
S2 : "*Nothing, Mam*"

From the results of the interviews and response questionnaires conducted, it shows that the response of subject S2 in accordance with the statement that the GeoGebra application is a digital learning medium that is very useful for adding insight, the rules for its use have been explained in the content of the instructions for use, and encourages the subject to find new ideas, the subject already knows how to use the GeoGebra application and makes him more motivated in learning, broadens knowledge. The GeoGebra application is not only used for geometry material but also for algebra material, knowing the functions of the features and information in the application is GeoGebra, easy to understand, and can be used by anyone and anytime.

The subject's response in accordance with the statement of being able to think creatively and find it difficult to master the material. The GeoGebra application helps him understand new things, and he is enthusiastic about doing practice questions and makes him more active. His friends are involved when studying media GeoGebra and help him exchange ideas with friends, increase his interest in learning, and help him in improving his work and new ideas. The subject's response is not in accordance with the statement that it was disadvantaged to learn using media GeoGebra. Figure 4 shows student answer in making a common external tangent of two circles using the GeoGebra application.

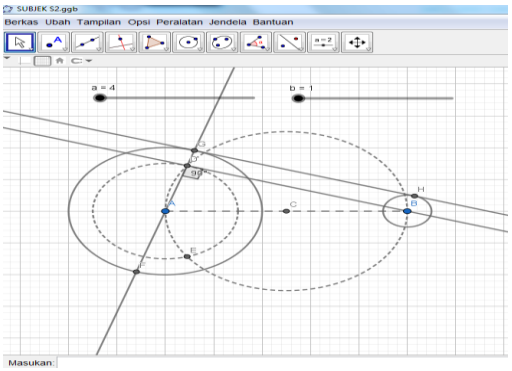

Figure 4. Subject S2 Answer

5. Description of Digital Literacy Response Results from Subject R1

The following is an excerpt from the interview of subject R1 toward GeoGebra learning media.

Researcher : "*When using the GeoGebra application, what difficulties did you experience?*"
R1 : "*I find it difficult when mastering the material about a common external tangent of two circles through the GeoGebra application.*"
Researcher : "*What information do you get when using the GeoGebra application?*"
R1 : "*How to draw a circle and a common external tangent of two circles that is correct and can be used for algebraic material.*"
Researcher : "*What obstacles did you face when working on practice questions in the GeoGebra application?*"
R1 : "*Nothing*"

From the results of the interviews and response questionnaires carried out, it shows that the response of subject R1 in accordance with the statement that the GeoGebra application is a digital learning medium that is very useful for adding insight, the rules for its use have been explained in the content of the instructions for use and encourages the subject to find new ideas, the subject already know how to use it and make him more motivated in learning, can add insight into knowledge and be able to think creatively, but the subject feels in accordance with the statement that the subject finds it difficult to master the material and does not fully understand when using the GeoGebra application when the teacher explains, it can be used for algebraic material and the information in the GeoGebra application is easy to understand, it can help him to understand new things related to the material and is enthusiastic about working on the given practice questions, his friends are involved when learning

from GeoGebra media, helps him to exchange ideas with friends about the material given and helps him improve a work or new ideas, but the subject does not like explaining the GeoGebra application to his friends and when there is a question from the teacher regarding the application, the subject is just silent.

The response of subject R1 is in accordance with the statement that the application of GeoGebra can be used by anyone and any time and can increase interest in learning. However, the subjects' response is not in accordance with the statement that the GeoGebra application is only for fun and feels disadvantaged by learning to use media GeoGebra, making him more active and less tedious knowing the functions of the features in the GeoGebra application. Figure 5 shows student answer in making a common external tangent of two circles using the GeoGebra application.

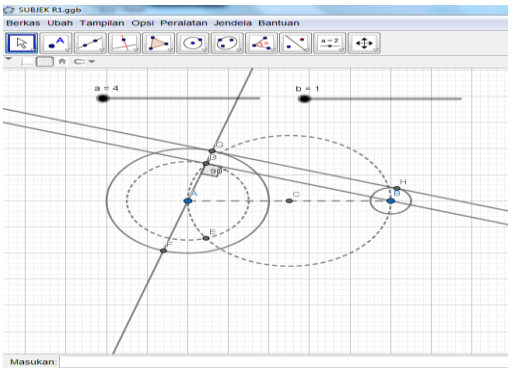

Figure 5. Subject R1 Answer

6. Description of Digital Literacy Response Results from Subject R2

The following is an excerpt from the interview of subject R2 toward GeoGebra learning media.

Researcher : "*When using the GeoGebra application, what difficulties did you experience?*"
R2 : "*Difficulty with many icons, so it's hard to memorize, and the size of the application is large.*"
Researcher : "*What information do you get when using the GeoGebra application?*"
R2 : "*Hmm .. I don't know.*"
Researcher : "*What obstacles did you face when working on practice questions in the GeoGebra application?*"
R2 : "*The problem when making a parallel line to connect circle A to B.*"

From the results of the interviews and response questionnaires conducted, it shows that the response of subject R2 in accordance with the statement that the GeoGebra application is a digital learning medium that is very useful for adding insight, the rules for its use have been explained in the content of the instructions for use, and learning encourages subject to find new ideas, the subject already knows how to use the GeoGebra application which makes him more motivated in learning, and can increase knowledge. The GeoGebra application can be used for algebraic material, but the subject does not know the functions of the features in the GeoGebra application and does not understand the information contained in it, and the subject is difficult to learn because the size of the application is too large. The GeoGebra application can help him to understand new things related to the material and be enthusiastic in doing practice questions, his friends are involved when studying media GeoGebra and its use can be used by anyone and at any time, and the GeoGebra application can help him in improving work and new ideas.

The subject feels less in accordance with the statement that they fully understand when using the GeoGebra application when the teacher explains it, and the learning process makes him able to think creatively, making him more active and less tedious. The response of the subject who feels it is not in accordance with the statement that the GeoGebra application could help him to exchange ideas with friends about the material provided, the subject would be silent if there were questions from the teacher regarding the GeoGebra application and it was not in accordance with the statement that it was only used for fun. The subject's response is not in accordance with the statement that he felt a loss in learning using the GeoGebra application. Figure 6 shows student answer in making a common external tangent of two circles using the GeoGebra application.

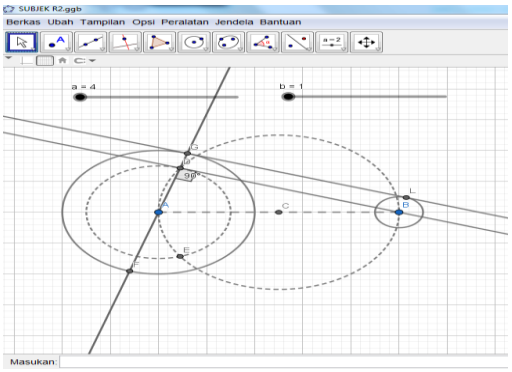

Figure 6. Subject R2 Answer

Based on the data obtained, subjects with high self-directed learning ability, T1 and T2, were able to show good responses regarding the results of the student response questionnaire to digital literacy. Subject T1 and T2 know the information in the GeoGebra application, be able to do practice questions correctly, and be able to know the features that are in the GeoGebra application. When using GeoGebra media, subjects T1 and T2 work on the given practice questions easily and correctly according to the steps and methods described, can participate with friends by exchanging ideas about GeoGebra applications, and are also able to develop their creativity to improve a new work or idea in the GeoGebra application.

Subjects with moderate self-directed learning ability, S1 and S2, show good responses regarding the results of student responses to digital literacy questionnaires in using GeoGebra learning media. They can find out the information in the GeoGebra application, able to do practice questions correctly. However, they have not been able to understand the features of the GeoGebra application fully. When using GeoGebra, the subjects S1 and S2 work on the given practice questions easily and correctly according to the steps and methods described. They can participate with friends or the community by exchanging ideas about GeoGebra applications, being able to develop their creativity to improve new works or ideas in GeoGebra application by trying it first.

Subjects with low self-directed learning ability, R1 and R2, were able to show a good response to the results of the student response questionnaire to digital literacy in using GeoGebra learning media. Subjects R1 and R2 were able to know the instructions for use in the GeoGebra application, but they could not fully understand the material through the GeoGebra application and the information contained therein. When they use GeoGebra media, subjects R1 and R2 worked on the exercises given correctly according to the steps and methods described. Subjects R1 and R2 had not been able to participate with friends or the community by exchanging ideas about the application on the GeoGebra grounds. They could not explain the creativity they have to develop new works or ideas in GeoGebra application.

Table 2. Explanation of Digital Literacy in Self-Directed Learning Categories

Indicators of Digital Literacy	**Subjects with High Self-Directed Learning**	**Subjects with Medium Self-Directed Learning**	**Subjects with Low Self-Directed Learning**
Students can understand each content that is on digital media	Able to understand any instructions for use or tutorials on media GeoGebra	Able to understand instructions for use on GeoGebra application even though not all of them	Be able to understand every instruction of use from the GeoGebra application
Students can know the use of digital media	Be able to know how to use the GeoGebra application	Able to know how to use the GeoGebra application even though it is difficult to understand its many icons	Be able to know the use in GeoGebra application and increase knowledge
Students are able to analyze the information contained in the media content	Being able to know the information and features that exist in the GeoGebra application	Not able to know the features in the GeoGebra application	Not being able to understand the material and information in the GeoGebra application fully
Students are able to do exercises on digital media	Able to do practice questions correctly	Able to understand new things and do practice questions correctly	Able to understand new things and do practice questions correctly

Indicators of Digital Literacy	Subjects with High Self-Directed Learning	Subjects with Medium Self-Directed Learning	Subjects with Low Self-Directed Learning
Ability to participate with society through digital media	Able to exchange ideas with peers and the community regarding painting in the GeoGebra application	Able to exchange ideas with anyone and at any time regarding painting in the GeoGebra application	Not being able to participate with friends or the public about the GeoGebra application
The ability to produce and create digital media content	Able to develop a new work or idea	Able to help refine a new idea in GeoGebra application	Not being able to develop new works and ideas in GeoGebra application

CONCLUSION

The ability of students with high self-directed learning on digital literacy met all digital literacy indicators, namely, understanding instructions for use and how to use the GeoGebra application, explaining information in the GeoGebra application, doing the exercises correctly, being able to participate in exchanging ideas with friends and the community, and developing the creativity that is owned by new works or ideas in GeoGebra application.

The ability of students with moderate self-directed learning on digital literacy only meets five digital literacy indicators, namely understanding instructions for use, explaining information in the GeoGebra application, doing practice questions correctly, being able to participate in exchanging ideas with friends and the community, and trying to develop their creativity into work or new ideas in GeoGebra application.

Students with low self-directed learning on digital literacy only meet two digital literacy indicators, namely, understanding instructions for use and doing practice questions correctly.

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