

Anxiety at The Time of Learning: How to Manage Risks in Learning Mathematics?

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Abstrak: Guru memahami bahwa pembelajaran matematika seringkali dipandang kurang diminati, ditakuti dan dihindari oleh sebagian besar siswa. Guru menggunakan cara belajar matematika yang berbeda-beda, baik menggunakan pembelajaran matematika maupun metode pembelajaran matematika, sehingga siswa tidak merasa takut dan mengetahui bagaimana menguasai konsep-konsep matematika. Tujuan penelitian ini untuk mengkaji dan menyelidiki penerapan manajemen risiko pada pembelajaran matematika akibat kecemasan belajar. Metode yang digunakan dalam artikel ini adalah metode Systematic Literature Review (SLR), yang mengidentifikasi, meninjau, mengevaluasi dan menginterpretasikan semua penelitian yang ada. Pengumpulan data dilakukan dengan mencari dan mengkaji 22 artikel yang bersumber dari Google Scholar menggunakan software *Publish of Perish* (PoP). Berdasarkan hasil penelitian ini, terdapat 5 hal penting yang harus dilakukan dalam manajemen risiko dalam pembelajaran matematika, yaitu (1) memperhatikan proses pembelajaran yang meliputi aspek kognitif, afektif dan psikomotorik. (2) selalu memperhatikan motivasi siswa oleh orang tua, panitia dan lingkungannya. (3) selalu melakukan kesalahan untuk menggali potensi siswa. (4) memberikan kesempatan kepada siswa untuk memilih keterampilannya; dan (5) memelihara lingkungan belajar yang mendukung tumbuhnya rasa percaya diri siswa.

Kata kunci: Kecemasan belajar, Mengelola Risiko Belajar, Pembelajaran Matematika

Abstract: Teachers understand that learning maths is often seen as less desirable, feared and avoided by most students. Teachers use different ways of learning mathematics, both using mathematics learning and mathematics learning methods, so that students do not feel afraid and know how to master mathematical concepts. The purpose of this study is to examine and investigate the application of risk management in mathematics learning due to learning anxiety. The method used in this article is the Systematic Literature Review (SLR) method, which identifies, reviews, evaluates and interprets all existing research. Data collection was carried out by searching and reviewing 22 articles sourced from Google Scholar using *Publish of Perish* (PoP) software. Based on the results of this study, there are 5 important things that must be done in risk management in mathematics learning, namely (1) paying attention to the learning process which includes cognitive, affective and psychomotor aspects. (2) Always pay attention to student motivation by parents, the committee and the environment. (3) Always make mistakes to explore students' potential. (4) provide opportunities for students to choose their skills; and (5) maintain a learning environment that supports the growth of student confidence.

Keywords: Learning anxiety, Managing Learning Risk, Learning Mathematics

Submission History:

Submitted: 8 Oktober 2023

Revised: 9 Oktober 2023

Accepted: 10 Oktober 2023

INTRODUCTION

When the Covid-19 pandemic spread to several countries, including all of Indonesia in March 2020, the government immediately took action to prevent further spread. One of the efforts made, both at the undergraduate and postgraduate levels. All levels of education are negatively affected because students are forced to study at home when face-to-face classes are eliminated (Purwanto et al., 2020). Rigrant's research

(Djamilah, et.al., 2022) shows that when barriers to face-to-face learning are removed, teachers experience limitations in online learning, namely learning applications, online networks and devices, learning management, assessment and guidance.

According to Prihastyanti (2020), the orientation of online learning makes students who attend high school have high demands. Online learning continues to be carried out even with some shortcomings in its implementation. One of the shortcomings is the difficulty of applying mathematics learning. Skemp (1987) in his book, mathematics is a learning that requires understanding concepts and solving problems. However, Roehati (2021) said that in addition to knowledge of understanding concepts, there are learning interests that must be considered. This interest is something that must be considered so that students do not feel anxious in learning. Roehati (2021) added that anxiety in mathematics learning occurs if students feel uninterested in mathematics.

There are potential risks associated with directing learning to stimulate students' interest in mathematics. Learning that schools need systems that can guarantee a process of responsibility through effective internal control in educational organizations. Therefore, the application of risk management is very necessary in the field of teaching, so that when planning learning methods carried out by teachers there is no risk that can affect the quality of student learning (Suyitno, 2022).

Based on the description above, this study aims to investigate and examine the application of risk management in mathematics learning caused by learning anxiety. Therefore, anxiety at the time of learning: how to manage risks in learning mathematics?

METHOD

The method used in this article is the Systematic Literature Review (SLR) method. Researchers apply the SLR method by identifying, assessing, evaluating and interpreting all existing studies. Triandini and Freund (2019) used this method to systematically examine and identify leaves in each process using predetermined steps.

Based on the steps above, researchers searched journals with keywords students' math anxiety and risk management in math learning. Data collection was carried out by searching and reviewing articles contained in this research report. The articles used were 22 articles taken from Google Scholar with a search index created by the Publish of Perish (PoP) software. This is in line with Maulyda (2022) which states that PoP software is software that has quality indicators to find and compile valid and relevant references. Then the articles chosen to write this article are articles with similar research analyzed and summarized.

RESULT AND DISCUSSION

Result

The findings of the research material contained in this article are an analysis and summary of articles related to mathematical fear discovery and student risk management in mathematics learning, which are presented in the table below:

Table 1. Table of Research Results on Student Mathematics Problems

Researchers and Years	Journal	Research Results
(Princess, 2020)	Biormatics: Scientific Journal of the Faculty of Teacher Training and Education	The study was conducted using quantitative descriptive type. The conclusion of this study is that female students have higher math anxiety than male students. But there is no big difference between the two.
(Diana, Marethi, & Ultimate, 2020)	SJME (Supremum Journal of Mathematics Education)	This study is a survey study that concludes that there is a significant difference in students' understanding of mathematical concepts related to students' level of mathematical fear.
(Putri & Kurniasari, 2019)	Journal of Mathematics and Science Education Research	This study is a correlational study that concludes that fear of mathematics and the motivation to learn together have a positive relationship with academic procrastination.
(Nurjannah & Alyani, 2021)	Element Journal	This study was conducted using survey methodology which resulted in the conclusion that online learning has a high chance of increasing math anxiety when there are various triggers that can be used as a reference to understand the situation of students.
(Julya & Nur, 2022)	Journal of Didactical Mathematics	This study used a type of literature review whose results showed that math anxiety affects learning outcomes and math skills.
(Mulyana Senajaya, & Ismunandar, 2021)	Proximal: Journal of Mathematics Research and Mathematics Education	This study used a qualitative descriptive method with the results obtained, namely, indicators of student anxiety in relation to cognitive, affective and psychomotor aspects.
(Ramadhani, W., & Ulfah, S. 2021).	Journal of Scholar : Journal of Mathematics Education	This study used quantitative methods whose results showed that the anxiety level of the group of students who took private lessons was lower than students who did not take private lessons, but the students' learning motivation was different.
(Barroso, et al.,2020)	Psychological Bulletin	Research with correlation studies with consistent results about a significant association between math anxiety and low math achievement.
(Li, Q., Cho, H., Cosso, J. <i>et al.</i> , 2021)	Educ Psychol Rev 33	This meta-analysis was conducted with 73 articles to determine the effect of correlation strength between students' math anxiety and competency confidence. The finding of this analysis is that the magnitude of the overall effect size is influenced by dimensions of math anxiety, student development, and cultural context.
(Suren & Kandemir, 2020).	International Journal of Education in Mathematics, Science and Technology	Descriptive analysis was used in this study, and the results showed that anxiety and motivation of grade VIII junior high students were high and there was a positive and moderate relationship between anxiety and math motivation.
(Rozgonjuk, et al., 2020)	International Journal of STEM Education	This study using bivariate correlation analysis revealed that math anxiety had a very high

negative correlation with math self-efficacy.

Table 2. Table of Research Results on Managing Risk in Mathematics Learning

Researchers and Years	Journal	Research Results
(Suyitno, 2022)	Educational: Journal of Educational Sciences	The results of research conducted using qualitative methods at the research analysis level showed that the risk analysis of the learning process of Mondoroko Professional School was examined based on student categories, teacher categories, curriculum categories and academic environments.
(Amalina, 2021)	Journal of Obsession: Journal of Early Childhood Education	The results of the study with a literature review show that early childhood mathematics learning during the Covid-19 pandemic should be fun, learning from learning objects related to children or other simple things that children like.
(Turmuzi & Kurniawan, 2021)	Journal of Scholar : Journal of Mathematics Education	In the descriptive qualitative research method, it was concluded that the average score of mathematics teacher students with TPACK as a whole was 3.89 at the average level.
(Lestari & Bustamin, 2021).	Journal of Mathematics Learning Innovation (JIPM)	The results of the study used a qualitative descriptive approach (phenomenology). showed that the mathematics teacher of SMK YPKP Sentani experienced several obstacles during online learning for the 2020/2021 academic year.
(Djamilah, Nurmeidina, & Melinda, 2022).	BERDAYA: Journal of Education and Community Service	In this study, learning support methods were used in the form of individual or group learning counseling. Assistance is carried out offline at home and in orphanages or online through Zoom and WhatsApp meetings to help understand the material.
(Mba, 2021)	Echo Wiralodra	The research result of the qualitative descriptive approach is a participatory democratic leadership style, able to make agreements with regular meetings with teachers, administrative staff, committee members and parents of students to plan and determine common school goals.
(Prihastyanti, & Sawitri, 2020).	EMPATI Journal	A study with 175 respondents using cluster random sampling showed that the correlation coefficient was positive, ie. H. the greater the teacher's support by the student, the higher the student's self-efficacy.
(Carolyn Johns & Melissa Mills, 2021)	PRIMUS	Online teaching during the spread of COVID-19 with maths support and guidance has also increased flexibility and eased access issues, but tutors should be trained to utilise selected technology in adapting their communication to the new environment.
(Mohamadou, Halidou, & Kapen, 2020)	Appl Intell	The purpose of using mathematical modeling and Artificial Intelligence (AI) in this study is to provide the research community with a

(Mulenga, & Marbán, 2020).	Contemporary Educational Technology	comprehensive overview of the methods used in this study as well as a summary of available <i>open source</i> datasets related to COVID-19. The results of this study show that the low skill level in the use of mobile technology and the adoption of social media in relation to mathematical pedagogics during the COVID-19 crisis with different patterns.
(Wei, Cheng, Chen, et al., 2020)	Education Tech Research Dev	The results showed that the proposed approach was more beneficial for students at the intermediate math level compared to students at the high or low level.

Discussion

For mathematics learning to be successful, efforts must be made by both teachers and students to overcome students' fears. According to Mulyana (2021), researchers examined indicators of students' mathematical anxiety during online mathematics learning from cognitive aspects (such as lack of concentration, confusion, inability to understand the material taught by the teacher, unable to question themselves, inferior, unable to understand the material taught from the teacher, unable to question themselves, inferior). Affective aspects (such as anger over repeated tasks, anxiety, fear of grades, fear and nervousness when not being able to explain what the teacher says anymore), while psychomotor aspects (such as reluctance to interfere engage in math classes and avoid learning math online). In addition, according to Ramadhani (2021), there is a difference between students who do not take private lessons and students who take private lessons in the relationship between fear of mathematics and motivation to learn mathematics. Continuing female sex predicts greater math anxiety (Rozgonjuk, et al., 2020).

This can be addressed by managing the learning risks caused by student anxiety. According to Suyitno (2022), risk management can be classified through curriculum synchronization, interaction with students and teachers, and learning environment. Contrary to Amalina (2021), this must be in accordance with the nature of early childhood play during learning which is a risk management problem in mathematics learning. Skemp (1987) adds that risk management must distinguish between learning objectives and activities, the learning environment, and the potential that must be explored in each student.

Lestari (2021) seeks to deal with learning risks by reminding students to keep collecting assignments, preparing materials, giving assignments that are considered capable, providing internet quota through providing school wifi, increasing self-motivation and students, socializing from schools regarding the use of Google Classroom, and providing fair assessments. More towards involving committees, and teachers, Mba (2021) suggests ways to overcome risk management that must involve school principals, teachers, business tidy employees, committee administrators, parents and students in an effort to be responsible for synchronizing their duties.

Even though they have carried out various risk management, there are still difficulties in adapting and readiness to learn, this is in line as expressed in her thesis

Putri (2021) Students also experience learning difficulties in terms of adjustment difficulties and unreadiness for teaching and learning. From here the researcher concluded 5 important things that must be done in risk management in mathematics learning, namely (1) pay attention to learning which includes cognitive, affective and psychomotor aspects. (2) Always care about student motivation through parents, committees and their environment. (3) Always make mistakes to explore students' potential. (4) provide opportunities for students to choose their abilities and (5) maintain a learning environment that supports the growth of student confidence.

CONCLUSION

From the results and discussion, it can be concluded that each student's math anxiety is different, depending on gender, age and environment. Anxiety can be minimized by doing five main things in managing risk in mathematics learning, namely (1) paying attention to the learning process which includes cognitive, affective and psychomotor aspects. (2) Always care about student motivation through parents, committees and their environment. (3) Always make mistakes to explore students' potential. (4) provide opportunities for students to choose their abilities and (5) maintain a learning environment that supports the growth of student confidence. It is hoped that future research can examine more deeply about mathematical anxiety and risk management in learning with other variables that may have an influence on mathematics learning.

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