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Analysis of Mathematical Concept Understanding and Responsibility in Learning with Padlet

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Abstrak

Pemahaman konsep matematis dan tanggung jawab merupakan aspek penting dalam pembelajaran Kalkulus, namun mahasiswa masih mengalami kesulitan dalam memahami konsep. Penggunaan Padlet sebagai media kolaboratif ditawarkan untuk mendorong partisipasi aktif. Penelitian ini bertujuan untuk menganalisis kemampuan pemahaman konsep matematis dan tanggung jawab pada pembelajaran dengan Padlet. Metode penelitian menggunakan kualitatif dengan strategi studi kasus. Data diperoleh dari mahasiswa mata kuliah Kalkulus Integral di Program Studi Pendidikan Matematika, Universitas Islam Nusantara melalui wawancara, observasi, dokumentasi, dan angket. Teknik pengolahan data: pengumpulan, reduksi, penyajian, dan penarikan kesimpulan. Hasil menunjukkan mahasiswa belum memenuhi seluruh indikator kemampuan pemahaman konsep matematis; M1 dan M5 hanya memenuhi satu indikator, sementara M2 tidak memenuhi satupun. Sebaliknya, tanggung jawab meningkat, ditunjukkan oleh konsistensi M5 serta peningkatan M1 dan M2. Padlet menumbuhkan tanggung jawab, tetapi perlu dioptimalkan dengan menambahkan fitur diskusi aktif yang lebih terstruktur untuk mendukung ketercapaian kemampuan pemahaman konsep matematis.
Kata Kunci: Pemahaman Konsep Matematis; Tanggung Jawab; Padlet

Abstract

Mathematical concept understanding and responsibility are crucial in Calculus learning, yet students often struggle with these concepts. The use of Padlet as a collaborative media is offered to encourage active participation. This study aims to analyze the ability to understand mathematical concepts and responsibility in learning with Padlet. The research method used is qualitative with a case study strategy. Data were obtained from students of the Integral Calculus course in the Mathematics Education Study Program, Universitas Islam Nusantara, through interviews, observations, documentation, and questionnaires—data processing techniques: collection, reduction, presentation, and conclusion. The results indicate that students have not met all the mathematical concept understanding ability indicators. Specifically, M1 and M5 meet only one indicator, while M2 does not meet any. In contrast, responsibility increases, indicated by the consistency of M5 and the increase in M1 and M2. Padlet fosters responsibility, but it needs to be optimized by adding more structured active discussion features to support the achievement of understanding mathematical concepts.
Keywords: Mathematical Conceptual Understanding; Responsibility; Padlet

I. INTRODUCTION

Prospective mathematics educators at the tertiary level need to understand mathematics through various skills, including the ability to understand mathematical concepts. The ability to understand mathematical concepts is the ability to absorb and comprehend mathematical ideas (Aleupah et al., 2023). The ability to understand mathematical concepts is essential for students to grasp them flexibly and accurately. It is also the primary key in the learning process, because by having a good understanding of mathematical concepts, students will find it easier to solve various problems given (Giriansyah et al., 2023; Yani et al., 2022). Indicators of mathematical concept understanding ability according to Yuliani et al., (2018) include: 1) Restating a concept; 2) Classifying objects according to specific properties (according to the concept); 3) Giving examples and non-examples of the concept; 4) Presenting concepts in various forms of mathematical representation; 5) Developing necessary or sufficient conditions for a concept; 6) Using, utilizing, and selecting specific procedures or operations; 7) Applying problem-solving concepts or algorithms.

Mathematical concept understanding is still relatively low. Students often struggle to apply the concepts taught, particularly when faced with questions of varying forms. Students still depend on the example questions given by the educator. This study is based on observations conducted in April 2024, focusing on Differential Calculus learning among second-semester students in the Mathematics Education Study Program at Nusantara Islamic University. This condition is in line with research by Nawafilah & Masruroh (2024), which shows that students generally have difficulty solving calculus problems, especially when the form of the problem is different from the lecturer's example, because their learning pattern tends to memorize formulas and remember the steps for solving, so that a deep understanding of the concept is not formed.

Students' mathematical conceptual understanding can be optimized if educators innovate in designing learning that suits their individual needs and provide opportunities for them to actively construct their own understanding (Aleupah et al., 2023; Saepuloh, Luritawaty, & Afriansyah, 2024). This way, students have a long-term memory of concepts rather than simply memorizing them. One approach is to utilize technology-based learning media. The use of technology in education makes mathematics learning more effective and improves the quality of conceptual understanding (Syaifuddin & Rahmasari, 2023). One technology-based media that can be used is Padlet.

Padlet is a versatile learning media that integrates various formats (text, images, videos, audio) to facilitate reflection and expression of understanding according to students' learning styles, proven to increase activeness in learning, make mathematics easier and more interesting, which ultimately has a significant impact on improving learning outcomes compared to conventional methods (Alsyahrani et al., 2024; Pratama & Nuryadi, 2022; Wahyuni & Fadly, 2025). Research by Zainuddin et al. (2020) shows that Padlet helps improve

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students' understanding of the topics they are studying. Padlet facilitates independent learning with flexible access, making it easier for educators to monitor and assess the extent of students' responsibility for their learning process.

A great sense of responsibility will have a positive effect on the learning outcomes achieved, the obligation to complete the tasks given with full dedication, make maximum effort, and be willing to bear the consequences of these actions by working together in student group activities (Erlianingsih & Rakhmat Riyadi, 2019; Kuncoro et al., 2021; Syafitri, 2017). Wulandari & Radia (2021) mention that the indicator components include: the nature of learning responsibility, carrying out tasks, obeying campus rules, obeying and respecting teachers, admitting mistakes, being disciplined, and maintaining the school's good name. However, the results of the initial interview revealed students' habit of procrastinating on assignments, demonstrating a lack of accountability. Student responsibility in learning can be fostered through an interest in the use of technology and collaborative platforms such as Padlet (Rohman et al., 2025).

The novelty of this research lies in the analysis of students' mathematical concept comprehension and responsibility in learning with Padlet, in contrast to previous research that only emphasized the cognitive aspect of technology-based learning without analyzing the affective aspect (Syaifuddin & Rahmasari, 2023). Therefore, this research is expected to provide a novel contribution to the practice of technology-assisted mathematics learning.

II. METHOD

The research employed a qualitative method to describe the mathematical concepts, understanding ability, and responsibility in learning through Padlet. The data sources were spoken and written words from students of the Mathematics Education Study Program at Universitas Islam Nusantara in the 2024/2025 academic year, taking the Integral Calculus course. Moleong stated that the data sources in qualitative research are words and actions, while documentation and other data are additional data (Inco & Rofiq, 2022).

The research sample was determined using a purposive sampling technique based on the results of discussions with the lecturers teaching the Differential Calculus course, consisting of three students, namely M1, M2, and M5. According to Kumara (2018), the purposive sampling technique is a method of selecting research subjects based on specific characteristics that the researcher has determined.

Data were collected through interviews, observations, documentation, and questionnaires. Interviews were conducted face-to-face using a structured interview guide as an instrument. The purpose of the interviews was to obtain more accurate information regarding students' mathematical conceptual understanding, responsible attitudes, and use of Padlet.

Observations were conducted in three stages according to Spadley (Armanda et al., 2020), namely: (a). Descriptive

observation involves a general and comprehensive exploration that does not raise research questions, focusing instead on describing social situations comprising three key components: place, actors, and activities. This stage was carried out on April 26, 2024, in the Differential Calculus class at Universitas Islam Nusantara with seventh-semester students of the Mathematics Education Study Program as observers; (b). Focused observation was conducted to identify the research focus, specifically the ability to understand mathematical concepts, the effectiveness of Padlet-assisted learning, and student responsibility. Observations used an observation sheet instrument with four assessment categories: 1 (Very Poor), 2 (Poor), 3 (Good), and 4 (Very Good); (c). Selected observation involves describing the focus found and linking categories together.

Documentation of the interview and observation activities consisted of pictures and recordings of the activities. In addition, the researcher documented the results of the mathematical concept comprehension test conducted at the final meeting. The essay-based test consisted of 7 questions arranged based on the sub-learning outcomes of the course and indicators of mathematical concept comprehension. The test instrument was validated by two expert validators with experience in teaching Calculus courses. The validation results showed that the test instrument was very valid for use in the study.

Questionnaires are used to determine students' learning responsibilities. According to Sugiyono (Prawiyogi et al., 2021), a questionnaire is a data collection technique that involves providing respondents with a series of written questions or statements to answer. The questionnaire was administered to students twice: at the beginning and end of the research meeting. This was done to assess students' responsibilities after learning with Padlet. The online questionnaire consisted of 28 statements, comprising 14 positive and 14 negative statements. The statements are arranged based on responsibility indicators. The questionnaire uses a Likert scale with four points. Categories are: strongly disagree (STS), disagree (TS), agree (S), and strongly agree (SS). The instrument was validated by two expert validators in the fields of learning and psychology. The validation results were classified as very valid for use.

According to Miles and Huberman (Zulfirman, 2022), data analysis techniques consist of: 1) Data collection, namely the process of obtaining information that allows conclusions to be drawn and actions taken. In this study, data collection was carried out through interviews, observations, documentation, and questionnaires; 2) Data reduction is a process of sorting, focusing, and simplifying data according to research variables. In this study, data reduction was carried out by sorting the interview results through recordings to ensure the truth of the expressions, as well as simplifying the data from observations, tests, and questionnaires by conducting assessments according to scoring guidelines; 3) Data presentation, is the process of compiling information in the form of descriptions, charts or tables, so that it is easy to understand. In this study, the data

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presented is the result of a reduction in the form of descriptions; 4) Drawing conclusions, taken from the data that has been analyzed by looking at the relationship between various research instruments. In this step, the researcher concludes that the ability to understand mathematical concepts and responsibilities in learning is facilitated by using Padlet.

III. RESULT AND DISCUSSION

From the research that has been conducted, the results of students' mathematical concept understanding and responsibilities are visible. Table 1 below presents the achievement of students' mathematical concept understanding.

Table 1.
Achievement of Mathematical Concept Understanding Indicators

Mathematical Conceptual Understanding Indicator	M1	M2	M5
Restating the concept	v	x	v
Provide examples and non-examples	x	x	x
Classifying objects	x	x	x
Presenting concepts in various forms of representation	x	x	x
Using, utilizing and selecting certain procedures	x	x	x
Developing necessary or sufficient conditions for a concept	x	x	x
Applying concepts or algorithms in problem solving	x	x	x

Description: v = Fulfilled, x = Not yet fulfilled

Based on the research results, the achievement of students' mathematical concept understanding ability indicators is still low. This suggests that students often struggle to grasp concepts in depth. This finding aligns with the opinion of Rosita et al. (Hoiriyah, 2019), who stated that the average score for students' mathematical comprehension is still below the Minimum Competency (KKM); thus, as a class, they have not yet achieved mastery.

M1 was only able to fulfill one of the seven indicators of mathematical concept understanding ability, namely the indicator of restating a concept. The following is an analysis of each test answer M1.

The indicator restating the concept with fulfillment. Test results, interviews, and observations indicate that M1 is accustomed to repeating concepts at home and finding appropriate formulas, thus achieving this indicator.

The indicator provides examples and non-examples of a concept that has not been fulfilled. Interview results support the test results, where M1 found it challenging to simplify numbers even though he could distinguish between the concepts of exponents—natural and common exponents, as well as natural and common logarithms. The observation results showed a suitable category for this indicator, but M1's accuracy in solving the problem was still lacking. This condition is in line with Betts' findings (Ulfa & Hamdi, 2025), which stated that mature technical skills do not always follow conceptual mastery. In this context, the problems experienced by M1 confirm that the main obstacle lies not in fundamental understanding, but in consistency and care in calculating integrals.

The indicator for classifying objects according to specific properties has not been met. M1 tends to rely on memorizing formulas, theorems, or derived properties to classify objects. Observation results are in the good category for this indicator.

Differences may be influenced by group learning, resulting in better achievement of the indicator.

The indicator of presenting concepts in various forms of mathematical representation has not been met. M1 can only perform an example, but it is incorrect in the subsequent step, such as deriving an integral. The interview shows that M1 understands the importance of an example and understands the integral formulas for general exponential functions and general logarithms, but is unable to apply them correctly. Conversely, the observation results are classified as very good, possibly due to group learning that allows for discussion, resulting in better understanding compared to individual tests.

M1 has not been able to fulfill the indicators of using, utilizing, and selecting specific procedures/ operations. M1 uses the exponential differentiation rule, but the derived result is incorrect due to an incorrect simplification process. During the interview, M1 stated that he needed to identify the problem before selecting the appropriate procedure, but during the test, he still had difficulty applying it correctly. The difference in the observation results, which showed a good category, is likely because the group discussion helped M1.

The indicator for developing necessary or sufficient conditions for a concept has not been met. In the test, M1 incorrectly derived the natural logarithm. This is consistent with the interview, where M1 stated that he still relies on experiments without a clear theoretical basis. Observation results also indicate that M1's achievement on this indicator is still lacking.

The indicator for applying concepts/algorithms in problem-solving has not been met. M1 incorrectly substituted the problem into the function. In order to develop conceptual understanding, students must be able to solve problems routinely, independently, and meaningfully, making it easier for students to apply concepts/algorithms to the problem-solving process. In the interview, M1 stated that the initial step in solving a problem is to identify the problem, sort out the known and unknown information, and then answer according to that information. Even though he understands the steps basically, M1 was still less careful in substituting questions into the correct mathematical form. Meanwhile, based on the results of observations, this indicator was in the good category, possibly because M1 was less accustomed to or careful in answering test questions.

In addition to the ability to understand mathematical concepts, the affective domain of responsibility for M1 was also obtained, which is presented in Table 2.

Table 2.
Affective Domain of Responsibility M1

Indicator	Results After Learning with Padlet
The nature of learning responsibility	Increase
Carry out tasks	Increase
Obey campus rules	Increase
Obey and respect educators	Increase
Admit mistakes	Increase
Discipline	Consistent
Maintaining the good name of the Mathematics Education study program	Increase

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Indicators of the nature of learning responsibility increased after learning with Padlet. This aligns with interview results, which confirmed M1's commitment to attending lectures, such as arriving on time and remaining disciplined despite obstacles. Observations also showed that M1's sense of responsibility was in the good category, indicating a high awareness of his learning obligations.

The task completion indicator improved after learning with Padlet. Interview results indicated that M1 had a good understanding of the assignment material, although he still had doubts about completing it. Based on the observation results, M1 completed the task on time and did not rely on others.

Indicators of compliance with campus regulations have increased after learning with Padlet. The results of the interview confirmed that M1 complied with the dress code as future professional educators. This is in line with observation results, which show that this indicator is in the excellent category.

Indicators of obedience and respect for educators increased after learning with Padlet. Interview results showed that M1 felt that guidance from educators helped with understanding and self-evaluation. Observations reinforced this, as M1 demonstrated an attitude of obedience and respect for educators.

The error-admitting indicator improved after learning with Padlet. This is consistent with interview results, where M1 attempted to confirm the accuracy of an answer before refuting it, reflecting an openness to accepting mistakes. Observation reinforces this: M1 is willing to accept feedback from educators or classmates well, not pressured, and willing to bear the consequences without protest.

Discipline indicators are consistent both before and after learning with Padlet. The results of interviews and observations show that M1 is disciplined in returning items, is punctual in accessing and uploading assignments, is present on time, wears polite clothing, and obeys the rules.

Indicators of maintaining the good name of the Mathematics Education study program, consistent both before and after learning with Padlet. Interviews revealed that M1 recognized the importance of preparing materials before and after lectures; however, they were not prepared to participate in competitions that promote the Mathematics Education Study Program's good name.

Furthermore, M2 was unable to meet any of the indicators for mathematical concept comprehension. The following is an analysis of M2's mathematical concept comprehension test answers.

The indicator of restating a concept is not met, because M2 does not use standard notation such as Dx. In the interview, M2 admitted to understanding the concept through repeated learning and practice. However, when explaining the definition of the hyperbolic function and its derivative, M2 was not yet able to systematically explain the concept.

The indicator of providing examples and non-examples of a concept was not met, because M2 answered incorrectly. The results of the interview revealed that M2's strategy still relied on memorizing

trigonometric formulas to be able to determine the derivatives and inverse integrals of trigonometric functions.

The indicator for classifying objects based on their concepts and properties was not met, as M2 provided the wrong answer. This is supported by the results of interviews, where M2 only relied on the derivative formulas of general exponential and general logarithmic functions without being able to explain the relationship between their properties.

The indicator for presenting concepts in various mathematical representations has not been met, as M2 incorrectly entered the integral formula, leading to errors in subsequent steps. This is supported by interview and observation results, which showed that M2 only emphasized the use of formulas without understanding how to present concepts in other forms.

The indicators for using, utilizing, and selecting specific procedures/operations have not been fulfilled. M2 made a mistake in estimating and deriving u and v, so the solution is not correct. Correct. A lack of conceptual understanding prevented M2 from selecting the correct procedure. This was supported by interview and observation results, which showed that although M2 recognized the importance of formulas, he did not fully understand how to select and apply the correct procedure to solve the problem.

The indicator for developing necessary or sufficient conditions for a concept has not been met, as M2 provided an incorrect answer. Answer a is clearly incorrect. In question b, M2 failed to add the derivative of $(3x^2 - 2x)$ and instead decreased $(3x^2 - 2x)$ the denominator. This is supported by interview and observation results, which indicate that mastery of the concept of necessary conditions is still lacking.

The indicator for applying concepts/algorithms in problem-solving has not been met. M2 incorrectly used the quadratic equation formula, resulting in an incorrect final result. This aligns with interview and observation results, which showed that M2 did not demonstrate a thorough understanding of the subsequent steps after entering the formula. Consequently, M2 was unable to apply the correct algorithm in problem-solving.

In addition to the ability to understand mathematical concepts, the affective domain of responsibility for M2 was also obtained, which is presented in Table 3.

Table 3.
Affective Domain of Responsibility M2

Indicator	Results After Learning with Padlet
The nature of learning responsibility	Consistent
Carry out tasks	Increase
Obey campus rules	Consistent
Obey and respect educators	Decrease
Admit mistakes	Increase
Discipline	Consistent
Maintaining the good name of the Mathematics Education study program	Increase

Indicators of the nature of learning responsibility are consistent between before and after learning with Padlet. The results of interviews and observations show that M2 has good responsibility by following the lecture provisions.

The task completion indicator improved after learning with Padlet. Interview and observation results showed that M2 was

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able to complete all the tasks available on Padlet well.

Indicators of adherence to campus regulations were consistent between before and after learning with Padlet. Interview and observation results showed that M2 understood the importance of complying with campus regulations, including dress codes, as the campus is a place for learning, not for other purposes.

Indicators of obedience and respect for teachers decreased after learning with Padlet. This aligns with interview results, which showed that M2 felt reluctant and afraid when the lecturer gave directions, likely due to concerns about difficulty understanding the material. This feeling of reluctance reduced openness and active participation in learning.

The indicator of admitting mistakes increased after learning with Padlet. Interview and observation results showed that M2 accepted feedback well and consequences for breaking rules without protest.

Discipline indicators are consistent between before and after learning with Padlet. This aligns with interview and observation results, which show that M2 is disciplined in accessing and uploading assignments on time.

The indicator for maintaining the good name of the Mathematics Education Study Program improved after learning with Padlet. Interviews showed that M2 understood the importance of serious study, although he had not yet fully implemented it. Observations indicated that M2 needed to improve his enthusiasm and learning strategies to achieve success and participate in events that could enhance the program's reputation.

Meanwhile, M5 was only able to fulfill one indicator of mathematical concept comprehension ability, namely the indicator of restating a concept. The following are the answers to the mathematical concept comprehension ability test by subject M5.

The indicator restates a fulfilled concept, as M5 provides the correct answer. This is in line with the interview results, where M5 can explain the definition of hyperbolic functions and their derivatives, comparing them with trigonometric derivative formulas, such as the derivative of cos x from the original − sin x to sinh x, and the derivative of sec x.tan x to −sech x.tanh x. The observation results support the finding that M5's achievement on this indicator is in the good category.

Indicators provide examples and non-examples of a concept that have not been met, because M5 still incorrectly provides examples that should not be included in the derivative and integral of inverse trigonometric functions. Interviews show that M5 identifies examples and non-examples based on the conformity of the form with the general formula, but is sometimes unable to answer questions correctly. Based on the results of observations, the achievement of this indicator is in the good category, but M5's mastery of the material is still lacking. This suggests that M5 lacks a solid understanding of the material.

The indicator for classifying objects according to specific characteristics was

not met, as M5 provided incorrect answers. Although M5 demonstrated his ability to group objects based on the type of operation or the type of problem presented during the interview and observation sessions, unfortunately, this was not reflected in his work on the problems.

The indicator for presenting concepts in various mathematical representations has not been met, as M5 provides incomplete answers. M5 demonstrates good skills in calculating and deriving integrals, but lacks thoroughness in its execution. The results of interviews and observations support this finding, showing that M5 can present concepts in the form of mathematical representations by analyzing the form of functions and graphs and understanding the initial steps of the example before integrating standard exponential and logarithmic functions. However, there is a lack of accuracy when working on the problems.

The indicators for using, utilizing, and selecting specific procedures/operations have not been met. M5 was able to select and apply procedures correctly, but was less precise in using parentheses, resulting in inaccurate results. This error was technical in nature, not due to a lack of conceptual understanding. This is supported by the interview results, where M5 was able to identify the question format first to determine the correct procedure. Observation results also confirmed that M5 was in the good category for this indicator.

The indicator of being able to develop the necessary/sufficient conditions for a concept has not been met. M5 derived the In function $3x^2 - 2x$ correctly, but in question (a), it did not provide an answer. This is different from the results of interviews and observations, where M5 understood the importance of analyzing question information to identify relevant conditions. This difference indicates that M5 still needs to explore the application of necessary and sufficient conditions in a problem more thoroughly.

The indicator for applying concepts/algorithms in problem-solving was not met, as M5 was unable to answer the question. Despite having a good basic understanding of problem-solving approaches, as evident from interviews and observations, his failure to answer the question was likely due to a lack of mastery of the specific material required for the question.

In addition to the ability to understand mathematical concepts, the affective domain of responsibility for M5 was also obtained, which is presented in Table 4.

Table 4.
Affective Domain of Responsibility M5

Indicator	Results After Learning with Padlet
The nature of learning responsibility	Decrease
Carry out tasks	Decrease
Obey campus rules	Increase
Obey and respect educators	Decrease
Admit mistakes	Decrease
Discipline	Increase
Maintaining the good name of the Mathematics Education study program	Increase

Indicators of the nature of learning responsibility decreased after learning with Padlet. Based on the Interview, M5 understands the importance of obeying rules, being on time, and not breaking

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them, but has not fully implemented these principles in their learning.

The task completion indicator decreased after learning with Padlet. Based on the interview results, M5 accessed various Padlet features and completed and uploaded assignments in a relatively timely manner.

The indicator of compliance with campus regulations increased after learning with Padlet. Interview and observation results showed that M5 understood the importance of dressing appropriately, arriving on time, and following the rules for using electronic devices properly.

The indicator of obedience and respect for educators decreased after learning with Padlet. Interviews and observations indicated that M5 understood the importance of adhering to campus rules and respecting lecturers as part of academic responsibility. This decrease occurred because M5's focus likely shifted to using Padlet, reducing the opportunity to demonstrate direct obedience.

The indicator of admitting mistakes decreased after learning with Padlet. M5 had a good understanding of how to politely refute others' opinions and provide more appropriate suggestions, reflecting an open attitude towards mistakes and improvements. Observations showed that M5 demonstrated a good attitude in receiving feedback and accepting the consequences of breaking rules without protest.

Discipline indicators improved after learning with Padlet. Interviews and observations showed that M5 maintained discipline regarding borrowed items. This reflects a disciplined attitude in maintaining responsibility for something used. Based on observations, M5 demonstrated discipline in accessing and uploading assignments, maintaining punctuality, and adhering to rules, such as arriving on time and wearing appropriate clothing.

The indicator for maintaining the good name of the Mathematics Education Study Program improved after learning with Padlet. Interviews and observations showed that this indicator was well achieved, with M5 studying diligently to achieve success.

Overall, the achievement of the mathematical concept understanding ability indicators M1, M2, and M5 is still not optimal. So students have difficulty in providing appropriate solutions. This is in line with the opinion of Giriansyah et al. (2023). Yani et al. (2022) emphasize that understanding mathematical concepts is crucial for students to grasp them flexibly and accurately. It is also the primary key to the learning process, as a good understanding of mathematical concepts enables students to solve problems more easily. The achievement of the indicator of students' mathematical concept understanding ability is better during classroom learning using Padlet than during tests. This suggests that the learning environment facilitated by Padlet in the classroom may offer support that is not readily available during test situations.

On the other hand, responsibility increased after participating in learning utilizing Padlet. This shows that students can use Padlet effectively to collaborate,

share ideas, and contribute to class discussions. Padlet encourages students to independently manage and present their contributions in a structured digital environment. This aligns with the opinions of Deni et al. and Purwanto et al., who suggest that teachers can utilize Padlet to create digital platforms where students can share their discussion results, collect their thoughts, and exchange knowledge about various concepts (Wahyuni & Fadly, 2025).

IV. CONCLUSION

The results of the study show that the use of Padlet in learning has a variety of impacts on the ability to understand mathematical concepts and Student responsibility. From these findings' research, Padlet has the potential to foster responsibility. However, it needs to be combined with more targeted learning strategies so that all indicators of mathematical conceptual understanding ability can be achieved. Educators are advised to optimize Padlet by adding a more structured, active discussion feature. This feature is expected to encourage interaction, shared understanding, and deepen collaborative conceptual mastery.

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