

Mathematics Under Pressure: Examining Learning Problems in the Era of Educational Globalization

Rahmad Basuki¹, Dani Surahman², Murniaty Romain³, Fahruh Juhaevah⁴

¹²³⁴ Universitas Islam Negri Abdul Muthalib Sangadji Ambon, Maluku, Indonesia

zakiahmad30401@gmail.com¹, surahmandani937@gmail.com², murniatyrumain@gmail.com³,
fahruh.juhaevah@uinambon.ac.id⁴

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ABSTRACT

This study aims to identify and analyze the problems of mathematics learning in the era of educational globalization influenced by global pressures (mathematics under pressure). The study used a qualitative approach with a case study design at MA Al Falah Debowae. Data were collected through observation, semi-structured interviews, and documentation using instruments in the form of observation guidelines, interview guidelines, and documentation sheets. The research informants consisted of two mathematics teachers, ten grade XI students, and one representative of the madrasah who acted as a key informant to provide perspectives on policies and institutional support for mathematics learning. Data were analyzed using the Miles and Huberman interactive model which includes data reduction, data presentation, and conclusion drawing. The results showed that the main problems include low student learning independence, disorientation of learning objectives that focus on results, and high mathematics anxiety (mathematics anxiety) which impacts low student motivation and participation. In addition, there is a gap between global demands such as higher order thinking skills (HOTS) and numeracy literacy with local conditions that are still limited in terms of teacher competency, curriculum implementation, and learning facilities. The implications of this research emphasize the importance of transforming learning through a student-centered approach, strengthening learning independence, improving teacher competence, and creating a humanistic and contextual learning environment so that mathematics learning becomes more meaningful and adaptive in the era of globalization.

ABSTRAK

Penelitian ini bertujuan untuk mengidentifikasi dan menganalisis problematika pembelajaran matematika di era globalisasi pendidikan yang dipengaruhi oleh tekanan global (*mathematics under pressure*). Penelitian menggunakan pendekatan kualitatif dengan desain studi kasus di MA Al Falah Debowae. Data dikumpulkan melalui observasi, wawancara semi-terstruktur, dan dokumentasi dengan menggunakan instrumen berupa pedoman observasi, pedoman wawancara, dan lembar dokumentasi. Informan penelitian terdiri atas dua guru matematika, sepuluh siswa kelas XI, serta satu perwakilan pihak madrasah yang berperan sebagai *key informant* untuk memberikan perspektif terkait kebijakan dan dukungan institusional terhadap pembelajaran matematika. Data dianalisis menggunakan model interaktif Miles dan Huberman yang meliputi reduksi data, penyajian data, dan penarikan kesimpulan. Hasil penelitian menunjukkan bahwa problematika utama meliputi rendahnya kemandirian belajar siswa, disorientasi tujuan pembelajaran yang berfokus pada hasil, serta tingginya kecemasan matematika (*mathematics anxiety*) yang berdampak pada rendahnya motivasi dan partisipasi siswa. Selain itu, terdapat kesenjangan antara tuntutan global seperti *higher order thinking skills* (HOTS) dan literasi numerasi dengan kondisi lokal yang masih terbatas dari segi kompetensi guru, implementasi kurikulum, dan sarana pembelajaran. Implikasi penelitian ini menekankan pentingnya transformasi pembelajaran melalui pendekatan *student-centered*, penguatan kemandirian belajar, peningkatan kompetensi guru, serta penciptaan lingkungan belajar yang humanis dan kontekstual agar pembelajaran matematika menjadi lebih bermakna dan adaptif di era globalisasi.

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INTRODUCTION

Mathematics, as one of the fundamental scientific disciplines, has a strategic role in shaping students' logical, analytical, and critical thinking abilities. However, within the context of educational globalization characterized by rapid technological advancement, increasingly intense academic competition, and demands for international standards, mathematics learning is instead facing various complex pressures (Janah & Yasin, 2024; Jabnabillah et al., 2026). These pressures arise not only from curricula that are increasingly dense and oriented toward high cognitive achievement, but also from social expectations that position mathematics as the primary indicator of students' academic intelligence, causing the learning process to focus more on final outcomes rather than deep conceptual understanding.

Various studies indicate that this condition contributes to the emergence of mathematics anxiety, low learning interest, and students' difficulties in relating mathematical concepts to real-life situations, compounded by the suboptimal utilization of digital technology by teachers due to limited pedagogical competence and digital literacy, which further widens the gap between global demands and classroom learning practices (Assidiq et al., 2025; Gusteti, 2024; Putri et al., 2025). Therefore, it can be concluded that the problems of mathematics learning in the globalization era are not merely technical in nature, but also structural and cultural, thus requiring innovative approaches that integrate technology, strengthen teacher competencies, and position students as active subjects so that these pressures can be transformed into opportunities to improve the quality of mathematics learning.

The phenomenon of Mathematics Under Pressure cannot be separated from the dynamics of changes in the global education system that demand high standardization and rapid adaptation to technological developments (Hajar, 2025; Hapsari & Noverli, 2025). Several recent studies reveal that pressure in learning mathematics is often triggered by overly dense curricula and test-based evaluation methods that emphasize speed and accuracy rather than students' thinking processes (Harahap, 2025; Mulyono, 2026). As a result, students tend to develop mechanistic learning patterns, such as memorizing formulas without understanding concepts, which ultimately impacts their low higher order thinking skills.

In addition, cross-country survey studies show that competitive learning environments and minimal emotional support from teachers further worsen students' psychological conditions, particularly in the form of academic stress and decreased self-confidence. Research also highlights the important role of teachers as facilitators who not only transfer knowledge but also create safe and supportive learning environments (Anuli & Djafri, 2025; Basyori, 2025). Nevertheless, several studies emphasize that this transformation has not been evenly implemented, especially in educational institutions that still have limited access to professional training and learning resources. Thus, previous research findings demonstrate that pressure in mathematics learning is a consequence of the imbalance between global demands and the readiness of the education system, thereby requiring continuous and contextual reforms.

The problems of learning in the era of educational globalization are not only related to technological integration, but also involve aspects of value transformation, learning culture, and educational orientation itself (Frisnoiry, 2024; Widiastuti & Rahmah, 2023). Several recent studies (2021–2025) indicate that globalization has encouraged a shift from knowledge-based learning toward competency-based learning; however, its implementation in practice still faces various obstacles (Kenanga & Aryani, 2024; Sidik et al., 2024). Quantitative studies and educational surveys found that many educational institutions have not been able to balance global demands with local contexts, causing learning to often lose its relevance to students' needs within their social environments (Luvianingtias et al., 2025).

Preliminary observations conducted at MA Al Falah Debowae indicate that the challenges experienced at the global level are also reflected in local educational practices. Several students remain highly dependent on teachers during learning activities and demonstrate limited initiative in independent learning. Mathematics learning tends to be oriented toward achieving examination scores rather than developing conceptual understanding. Furthermore, some students exhibit anxiety when solving mathematical problems, particularly those requiring analytical and higher-order thinking skills. These conditions are compounded by limitations in learning facilities and the uneven integration of technology into classroom

instruction. As a result, a gap emerges between global educational expectations and the realities of mathematics learning in the local context.

Previous studies have extensively examined mathematics anxiety, technology integration, numeracy literacy, and students' learning difficulties as separate issues. Other studies have focused on the implementation of HOTS-oriented learning and the challenges of educational globalization. However, limited research has investigated these issues simultaneously within a unified framework of global educational pressure, particularly in the context of mathematics learning in Islamic secondary schools. Existing studies also tend to emphasize either global educational demands or local learning conditions, while the interaction between both dimensions remains insufficiently explored. Therefore, there is a need for a more comprehensive analysis that examines how global educational pressures influence mathematics learning practices in specific local contexts.

The novelty of this study lies in its integrative perspective of "Mathematics Under Pressure," which conceptualizes mathematics learning problems as the result of interactions between global educational demands and local educational realities. Unlike previous studies that examined mathematics anxiety, learning independence, technological challenges, or globalization separately, this study analyzes these issues within a single analytical framework. Furthermore, the study provides contextual evidence from MA Al Falah Debowae, offering a localized understanding of how global pressures are experienced and negotiated in everyday mathematics learning practices.

Based on these considerations, this study aims to identify and analyze the various forms of mathematics learning problems that emerge in the era of educational globalization and to explain how global educational pressures interact with local learning realities. The findings are expected to contribute to the development of more humanistic, contextual, and student-centered mathematics learning strategies that are responsive to contemporary educational challenges.

METHOD

This study employed a qualitative approach with a case study design. This approach was chosen because the study aimed to identify and analyze in depth the various forms of problems that emerge in mathematics learning in the era of educational globalization (Huzali et al., 2024). Through the case study design, researchers were able to comprehensively explore data regarding the experiences, perceptions, and dynamics occurring among the research subjects, thereby producing a holistic and contextual description (Jabnabillah et al., 2026). This approach was considered relevant because the issues being examined are complex, multidimensional, and cannot be explained solely through a quantitative approach.

This research was conducted at MA Al Falah Debowae, located in Waelata District, Buru Regency, Maluku Province. The research site was selected because it represents a madrasah-based educational institution in a region that is also affected by the currents of educational globalization, yet still faces limitations in terms of resources, technology, and learning innovation. Institutionally, MA Al Falah Debowae operates under the supervision of Yayasan Durusul Falah Debowae, which plays a role in managing and developing Islamic education in the region. This condition makes the madrasah a relevant site for examining the gap between global demands and local realities in mathematics learning. The study was conducted over a period of three months, from January to March 2026. This duration enabled the researchers to conduct repeated observations, in-depth interviews, and data verification throughout the research process.

The research subjects in this study consisted of two mathematics teachers, ten students, and one representative from the madrasah administration who was directly involved in the learning process. The student participants were selected from Grade XI and represented various levels of academic achievement, including high, moderate, and low achievers. Grade XI was chosen because students had sufficient experience with mathematics learning and were frequently exposed to numeracy literacy and HOTS-oriented tasks. The selection of informants was conducted purposively by considering their active involvement, depth of experience, and understanding of the context and problems that became the focus of the study. Teachers were positioned as the main actors in implementing learning activities,

students as participants who directly experienced and interpreted the learning process, while the madrasah representative served as a key informant who provided perspectives related to policies, institutional support, and organizational dynamics surrounding learning practices. Data collection continued until data saturation was achieved, indicated by the repetition of similar information and the absence of substantially new findings from subsequent interviews and observations.

Data reduction was carried out by selecting, focusing, and simplifying the data according to the needs of the study. During this stage, interview transcripts, observation notes, and documentation records were coded using an open coding process. Similar codes were then grouped into categories and organized into broader themes representing the main mathematics learning problems identified in the study. Data presentation was conducted in the form of systematic descriptive narratives so that the patterns of emerging problems could be clearly understood. The themes were determined through an inductive process by identifying recurring patterns, similarities, and relationships among categories derived from the coding process. Themes that consistently appeared across multiple data sources were retained as the main findings of the study.

The final stage, namely conclusion drawing and verification, was conducted continuously throughout the research process in order to obtain valid and in-depth findings. The interview guidelines were used to explore information regarding the experiences, perceptions, obstacles, and expectations of both teachers and students toward mathematics learning in the era of globalization. Semi-structured interviews were conducted individually and lasted approximately 30–60 minutes. The interview indicators included students' learning independence, mathematics anxiety, perceptions of HOTS-oriented learning, learning motivation, technology utilization, and challenges encountered during mathematics learning. Meanwhile, documentation was used to complement the data in the form of lesson plans, students' learning outcomes, activity photographs, and other supporting documents (Jailani, 2023; Zahroh et al., 2025).

To ensure the trustworthiness of the data, this study employed several validation techniques, namely source triangulation, technique triangulation, member

checking, and prolonged engagement. Source triangulation was conducted by comparing information obtained from mathematics teachers, students, and the madrasah administration to identify consistency across different perspectives. Technique triangulation was carried out by comparing findings obtained through observations, interviews, and documentation. Member checking was conducted by returning interview summaries and preliminary findings to selected informants to confirm the accuracy and suitability of the researchers' interpretations. In addition, prolonged engagement was undertaken through repeated visits and continuous interaction with participants during the three-month research period, allowing the researchers to gain a deeper understanding of the research context and minimize potential bias. These procedures were implemented to enhance the credibility, dependability, and trustworthiness of the research findings (Jailani, 2023; Setiawan et al., 2025).

The data analysis technique in this study employed the interactive model of Miles and Huberman, which includes data reduction, data display, and conclusion drawing/verification (Widiastuti & Rahmah, 2023; Adzra et al., 2025). Data reduction was carried out by selecting, focusing, and simplifying the data according to the needs of the study. During this stage, interview transcripts, observation notes, and documentation records were coded using an open coding process. Similar codes were then grouped into categories and organized into broader themes representing the main mathematics learning problems identified in the study. Data presentation was conducted in the form of systematic descriptive narratives so that the patterns of emerging problems could be clearly understood. The final stage, namely conclusion drawing and verification, was conducted continuously throughout the research process in order to obtain valid and in-depth findings. Through this method, the study is expected to contribute to the development of adaptive mathematics learning strategies in the era of educational globalization.

RESULTS AND DISCUSSION

RESULT

Low Student Learning Independence

Based on classroom observations, interviews with mathematics teachers, students, and the madrasah representative, as well as supporting documentation, low student learning independence emerged as one of the main problems in mathematics learning at MA Al Falah Debowae. Students tended to depend heavily on teachers' explanations, showed limited initiative in exploring learning resources independently, and were reluctant to solve unfamiliar mathematical problems without prior guidance. This condition indicates that self-directed learning skills have not yet developed optimally despite the increasing demands of educational globalization.

Classroom observations conducted during six mathematics learning sessions showed that most students waited for direct instructions from the teacher before attempting to solve mathematical problems. During learning activities, only a small number of students actively searched for alternative solution strategies or consulted additional learning resources. When presented with problems that differed slightly from previously discussed examples, several students immediately stopped working and waited for further explanations from the teacher. These observations indicate a strong dependence on teacher guidance and limited learning autonomy.

When asked about students' responses to unfamiliar mathematical problems, one mathematics teacher stated:

"Most students do not dare to try if the material has not been explained in detail. Even when they are given slightly different problems, they immediately say they cannot do them before even trying." (Teacher 1)

Another teacher also explained:

"If they are not directed, it is very rare for students to search on the internet or in other books on their own. They prefer to wait for my explanation in class." (Teacher 2)

Similar findings were expressed by students. One student stated:

"When studying alone, I sometimes get confused, especially if the problems are different from the examples. So, it feels better when the teacher explains it first." (Student 3)

Another student reported:

"I rarely search on the internet because I'm afraid of misunderstanding. Usually, I just wait for it to be explained in class." (Student 7)

The madrasah representative also confirmed this condition:

"Many students are still accustomed to receiving direct explanations from teachers. Although learning resources are increasingly available, students have not fully developed the habit of learning independently and utilizing these resources effectively." (Madrasah Representative)

These findings suggest that students' low learning independence is influenced by long-established teacher-centered learning practices, limited self-confidence, and insufficient experience in managing independent learning activities. As a result, students tend to rely on external guidance rather than developing their own problem-solving strategies.

This finding is closely related to the focus of the study on mathematics learning problems in the era of educational globalization. Global educational demands increasingly emphasize self-directed learning, digital literacy, and lifelong learning skills. Therefore, low student learning independence becomes a significant challenge that may hinder students' ability to adapt to contemporary mathematics learning environments and global educational expectations.

Disorientation of Mathematics Learning Objectives

The disorientation of mathematics learning objectives has become one of the most prominent problems in the context of learning in the era of educational globalization. This condition is characterized by the dominance of orientation toward academic achievement rather than understanding the meaning of learning itself. The learning process is more directed toward students' success in answering examination questions and obtaining high grades, so that the essential aspect of mathematics as a tool for training logic, critical thinking, and problem-solving receives less attention. As a result, students tend to view mathematics merely as a subject that must be "passed" for the sake of grades, rather than as a discipline that has important functions in everyday life.

This condition affects the low intrinsic motivation and learning interest of students toward mathematics. Students do not see the relevance between the material studied and real-life needs, causing learning to feel abstract and less meaningful. The

loss of the applicative value of learning also makes it difficult for students to relate mathematical concepts to life contexts, which ultimately weakens their long-term understanding. Therefore, a reorientation of mathematics learning objectives is needed, focusing not only on outcomes but also emphasizing meaning, process, and the usefulness of knowledge for students' lives.

The findings presented in Table 1 were obtained through classroom observations, semi-structured interviews with mathematics teachers, students, and the madrasah representative, as well as documentation analysis. The data indicate that mathematics learning at MA Al Falah Debowae is still predominantly oriented toward academic achievement and examination results. This condition was reflected in classroom activities, where students tended to focus on obtaining correct answers and high scores rather than understanding mathematical concepts and their practical applications. Interviews with participants also revealed that learning success was commonly measured by grades, while opportunities to connect mathematics with real-life situations remained limited.

Table 1. Disorientation of mathematics learning objectives

Aspect	Identified Condition	Impact on Students	Learning Implications
Learning Orientation	Focus on academic grades and examination results	Students learn only to obtain grades	Need for a shift toward meaningful learning
Meaning of Learning	Conceptual understanding receives less attention	Students do not understand the essence of mathematics	Emphasis on conceptual understanding
Function of Mathematics	Not connected to real-life situations	Students consider mathematics irrelevant	Integration of everyday life contexts
Learning Motivation	Low intrinsic motivation	Students show little interest and enthusiasm in learning	Need for strategies to improve motivation
Applicative Value	Minimal application in real contexts	Difficulty applying mathematical concepts	Problem-based learning
Long-Term Understanding	Weak due to rote learning	Students easily forget and cannot develop concepts	Process- and reflection-based learning

Table 1 shows that the disorientation of mathematics learning objectives is reflected in several interconnected aspects, including learning orientation, meaning of learning, function of mathematics, learning motivation, applicative value, and long-term understanding. These findings suggest that mathematics learning is still dominated by outcome-oriented practices, resulting in limited conceptual understanding, low intrinsic motivation, and difficulties in applying mathematical concepts in everyday contexts. Consequently, mathematics tends to be perceived as a subject that must be mastered for examinations rather than as a meaningful tool for reasoning and problem solving. This condition supports the study's finding that the pressure to achieve academic performance has shifted the primary purpose of mathematics learning away from meaningful understanding.

High Levels of Mathematics Anxiety

High levels of mathematics anxiety have become one of the significant problems in mathematics learning in the era of educational globalization. This condition is characterized by the emergence of fear when dealing with numbers, formulas, and mathematical problems, which ultimately reduces students' self-confidence. Many students feel incapable of understanding the material from the beginning, thus forming a negative mindset toward mathematics as a difficult and stressful subject. This perception is often reinforced by unpleasant previous learning experiences, such as monotonous teaching methods, pressure during evaluations, or lack of support from the learning environment.

The impact of mathematics anxiety is the decline in students' learning motivation and academic achievement. Students who experience high anxiety tend not to have intrinsic motivation to learn, so they study only when there are demands such as examinations or assignments. As a result, the learning process becomes less meaningful and learning outcomes are not optimal. Therefore, a more humanistic and supportive learning approach is needed, such as creating a safe classroom atmosphere, providing positive reinforcement, and using engaging and contextual learning methods so that mathematics anxiety can be minimized and students can become more confident in learning.

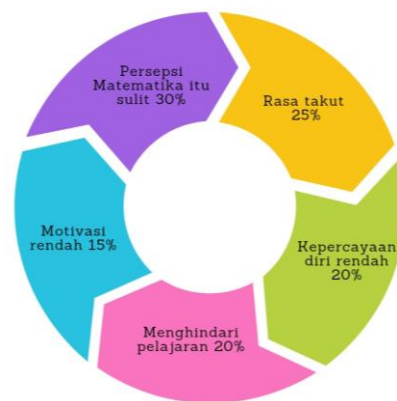


Figure 1. Percentage (Simple Representation)

The data above show that the perception that mathematics is difficult (30%) is the most dominant factor triggering students' anxiety. This is followed by fear (25%), as well as low self-confidence and avoidance attitudes (20% each). Meanwhile, low learning motivation (15%) serves as a supporting factor that reinforces the condition. These findings confirm that mathematics anxiety is dominated by students' perceptions and psychological conditions, thus requiring learning approaches capable of changing students' mindsets to become more positive and confident.

The Gap between Global Demands and Local Realities

The gap between global demands and local realities has become one of the main problems in mathematics learning in the era of educational globalization. Globalization requires students to possess high higher order thinking skills (HOTS) and numeracy literacy as part of international competency standards. However, these demands are often not balanced by the readiness of the local education system, thereby creating pressure for both teachers and students in the learning process.

From the implementation perspective, teachers still face various obstacles in applying HOTS-based learning, both in terms of conceptual understanding, the selection of appropriate methods, and the preparation of suitable evaluation instruments. In addition, the existing curriculum has not been fully translated into contextual and applicable learning practices, causing students to experience difficulties in understanding the material deeply. This indicates a gap between globally designed curriculum concepts and the realities of implementation in the field.

The findings presented in Table 1.2 were derived from the analysis of observation, interview, and documentation data collected during the study. Classroom observations revealed that mathematics learning was still predominantly teacher-centered, with limited opportunities for students to engage in higher-order thinking activities. Interviews with teachers, students, and the madrasah representative highlighted challenges related to technology utilization, the implementation of HOTS-oriented learning, and limitations in educational facilities. Documentation analysis, including lesson plans and learning records, further confirmed the existence of discrepancies between expected global educational standards and the realities of mathematics learning practices at MA Al Falah Debowae. Based on the triangulation of these data sources, several aspects of the gap between global demands and local realities were identified and are summarized in Table 2.

Table 2. The gap between global demands and local realities

Aspect	Global Demands	Local Realities (MA Al Falah Debowae)	Resulting Impact
Student Competence	Mastery of HOTS and high numeracy literacy	Students still dominated by LOTS (memorization)	Low critical thinking skills
Learning Strategies	Student-centered, problem-based learning	Still teacher-centered (lecture-based)	Students are passive and less explorative
Technology Utilization	Digital integration in learning	Technology use is still limited	Learning is less engaging and interactive
Teacher Competence	Ability to design HOTS-based learning	Teachers are not yet optimal in implementing HOTS	Learning lacks depth
Curriculum	Competency-based and globally applicable	Curriculum implementation is not yet contextual	Students find it difficult to understand the relevance of the material
Facilities and Infrastructure	Complete and digitally based facilities	Limited facilities and access to technology	Unequal learning quality

Table 2 illustrates that the gap between global educational demands and local realities occurs across multiple dimensions, including student competence, learning

strategies, technology utilization, teacher competence, curriculum implementation, and educational facilities. These findings indicate that mathematics learning challenges are not solely related to students' academic abilities but are also influenced by broader institutional and structural factors. Consequently, efforts to improve mathematics learning in the era of educational globalization require comprehensive interventions that address both pedagogical practices and educational support systems.

DISCUSSION

The findings of this study indicate that low student learning independence is not merely a behavioral issue but reflects a deeper pedagogical problem related to students' capacity for self-regulated learning. According to the theory of Self-Regulated Learning proposed by Yang et al. (2022), effective learners are characterized by their ability to plan, monitor, and evaluate their own learning processes independently. However, the findings show that students remain highly dependent on teacher explanations and demonstrate limited initiative in exploring alternative learning resources, indicating that these self-regulation skills have not yet developed optimally.

This condition is also consistent with the constructivist perspective of Malindi et al. (2023), which emphasize that knowledge should be actively constructed through exploration, inquiry, and interaction rather than passively received from teachers. The dominance of teacher-centered learning observed in this study may restrict opportunities for students to engage in independent knowledge construction. Furthermore, in the context of educational globalization, which increasingly requires digital literacy, lifelong learning, and adaptability, low learning independence may hinder students' readiness to respond to complex and rapidly changing learning environments. Therefore, strengthening student autonomy through student-centered and inquiry-based learning approaches becomes essential for developing the competencies required in contemporary mathematics education.

The findings also reveal that the disorientation of mathematics learning objectives stems from a learning culture that prioritizes academic achievement and examination performance over meaningful understanding and knowledge

construction. From the perspective of Lai (2024), education should be connected to learners' real-life experiences so that knowledge becomes meaningful and applicable in everyday situations. However, the findings show that mathematics learning is still largely detached from students' lived realities, causing students to perceive mathematics merely as an academic requirement rather than a practical tool for reasoning and problem solving.

This condition is also consistent with the distinction between surface learning and deep learning proposed by Taja-on et al. (2025), where excessive emphasis on grades tends to encourage memorization and procedural learning rather than conceptual understanding. Furthermore, according to Geiger et al. (2023), an overemphasis on external rewards such as grades may weaken students' intrinsic motivation to learn. As a result, students become less engaged in exploring mathematical ideas deeply and struggle to recognize the relevance of mathematics beyond examination contexts (Arsiya & Naseeha, 2025). In the era of educational globalization, where critical thinking, problem-solving, and lifelong learning are increasingly emphasized, this disorientation may limit students' ability to develop the competencies required to navigate complex real-world challenges.

The findings further indicate that mathematics anxiety is not merely an emotional reaction to mathematical tasks but a complex psychological phenomenon that influences students' cognitive performance, motivation, and learning behavior. According to the Mathematics Anxiety Theory developed by Zhu et al. (2024), anxiety toward mathematics emerges when individuals experience feelings of tension, worry, and fear in situations involving mathematical activities. The dominance of students' perceptions that mathematics is difficult, accompanied by fear and low self-confidence, reflects the formation of negative beliefs that hinder learning engagement. This finding is also consistent with Njurai & Uworwabayeho (2024), particularly the concept of self-efficacy, which states that students with low confidence in their abilities tend to avoid challenging tasks and exhibit lower persistence when facing difficulties.

Furthermore, from the perspective of Haelermans (2022), excessive fear of failure can reduce students' motivation to achieve and encourage avoidance behaviors. In the context of educational globalization, where students are

increasingly expected to demonstrate critical thinking, numeracy literacy, and problem-solving skills, high levels of mathematics anxiety may significantly limit their academic development. Therefore, mathematics learning should not only focus on cognitive achievement but also address students' emotional well-being through supportive, humanistic, and confidence-building learning environments.

The findings also show that the gap between global educational demands and local realities reflects a mismatch between internationally expected competencies and the capacity of local educational systems to implement them effectively. From the perspective of Hardiansyah et al. (2024), educational reform often encounters challenges when policy expectations are not accompanied by adequate teacher readiness, institutional support, and learning resources. This situation is evident in the limited implementation of HOTS-oriented learning, the persistence of teacher-centered practices, and the restricted use of educational technology. Furthermore, the findings align with Ansori et al. (2023), which emphasizes that learning development is strongly influenced by social, cultural, and environmental conditions.

The inability to provide learning environments that support exploration, collaboration, and technology integration may constrain students' cognitive growth and higher-order thinking skills. In addition, the concept of educational equity proposed by Njurai dan Uworwabayeho (2024) highlights that differences in access to educational resources significantly affect learning opportunities and outcomes. In the context of educational globalization, these findings indicate that achieving global standards requires more than curriculum reform alone; it also demands strengthening teacher competencies, contextualizing learning practices, and improving access to educational facilities. Without addressing these structural factors, the gap between global expectations and local realities is likely to persist and limit students' readiness to compete in an increasingly interconnected world.

The local madrasah context is important to emphasize because global educational pressures are not experienced and responded to in the same way by all educational institutions. Madrasahs located in areas with limited facilities, unequal access to technology, and varying levels of teacher pedagogical readiness may face different challenges compared to schools with stronger infrastructure and professional

support. UNESCO (2023) emphasizes that technology and educational transformation must be supported by equitable access, appropriate governance, and teacher preparation, while OECD (2023) shows that Indonesian students still face serious challenges in achieving minimum mathematical proficiency. In the context of madrasah education, recent studies also indicate that digital transformation often encounters obstacles related to limited infrastructure, low teacher digital literacy, and insufficient institutional support (Mariyanizaitin et al., 2025; Pabbajah et al., 2025; Siminto et al., 2024). Therefore, the contribution of this study lies in showing that mathematics learning problems in madrasahs are not merely individual student problems, but are also shaped by the interaction between global educational demands and local institutional realities. This finding strengthens the argument that educational improvement should not be implemented uniformly, but must be adaptive to the specific conditions, resources, culture, and readiness of each madrasah.

CONCLUSION

This study concludes that mathematics learning at MA Al Falah Debowae faces four main challenges in the era of educational globalization: low student learning independence, disorientation of learning objectives, high mathematics anxiety, and the gap between global demands and local realities. These challenges are influenced by pedagogical, psychological, and structural factors, including teacher-centered learning, grade-oriented instruction, limited student confidence, and insufficient support for HOTS, numeracy literacy, and technology integration. Therefore, mathematics learning needs to be transformed into a more student-centered, contextual, humanistic, and adaptive process. This study is limited to a single madrasah with a small number of participants; thus, the findings cannot be generalized to broader educational contexts. Future research is recommended to involve more diverse research sites and participants. In addition, future educational practices should focus on strengthening student-centered learning, improving teacher competence in HOTS-oriented instruction, and integrating technology according to the resources and needs of madrasahs.

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