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## Students' Mathematical Understanding Ability On The Material Of The Linear Absolute Value Of One Variable Assisted By A Digital Module

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### ABSTRACT

Mathematical understanding ability is an ability that is considered important for students because it is the basis for other mathematical abilities. However, it turns out that students' mathematical comprehension ability is still low, especially in the part of linking between concepts. The problem must be solved so that the student does not have difficulties in receiving the material. To solve this problem, researchers choose teaching materials in the form of digital modules that are considered capable of improving mathematical understanding skills. This research uses a qualitative approach with a case study method. Data collection is carried out by means of interviews, tests, and observations. Data processing is carried out by means of reduction, presentation and drawing conclusions. The data is presented in the form of a qualitative description. The results showed that digital modules are practical and usable. However, it is inversely proportional to the mathematical comprehension ability of students who are still in instrumental understanding, including: 1). Understanding the material, 2). Mentioning examples and not examples, 3). Explaining using its own language, 4). Draw conclusions for simple questions but have not been able to have a good impact on students in terms of linking between concepts. So that the existence of digital modules is still unable to solve the problem of low relational understanding ability.

**Keywords :** Digital Module, Inequality, Mathematical Comprehension Ability

### ABSTRAK

Kemampuan pemahaman matematis merupakan kemampuan yang dianggap penting dimiliki oleh siswa karena merupakan dasar bagi kemampuan matematis lain. Namun ternyata kemampuan pemahaman matematis siswa masih rendah khususnya pada bagian mengaitkan antar konsep. Masalah tersebut harus diselesaikan agar siswa tidak mengalami kesulitan dalam menerima materi. Untuk menyelesaikan masalah tersebut peneliti memilih bahan ajar berupa modul digital yang dinilai mampu meningkatkan kemampuan pemahaman matematis. Penelitian ini menggunakan pendekatan kualitatif dengan metode studi kasus. Pengambilan data dilakukan dengan cara wawancara, tes, dan observasi. Pengolahan data dilakukan dengan cara reduksi, penyajian dan penarikan kesimpulan. Data disajikan dalam bentuk deskripsi kualitatif. Hasil penelitian menunjukkan bahwa modul digital praktis dan dapat digunakan. Namun berbanding terbalik dengan kemampuan pemahaman matematis siswa yang masih berada pada pemahaman instrumental di antaranya: 1). Memahami materi, 2). Menyebutkan contoh dan bukan contoh, 3). Menjelaskan menggunakan bahasanya sendiri, 4). Menarik kesimpulan untuk soal-soal sederhana tetapi belum mampu memberikan dampak baik bagi siswa dalam hal mengaitkan antar konsep. Sehingga adanya modul digital masih belum mampu menyelesaikan masalah rendahnya kemampuan pemahaman relasional.

**Kata kunci:** Kemampuan Pemahaman Matematis, Modul Digital, Pertidaksamaan.

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## PRELIMINARY

Students' mathematical abilities vary, one of which is mathematical comprehension ability. Mathematical comprehension ability is often used as the basis for other mathematical abilities (Hardiyanti et al., 2017). The reason for mathematical comprehension ability is said to be the foundation because basically to get other abilities a student must first have the ability to understand. In mathematics lessons, the material is arranged systematically so that it is very necessary to understand one of the specific concepts or materials and then support the understanding of the next concept or material. If one of the concepts or materials is not understood by the student, it is likely that the student will have difficulty in understanding the next concept / material related to the initial concept. Mathematical comprehension skills are important for students to have (Dini et al., 2018; Fitriani & Maulana, 2016; Putra et al., 2018). If students do not have this ability, they will have difficulty in absorbing mathematical material in the learning process. But it turns out that students' mathematical comprehension ability is still low (Asih et al., 2018; Handayani, 2015; Ramdani & Apriansyah, 2018).

The low mathematical comprehension ability of students is found in many parameters of associating one concept with another (Fauziah et al., 2019; Lestari et al., 2019; Suhar et al., 2019). Many students are still unable to solve problems by relating one concept to another. On the contrary, students will easily solve questions related to memorization of materials and cases of routine or simple questions. In the end, researchers want the comprehension ability taken is a high level of comprehension ability or relational understanding ability.

Skemp (1976) states that there are two types of comprehension abilities, namely instrumental and relational understanding. Instrumental understanding which means memorizing something and being able to apply it to routine or simple calculations and doing things algorithmically. In this understanding, students only memorize formulas and only follow the order of work from the example questions. So it tends to have difficulty solving a problem that has a different problem. Meanwhile, meaningful relational

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understanding can perform meaningful calculations and be able to relate one concept to another. Meaningful means being able to do calculations on broader problems. Based on Ausubel's opinion in Gazali (2016) Meaningful learning is a process of relating new information to several relevant concepts, the learning process is not just memorization but connects between concepts and produces a complete understanding. So that no matter how difficult the questions provided, students will be able to solve the problem by trying to find the initial idea of solving and relating concepts to one another.

By Lestari & Yudhanegara (2015) mathematical comprehension ability is the ability to absorb mathematical ideas. While NCTM is in Hendriana et al., (2017) put forward several indicators regarding the ability to understand mathematically, one of which is being able to identify and make examples and not examples. So it is concluded that the ability to understand mathematics is the ability of students to absorb mathematical material, mention examples and not examples, relate one concept to another, and be able to draw conclusions to solve problems contained in mathematics. The definition will then be used as a reference or benchmark for the description of students' mathematical understanding.

If the problem of low mathematical comprehension ability of students is allowed, it will provide difficulties for students and teachers in the learning process. Therefore, teaching materials are made, one of which is a module and made digital offline which can be accessed on a computer or laptop device so that learning is more interactive. The digital module is one of the systematic teaching materials and can be equipped with videos, images, animations, text and quizzes so that it is easy for students to understand according to their level of knowledge and age, and students can learn independently (Fajarini et al., 2016; Nugent et al., 2015). The existence of digital modules is also able to create interactive learning. The word interactive itself can be interpreted as a two-way learning process between students and teachers, between students, and students with learning media (Nurhairunnisah & Sujarwo, 2018). Digital modules presented using a computer or laptop have the advantage of feedback on student responses and can improve student understanding (Lasmiyati & Harta, 2014; Rumansyah, 2016).

The existence of a digital module is considered to be able to improve students' mathematical understanding ability (Lasmiyati & Harta, 2014; Putrawangsa & Hasanah, 2018; Umbara & Rahmawati, 2018). The nature of modules that require independent learning can provide benefits for students to assess their own learning outcomes (Indariani et al., 2018; Muhimatunnafingah et al., 2018; Putri, 2020). Another advantage of the digital

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module is that students can adjust the speed and duration of the learning process they have so that in the end they are able to learn the material according to the learning tempo.

The digital module used in this study is the result of research that has been carried out by Indariani et al. (2018) on the material of the inequality of the linear absolute value of one variable. The results obtained in the study using a quantitative view showed that the digital module had a fairly high practicality, namely at 84.78% for low cognitive, 88.41% for moderate cognitive ability of students, and 88.77% for high cognitive ability (Indariani et al., 2018). This shows that digital modules are worth using both in the classroom and in self-study. This research is a follow-up to previous research which was only up to the design of digital modules.

The implementation of the digital module is carried out to see an overview of the ability to understand the mathematical understanding of the material for the linear absolute value of one variable. The reason why researchers choose one-variable linear inequality material is because the material was chosen by the researcher beforehand to be loaded in a digital module. Digital modules are designed based on problem-solving capabilities. This ability is a High Order Thinking (HOT) capability whose one of the indicators is choosing and implementing strategies to solve problems (Akbar et al., 2018). Of course, in solving the HOT problem, it is necessary to link between concepts. This is in line with the definition of mathematical comprehension ability chosen by the researcher, where one of the indicators is to link between concepts. Reinforced by the reason that mathematical comprehension ability is the basis of all HOT abilities. Before seeing the picture of mathematical understanding ability, it will be seen first the practicality of digital modules based on a qualitative view.

The practicality of digital modules depends largely on user satisfaction. If the user does not experience difficulties in using it then the digital module is said to be practical (Fitri et al., 2013; Hamdunah, 2015). So that the practicality of teaching materials can be measured if users do not experience difficulties in the sense that they are easy and appropriate to use during learning both in class and independently.

The purpose of this study is to see the ability of students' mathematical understanding at the time of learning the absolute linear value of one variable with the help of a digital module. Before seeing students' mathematical comprehension ability, it will first be seen the practicality of digital modules using a qualitative view because in previous research the practicality of digital modules was seen based on quantitative views. So that in

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the end it can be seen the relationship between practical digital modules and students' mathematical understanding ability.

## **METHODS**

This research uses a qualitative approach with a case study method. Qualitative Approach is research that intends to understand the phenomenon of what the subject of the study experiences for example behavior, perception, motivation, action, etc., holistically and by means of description in the form of words and language, in a special context that is natural and by utilizing various natural methods (Moleong, 2007). Reinforced by Lofland and Lofland Views in Moleong (2007) suggests that the main data sources in qualitative research are words and actions, the rest are additional data such as documents and others. In qualitative research, the main instrument lies in the researcher himself, both the object of research, the tool of the analyst, and the theoretical basis or definition are very dependent on the subjective factors of the researcher (Chariri, 2009). The reason why the researcher chose the description method is because in this study the researcher only relied on the response of the subject under study regarding the problems raised in the study. While the case study method is based on opinions Creswell (2003) is a research approach that investigates the events, activities and processes of a group or individual.

Data collection is carried out by means of interviews, tests and observations. There are several ways of dividing the types of interviews, according to Patton in Moleong (2007) divided into three ways, one of which is the approach using general interview instructions. The interview method requires the interviewer to outline and outline the points that are formulated and do not need to be asked in order (Moleong, 2007). Interviews were conducted face-to-face with respondents. The following is an outline of the interview material that the researcher will submit to students as respondents.

- a. How do students think about the material of the inequality of the linear absolute value of one variable?
  - b. Are there difficulties in understanding the material at the time of learning in the classroom?
  - c. How students' understanding of the one-variable linear inequality material contained in the module?
  - d. Whether the student can give an example and not an example on the material of the linear absolute value of one variable?
  - e. How students think about learning using digital modules?
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- f. Whether the existence of the digital module is able to have a good impact on student understanding?

From some of these questions it develops into detailed questions. In addition to conducting interviews, researchers conduct tests to collect data. The test questions used in this study are questions that have been listed in the digital module that has been made by the previous researcher. Equipped with questions made by researchers to meet the achievement indicators of the definition of mathematical understanding taken. Indicators of such achievement include absorbing mathematical material, mentioning examples and not examples, associating one concept with another, and being able to draw conclusions to solve mathematical problems.

The questions tested on students include all practice questions, evaluations and final competency tests totaling 40 questions. In addition, there are 6 additional questions made by researchers. Each question is in accordance with the definition of comprehension ability and the indicators taken. The goal is to find out the ability of students' mathematical understanding of the material of the linear absolute value of one variable. The scoring guidelines depend on the assessment of the researcher according to the qualitative view. As long as the researcher knows the limits of the definition of achieving mathematical comprehension ability, the researcher sticks to the indicators contained in the definition taken. To complete the data collection, observations are made.

Observations are made to see how students use digital modules, whether or not there are difficulties in using modules. Access explanatory videos, do practice questions, evaluations and interactive final competency tests. Seeing the presence or absence of errors when using the digital module. It is also seen how students respond directly to learning using the help of digital modules. Then after all the data from the interview, test and observation are collected, data processing is carried out.

Data processing by means of reduction, presentation and drawing conclusions. Data reduction is intended so that the data obtained is not piled up. After reducing the data, then the next step is the presentation of the data. From a set of data that has been arranged, it is possible to take action. The presentation of data can be presented with tables, figures and descriptions of words. After that, draw a conclusion from the results of the research conducted. in the form of a qualitative description.

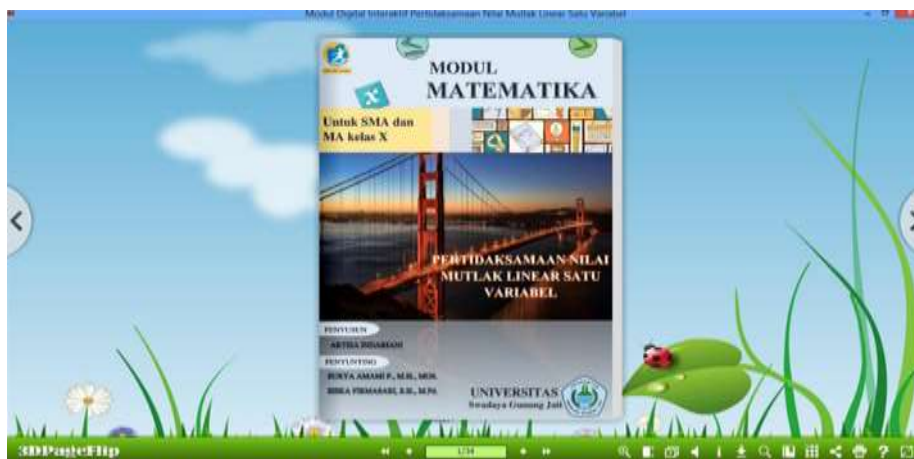
Sampling using purposive sampling technique. So that the subject is taken on the basis of certain provisions and objectives. The subject of the study was only one class XI student who came from a high school in Majalengka district based on the recommendation

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of the mathematics teacher who taught the student. According to the definition according to Ary in Tanujaya et al (2017) which mentions that "A case study is a type of ethnographic research study that focuses on one unit, such as one individual, one group, one organization or one program". In line with Surachman in Lumataw (2021) that a case study is a study that focuses on a case in detail. Reinforced by the opinions of Bogdan and Biklen in (Moleong, 2007) which states that a case study is a study that focuses on one individual with a specific background in detail. So from the definition of the case study method and sampling using sample techniques, it is very possible to take one student whether it has low, medium, or high cognitive. Strengthened by the practicality of digital modules that can be implemented for all cognitive levels of students (Indariani et al., 2018). The taking of one student is assisted by an objective assessment from the mathematics teacher who teaches the student with the criteria of a student who has studied the material of the one-variable linear absolute value and is able to operate a digital module on a laptop or computer device.

## RESULTS AND DISCUSSION

The practicality of the digital module used by students turns out to be satisfied with the attractive appearance and can help motivate students in learning the material of the linear absolute value of one variable. It can be seen in Figure 1 regarding the selection of fonts, colors, and font sizes, as well as the selection of background colors is appropriate. So that between the appearance of the content and the background, there is a contrast. The module usage guidelines are described in detail. The existence of guidelines for the use of modules makes students aware of the use of certain buttons to be used in the learning process in the classroom or independently.



**Figure 1. Digital Module Cover Display (Indariani et al., 2018)**

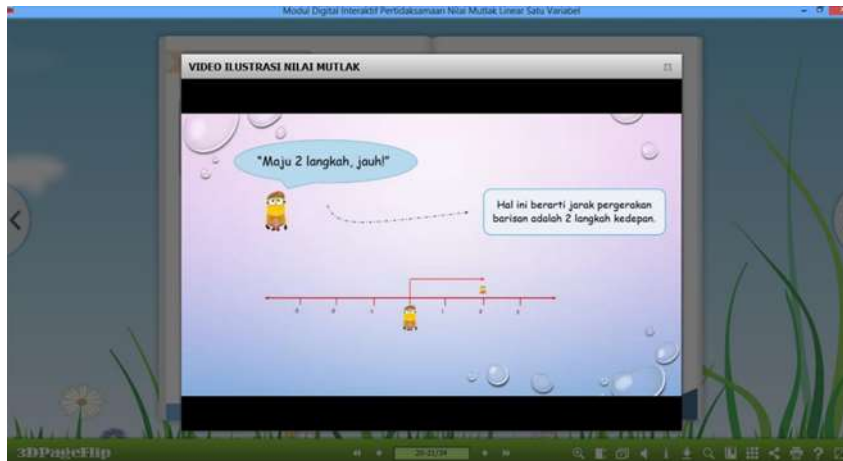


Figure 2. Animated Video Display (Indariani et al., 2018)

In addition to the usefulness of the buttons in the digital module, students argue that the selection of images is in accordance with the material loaded. Moreover, writing formulas that are made interesting drawings make it easier for students to memorize formulas or concepts that are considered important. The existence of an animated video (Figure 2) adds to student satisfaction so that they become more familiar with the concept of the material. Overall the presence of animated images and videos does not interfere with the appearance of the module and even provides optimal functionality. But there are some mistakes in entering the answer key made by the creator of the module.

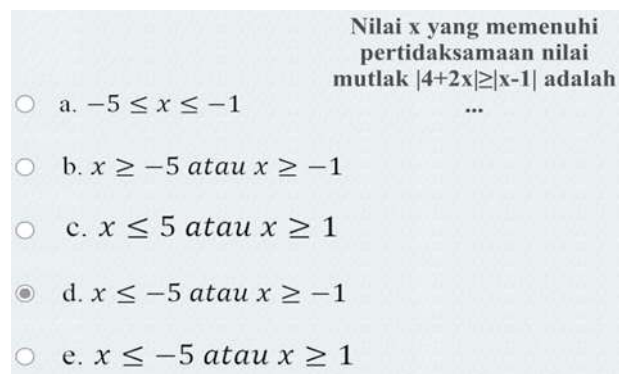


Figure 3. Question Number 4 of the Final Competency Test

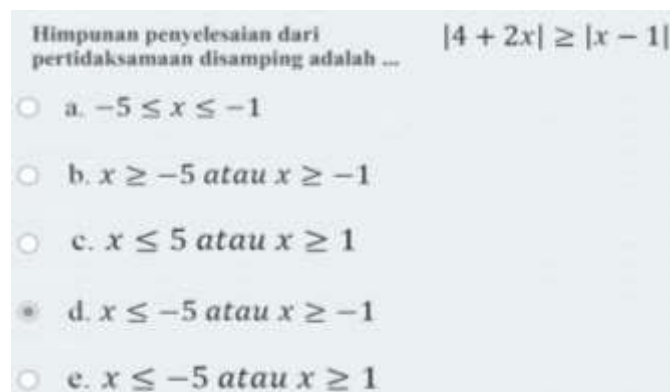


Figure 4. Question Number 5 final competency test



#	Question	Awarded	Points	Result
2.	menentukan himpunan penyelesaian yang benar untuk bentuk ...		10	
3.	Jarak antara bilangan -5 dan 7 adalah ...		10	
4.	Nilai x yang memenuhi pertidaksamaan nilai mutlak $ 4+2x  \geq  x-1 $ adalah ...	10	10	✓
5.	Himpunan penyelesaian dari pertidaksamaan disamping adalah ...	0	10	✗
6.	Solusi penyelesaian dari pertidaksamaan nilai mutlak $ 5x-3  \geq -9$ adalah ...		10	
7.	Penyelesaian dari pertidaksamaan nilai mutlak $ 8x-2  + 4 \geq 18$ adalah ...		10	
8.	Himpunan penyelesaian dari $ 7x-2  < 4$ adalah ...		10	

**Figure 5. Answer Key and Points On The Question**

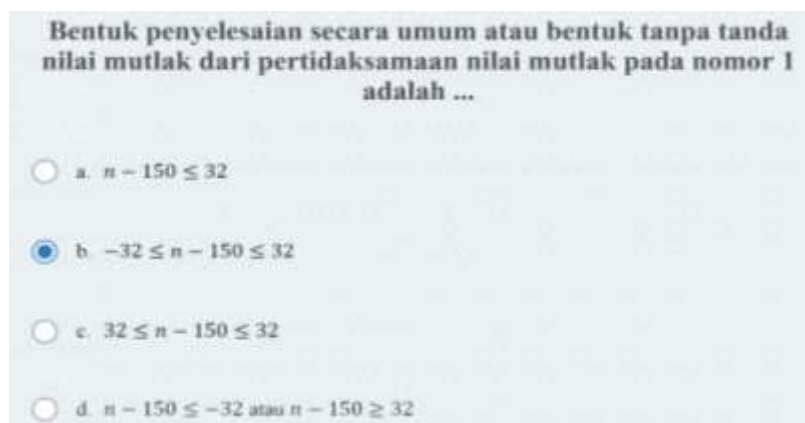
From figures 3 and 4, it shows that the two questions are the same and have the same answer choice. However, in the answer result section (Figure 5) it turns out that the two questions are not the same. This means that there is an error entering the answer key on the digital module exercise performed by the module creator. The presence of an error in entering the answer key in the module does not greatly hinder its usefulness. Students think that the existence of a digital module is quite helpful to make learning easier. The material presented is easy to understand with simple material notes or concepts. The existence of a digital module is quite able to attract students' curiosity in learning the material in it. So that overall students feel satisfied and do not experience difficulties or errors at the time of use.

Students are satisfied with the existence of a digital module that is used as a tool in the learning process. Teaching materials in this case digital modules are said to be practical if users feel satisfaction and do not experience difficulties in using digital modules (Auliah et al., n.d.; Fitri et al., 2013; Hamdunah, 2015). In this study, it shows that the digital modules created by previous researchers can be said to be practical based on a qualitative view. In line with what is earned by Indariani et al (2018) which states that the digital module is practical based on a quantitative view. However, this result is inversely proportional to the results of the picture of mathematical comprehension ability. The results that show a picture of students' mathematical comprehension ability are presented in the following table.

**Table 1. Overview of Students' Mathematical Comprehension Ability**

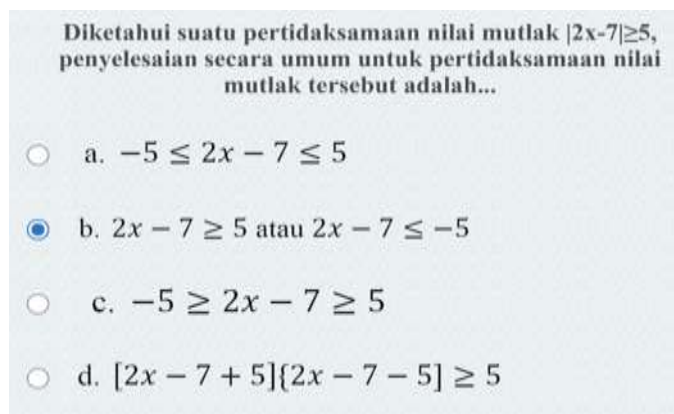
Indikator	Keterangan
1. Students are able to absorb mathematical material	Students are already able to absorb mathematical material, strengthened at the interview. That the student is already able to mention even memorize the peting things contained in the module, such as the type of number interval, the properties of the inequality, the properties of the absolute value, and the forms of absolute value inequality as well as the general form of its completion.

Indikator	Keterangan
2. Students are able to cite examples and not examples	Students are already able to name examples and not examples. Students can already distinguish between inequality and inequality and name examples and not examples of both.
3. Students are able to explain a situation in different words (using their own language)	Students are already able to explain the differences in inequality and inequality. It has even been able to name the type of inequality. Students have been able to explain the characteristics of several types of number intervals contained in the module. The types of such number intervals are presented in a short table. But students are already able to explain it.
4. Students are able to relate a concept to another concept	Students have not been able to relate one concept to another. Strengthened when completing the test questions, including: Students still cannot change the form of the notation of inequality and the notation of intervals into the form of number lines. Students experience misunderstandings at the time of changing signs of inequality. Students cannot come up with the initial idea of solving non-routine questions, namely changing the question sentences into mathematical sentences.
5. Students are able to draw conclusions	Students are already able to draw conclusions on routine questions. But still can't draw conclusions on non-routine questions



**Figure 6. Question Number 2 Exercise 3 Completion of Absolute Value Inequality**

The student answers point b and gives the reason that at the time he chose the answer in figure 6, he recalled only the possible form of completion of the  $|n - 150| < 32$  which the answer is  $-32 < n - 150 < 32$ . Because the answer does not exist, the student guesses an answer that is almost the same as the answer he gets, only to change the sign of inequality, from what was  $<$  to  $\leq$ . This means that students only just guess the correct possibility and use their memory in solving the problems contained in the problem.



**Figure 7. Question Number 5 Exercise 3 Completion of Absolute Value Inequality**

In question number 5 (figure 7) the student has answered the question correctly. This matter only relies on memory at the time of solving it. Given what the student said at the time of the interview, that the student memorized the form of completion of each of the absolute value inequalities described in the module. So it is very easy for students to answer this question.

**Table 2. Oral Test Results of Inequality and Inequality**

No.	Soal	Jawaban Siswa
1	Determine whether the form below is an inequality or an inequality! $x > 6$	Inequality
2	Determine whether the form below is an inequality or an inequality! $10 < 9$	Inequality
3	Determine whether the form below is an inequality or an inequality! $\sqrt{2x+3} \geq 5$	Inequality
4	Determine whether the form below is an inequality or an inequality! $2x^2 \leq x - 5$	Inequality
5	Determine whether the form below is an inequality or an inequality! $ 5x - 10  \geq 7$	Inequality
6	Determine whether the form below is an inequality or an inequality! $15 > 3 + 7$	Inequality

Overall, from the results of the oral test in table 2 regarding inequality and inequality, it can be seen that students have been able to recognize the forms of inequality and inequality well. Reinforced by the student's reasoning at the time of the interview, that inequality is a form of open statement and contains variables. Meanwhile, inequality is a form of statement that contains only numbers where the numbers on the left segment are not the same as the numbers on the right segment.

Jenis interval apakah yang terdapat dalam pertidaksamaan pada soal nomor 1?

a. Interval Terbuka

b. Interval Tertutup

c. Interval Setengah Terbuka

d. Garis Lurus

**Figure 6. Problem Number 2 Exercise 2 Number Interval**

In question number 2, the number interval exercise (figure 6) is related to the question in figure 8. Students answer the problem by only paying attention to the form of the notation. The shape of the inequality  $0 < x < 6$  is a type of open interval, reinforced by the reason that the characteristic of the open interval is that it contains the sign "less than", since both signs are "less than", so the student answers that the form is a type of open interval. In this answer, it can be seen that students use their memory alone to solve problems. Given that in the module it has been shown about the characteristics of open intervals, usually the limitation is to use regular parentheses

Bentuk notasi interval yang tepat dibawah ini untuk pertidaksamaan pada nomor 1 adalah ...

a. [0,6)

b. (0,6)

c. [0,6]

d. (0,6]

**Figure 7. Problem Number 3 Exercise 2 Number Interval**

From question number 3 (figure 7) relating to figure 6 the student answers point b with the reason that the characteristic of the open interval is marked by the presence of ordinary brackets, because both are "less than" signs, the student says that the two parentheses that limit the numbers are ordinary brackets. The opinion is true according to the characteristics of the open interval presented in the module. Even students also say that the characteristic of closed intervals usually uses square brackets and for half-open intervals usually uses regular brackets and square brackets. However, understanding of it is only understanding that requires memory, considering that in the module it has been shown the characteristics of the form of inequality notation.

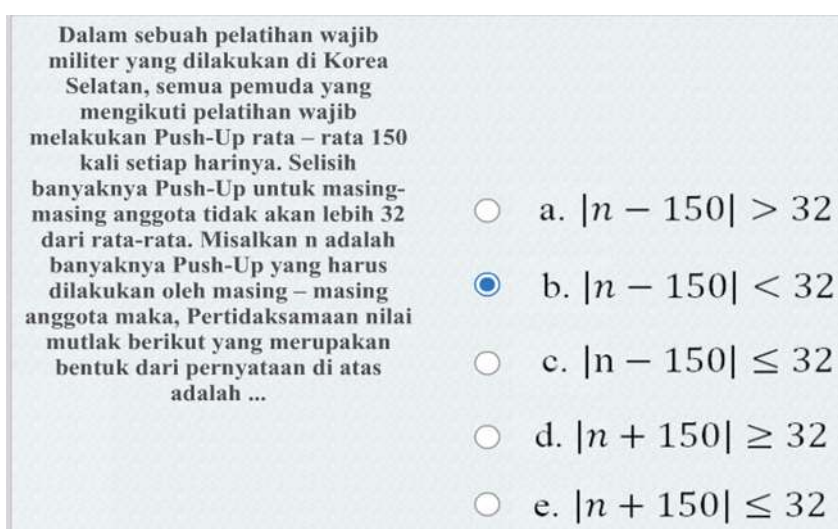
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From table 1, students can only solve routine/ simple questions. Because in these simple questions, students are only required to rely on their memory skills. besides the student is already able to name examples and not examples. however, in general, students can already absorb the mathematical material presented in the digital module even though they do not understand the entire material. Because of this, students have difficulty in solving problem problems that require students to relate concepts to one another. As shown in the following figure.



**Figure 8. Absolute Value Inequality Exercise Answers**

Based on figure 8 students are still unable to change the form of the inequality into the form of a line of numbers. Students also argue that in the module there is no explanation of changing the form of inequality notation into the form of a number line, although there are examples of number lines but students still do not understand how to draw number lines. so that students are still unable to relate the concept of inequality to the concept of number intervals.



**Figure 9. Absolute Value Inequality Exercise Answers**

In figure 9, students cannot change the language of the question into the form of an absolute score. The student experienced a fallacy in changing the language "will not be more than 32 than the average" which translates as a sign "<" should be the correct answer is " $\leq$ ". From these mistakes indicate that students are still unable to relate between concepts and in the end cannot come up with the correct initial idea to solve the problem in the problem.

9. Tentukan penyelesaian dari  $|3-2x| > |3x-2|$   
 Penyelesaian:  
 $|3-2x| > |3x-2|$   
 $\Leftrightarrow [(3-2x)^2 + (3x-2)^2] [(3-2x)^2 - (3x-2)^2] > 0$   
 $\Leftrightarrow (3-2x+3x-2)(3-2x-3x+2) > 0$   
 $\Leftrightarrow (x+1)(-5x+5) > 0$   
 Jadi  $(x+1) > 0$  atau  $-5x+5 > 0$   
 $x > -1$  atau  $-5x > -5$   
 $x > \frac{-5}{-5}$   
 $x > 1$   
 Jadi  $H_p = \{x | x > 4 \text{ atau } x > 1; x \in \mathbb{R}\}$

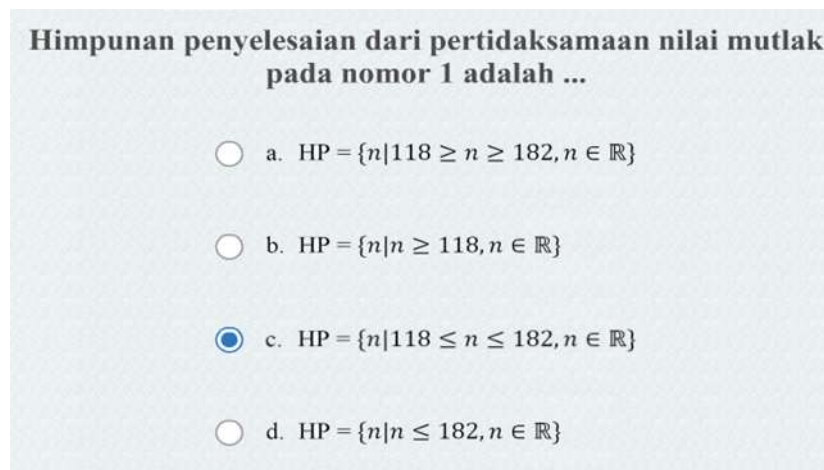
**Figure 10. Absolute Value Inequality Exercise Answers**

Students experience a mistake when solving the problem in figure 10. Students write the answer that  $-5x > -5$  when both fields are multiplied by -1 the result is  $x > \frac{-5}{-5} > 1$ . This is not quite right, based on the nature of the inequality that if the two segments are multiplied negatively, it will change the sign of inequality. Actually, students already know this trait. However, it turns out that students only memorize the nature of the inequality, it is proven that at the time of the interview the student has been able to name the nature related to figure 10 but in practice the student does not understand about this trait. This means that students understand this trait instrumentally, meaning that students only understand to the extent of memorization, not understanding relationally, namely understanding that can relate one concept to another concept.

6. nilai pandang = p  
 lebar = l  
 Diketahui  $\Rightarrow p-l=6$   
 $\Rightarrow p+p+l+l=3$   
 Ditanyakan berapa nilai persegi pandang.

**Figure 11. Absolute Value Inequality Exercise Answers**

In the answer to question number 6 (figure 11), students can already understand the question by writing down what is known and asked. But students are unable to turn question sentences into mathematical sentences. Students are also mistaken in changing the sentence of the question "the length and width of a rectangle is less than 6 cm" where the answer should be  $|p - l| < 6$ . This means that students still can't convert to mathematical sentences correctly. Then students also have difficulty when determining the initial idea to solve the problem presented in the problem. This shows that students are still less able to relate the concept of flat wake to the concept of absolute value inequality.



**Figure 12. Question Number 3 Exercise 3 Completion of Absolute Value Inequality**

In the answer to question number 3 (figure 12) related to the question in figure 9, the student has actually answered correctly. But the student revealed that he only guessed the answer without counting it. Given that the entire answer presented is identical (containing the same numbers), so the student is able to estimate the shape of the answer that will appear. Strengthened by the examples of questions that have been learned by students regarding the form of absolute value inequality, so that students can estimate the correct answer only need to review the signs of inequality only need to review the signs of inequality. Because in the matter of containing signs more than equal to and less than equal to, then the answer is a certain value bounded by those signs with a certain number as well. This shows that in solving the problems contained in figure 12, students only need to remember the form of solving the sample questions contained in the module. Students do not perform calculation steps in solving the problem.

The weakness of students in associating one concept with another indicates that the student is still not said to have the ability to understand relational. According to the definition Skemp (1976) that the ability to understand relational can be seen if students are

able to relate one concept to another. Students cannot meet these conditions. So it turns out that the existence of a practical digital module can have a good impact on students' instrumental understanding of several things, including: 1). Understanding the material, 2). Mentioning examples and not examples, 3). Explaining using their own language, 4). Drawing conclusions for simple questions. However, the digital module is still unable to have a good impact on students in terms of relating between concepts. This result is inversely proportional to the result of (Farida et al., 2019; Lasmiyati & Harta, 2014) which shows that the existence of a digital module is able to improve mathematical understanding ability.

Regarding students' mathematical understanding, researchers divide several criteria so that students are said to understand mathematical material. First, students have been able to absorb material regarding the absolute linear value of one variable. This is strengthened by the ability of students to remember the concepts or materials presented. In addition, students have been able to apply formulas or concepts to simple cases, so that they can solve routine or simple problems. Overall based on opinions Hendriana et al. (2017) that students are said to have mathematical abilities if they are able to absorb material, remember formulas and concepts, can apply formulas and concepts to routine / simple cases, and apply formulas and theorems in problem solving. Second, students have been able to mention examples and not examples seen from table 2 which means that students are considered to meet one of the indicators of mathematical comprehension ability. In line with Hendriana et al. (2017) that one of the indicators of a student's mathematical comprehension ability is being able to name examples and not examples.

But the definition of comprehension ability taken by researchers is not limited to that. Researchers want the ability to understand relational which in this case students are able to solve problems by relating one concept to another. However, students have difficulties when faced with problems that require to associate one concept with another, such as not being able to change the value limit of a variable into a line interval. In the previous discussion, students could only do one-variable linear calculation questions related to memory only. Reinforced at the time of the interview, the student easily mentions the properties of the inequality, the general forms of solving the inequality of the linear absolute value of one variable, but cannot solve the problems that require the student to relate one concept to another. Another weakness of students is that they cannot do complex problems and cannot translate everyday language into mathematical models.

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Overall, students' high-level comprehension ability is still said to be rudimentary (Table 1). This is complemented by the reason that one of the criteria has not been met, namely not being able to relate one concept to another concept which will affect at the time of decision making or the final result of a problem. Reinforced with opinions Skemp (1976) that meaningful relational understanding can perform meaningful calculations and is able to relate one concept to another. In line with this statement, researchers consider that students still lack understanding of the material of the absolute linear value of one variable. So that the use of digital modules has a good impact on students' instrumental understanding but is still unable to have a good impact on students' relational understanding ability.

## **CONCLUSION**

Students are satisfied with the existence of a digital module. The existence of digital modules does not make students difficult in the learning process. on the contrary, the existence of a digital module helps students in absorbing the material, equipped with animated images and videos that increase students' understanding of the material contained in the module. So that from this satisfaction shows that the modules used can be said to be practical. This is inversely proportional to the results of the picture of mathematical comprehension ability.

Students' mathematical comprehension ability is considered to still be instrumental understanding not relational. In accordance with the definition taken by the researcher that the ability to understand is when students are able to absorb mathematical material, mention examples and not examples, associate one concept with another, and be able to draw conclusions to solve mathematical problems. The overall indicator is an indicator of relational comprehension ability that is redefined by the researcher according to the definition of Skemp. If one of the indicators is not achieved, the student's comprehension ability is still in the instrumental understanding ability.

Strengthened by a qualitative view, as long as the researcher knows the limits of the definition regarding the achievement of students' mathematical understanding ability, the researcher sticks to the definition. It turns out that students have not been able to relate one concept to another. This is shown when students complete non-routine questions about relating between concepts (Figure 11). Students have difficulty in doing questions that require to associate one concept with another. On the contrary, students find it easy and can solve routine questions, being able to mention examples and not examples. So that

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overall students still cannot be said to have a high level of comprehension ability or relational understanding. From the results of the description of practicality and mathematical understanding ability of students, it shows that practical digital modules are not always able to have a positive impact on students' relational understanding ability. So that the selection of digital modules to solve existing problems is considered less than optimal in this case.

This research adds insight into the picture of students' mathematical comprehension abilities through digital module assisted learning and an overview of digital module practicality. The contribution of this research for teachers is to find out an overview of students' understanding that can be used as consideration for compiling learning plans and teaching materials. The results of this research can be used as material to develop digital modules by considering students' mathematical comprehension abilities. Become a new research on students' mathematical comprehension ability through digital module-assisted learning by considering student motivation, misconceptions, or considering the learning environment in mathematics if the learning uses digital modules.

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