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Research Article

The Insensitivity to Mathematics and Suggested Solution

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The Insensitivity to Mathematics and Suggested Solution

Abstract. Mathematics is an important science that shapes the future as it did in the past. The mathematical knowledge, which helps explain other sciences, needs to be transferred and adopted to the next generation with this awareness. However, nowadays, mathematics is increasingly presented as a subject that should be avoided and is famous for its failures. The feeling of insensitivity towards mathematics brought about by mathematical anxiety and fear is now one of the important issues that needs to be solved on its own. For this purpose, in addition to increasing students' interest and sensitivity towards mathematics, teachers and parents must support this motivation in a necessary and sufficient way. In this study, it is discussed what the insensitivity and anxiety that develops towards mathematics are and under what conditions they are triggered. In addition, solution suggestions for eliminating mathematical insensitivity were presented in line with the

opinions of students, teachers and parents, with whom semi-structured interviews were conducted in accordance with the purpose and scope of the study. The data of the study was analyzed by content analysis and the results were added to the solution suggestions headings in the study.

Keywords: Insensitivity, Insensitivity to Math, Math Anxiety.

Abstrak. Matematika adalah ilmu penting yang membentuk masa depan sebagaimana di masa lalu. Pengetahuan matematika, yang membantu menjelaskan ilmu-ilmu lain, perlu diwariskan dan diadopsi oleh generasi berikutnya dengan kesadaran ini. Namun, dewasa ini, matematika semakin sering disajikan sebagai mata pelajaran yang harus dihindari dan terkenal dengan kegagalannya. Perasaan tidak peduli terhadap matematika yang disebabkan oleh kecemasan dan ketakutan terhadap matematika kini menjadi salah satu masalah penting yang perlu diselesaikan secara mandiri. Untuk tujuan ini, selain meningkatkan minat dan kepedulian siswa terhadap matematika, guru dan orang tua harus mendukung motivasi ini secara perlu dan memadai. Dalam penelitian ini, dibahas tentang ketidakpedulian dan kecemasan yang berkembang terhadap matematika serta dalam kondisi apa hal tersebut dipicu. Selain itu, saran solusi untuk menghilangkan ketidakpedulian terhadap matematika disajikan berdasarkan pendapat siswa, guru, dan orang tua, yang diwawancarai secara semi-terstruktur sesuai dengan tujuan dan ruang lingkup penelitian. Data penelitian dianalisis menggunakan analisis konten dan hasilnya ditambahkan ke bagian judul saran solusi dalam penelitian ini.

Kata Kunci: Ketidakpekaan, Ketidakpekaan terhadap Matematika, Kecemasan Matematika

INTRODUCTION

Learning and Teaching Mathematics Today

The mathematical skills expected from a child at primary school level are numbers and four operations. At later ages and levels, it is expected that the student will develop these numbers and operations and solve other mathematical problems. But this does not mean actually doing mathematics and thinking mathematically. Children who count numbers but cannot make sense of them, who are inadequate in counting ordinals and cardinals, and who perform operations based on memorization, cannot taste mathematics and cannot discover that mathematics is a communication skill. Mathematics is an important tool in acquiring fast, practical, orderly and rational thoughts and behaviors. According to Baykul (1999), the fact that mathematics is a main source for every discipline in scientific developments has enabled the mathematics course to be included in almost all curricula.

Actually learning mathematics creates a strong foundation for understanding complex concepts. From basic arithmetic to advanced calculus, each step in mathematics education prepares students for the next level of learning. Like building blocks, each concept adapts to the next, creating a solid knowledge structure. When children grasp math concepts, they are equipped with the tools they need to succeed in various areas of life. Learning mathematics encourages children to think

critically and solve problems creatively. It teaches them to approach challenges with a methodical mindset by breaking complex problems into manageable steps. This skill is valuable not only in academic settings but also in daily life. By engaging with math problems, students learn to think logically and critically. They develop skills in analyzing situations, identifying patterns, and drawing conclusions based on evidence. This type of reasoning is crucial in making informed decisions and understanding the world around them.

The visual spatial materials synthesized with technology are invaluable tools for enhancing mathematics learning. The visual representations of math problems, such as graphs, diagrams, and charts, can help explain complex concepts. Similarly, materials such as blocks etc. encourage a deeper understanding of numerical relationships and operations by providing a hands-on approach to understanding abstract mathematical ideas. Participating in problem-solving activities is an essential aspect of effective mathematics learning. By presenting challenging problems, students are encouraged to apply critical thinking and analytical skills to generate solutions. This approach fosters a rapid learning environment where individuals are motivated to explore and experiment with different problem-solving techniques, thereby increasing their mathematical proficiency. Collaborative learning environments provide individuals with valuable opportunities to exchange ideas, discuss strategies, and collectively overcome mathematical challenges. Working in groups fosters an environment of shared knowledge and diverse perspectives, allowing students to approach problems from a variety of perspectives and gain insight from their peers. This collaborative dynamic reduces the confusion often associated with individual learning and provides a more comprehensive understanding of mathematical concepts.

Regular practice is very important in mastering mathematics. Participating regularly in math problems and exercises strengthens learning and solidifies conceptual understanding. By persistently tackling a variety of mathematical challenges, students hone their skills and develop the endurance necessary to overcome complex mathematical obstacles. According to Doyle (1988), he thinks that through mathematical activities, students will reach mathematical products, mathematical operations, mathematical resources and responsibility skills and behaviors. Thus, it will be more possible to get to know and love mathematics by communicating with mathematics.

Today, mathematics is a blended science and subject that is learned and taught together with technology. Compared to the past, mathematics lessons taught with more computer systems, games and videos have advantages as well as disadvantages. It enables you to gain three-dimensional thinking skills, grasp the infrastructure of today's coding systems with fun, and learn mathematics more easily and understandably with its repetitive and regular structures. However, on the other hand, less movement and decreased interest and need for concrete materials make

it difficult for young children, especially, to grasp mathematics and transfer it to other areas. So it's not just about numbers and formulas, it's about developing problem-solving skills, logical reasoning and critical thinking.

Mathematics is not one-sided and solution-oriented. Especially being of an abstract nature, learning and teaching require more than one method and discipline. Therefore, since each individual's learning is unique, teaching methods should also be different. It is clear that there are various factors that affect students' learning and performance in mathematics. The research conducted in recent years (Kartiwi et al., 2018; Morris et al., 2022) emphasizes the importance of different learning models and approaches in improving students' motivation, problem-solving skills, critical thinking and mathematical communication skills in mathematics education. In addition, individual differences such as learning styles, mathematical disposition and mathematics anxiety play a significant role in affecting students' mathematical performance and problem-solving abilities (Anggoro et al. 2019).

As a result, mastering mathematics learning requires embracing fundamental principles, applying effective strategies, and embodying perseverance. By developing a comprehensive understanding of mathematical concepts, utilizing specialized learning approaches, and maintaining a growth mindset, individuals can navigate the complexities of learning mathematics with confidence and competence. Especially the primary school period, when a love or anxiety for mathematics develops, is one of the periods when educators should take more responsibility (Usluoğlu and Toptaş, 2023). Through engaging practice exercises, the journey of learning mathematics becomes an enriching and rewarding experience that empowers individuals to unlock their full mathematical potential.

The Anxiety Developed towards Mathematics

The mathematics anxiety refers to negative emotional experiences such as tension, fear, and worry caused by mathematics problems or academic situations, accompanied by low self-confidence, fear of failure, and negative perceptions about learning mathematics (Bandalos et al. n.d.). That is, math anxiety can elicit physical and emotional reactions such as frustration, anger, avoidance, distress, and helplessness. It affects students' enthusiasm for learning mathematics and causes them to avoid mathematics-related courses, which is one of the factors affecting the development of mathematical literacy (Birgin et al., 2010). Research has shown that there is a significant negative relationship between high mathematics anxiety and academic achievement in mathematics, and that the mathematics achievement of students with high mathematics anxiety is significantly lower (Chasseigne et al., 1997). Individuals' beliefs about their own abilities (such as self-concept and self-efficacy) are important incentives that trigger academic emotions (such as anxiety). In other words, improving students' self-belief and reducing their learning anxiety can effectively increase their academic success.

Particularly in recent years, research has been extensively investigated with studies examining the cognitive consequences, psychological-physiological correlates, and intergenerational effects of math anxiety. Mathematics anxiety has been found to have a significant negative impact on mathematical cognition and leads to poor performance on mathematics achievement tests (Suárez-Pellicioni et al., 2016; Wu et al., 2012). Additionally, research has shown that math anxiety is associated with lower math achievement, and a meta-analysis confirmed a significant relationship between math anxiety and math achievement (Barroso et al., 2021). It has been found that this relationship is especially evident in children, and parents' mathematics anxiety also affects their children's mathematics achievement and anxiety levels (Maloney et al., 2015).

The mathematics anxiety has been shown to have a long-term effect on the further development of mathematics anxiety and related variables (Luttenberger et al., 2018). The impact of math anxiety extends beyond individual performance; It has been found that it affects adolescents' mathematics education outcomes and career choices, and parent-child mathematics anxiety and mathematics-gender variables predict adolescents' mathematics education results (Casad et al., 2015; Megreya and Al-Emadi, 2023). Moreover, the finding that math anxiety affects girls' and boys' arithmetic, reading, and fluid intelligence skills differently highlights the gender-specific effects of math anxiety (Schleepen and Van Mier, 2016). Similarly, Ma and Xu (2004) stated in their study that there are statistically significant differences between genders in the causal order between mathematics anxiety and mathematics achievement. The intergenerational transmission of math anxiety has also been investigated, and interventions such as transforming fixed mindsets into growth mindsets and mindfulness have been found to be potential strategies to reduce children's math anxiety (Zhang, 2023).

In addition to its cognitive and educational effects, math anxiety has also been associated with physiological responses; respiratory sinus arrhythmia mediates the relationship between specific math anxiety and arithmetic speed (Tang et al., 2021). Additionally, the interaction between math anxiety and math proficiency has been found to predict later performance, highlighting the complex relationship between these factors (Weissgerber et al., 2022). The impact of teaching strategies and teachers' attitudes on students' mathematics anxiety has also been highlighted, and the role of educators in relieving mathematics anxiety has been emphasized (Zhang, 2022). Extensive research on math anxiety in general underscores its multifaceted nature and far-reaching effects on individuals' cognitive abilities, educational outcomes, and physiological responses. Understanding and addressing math anxiety is crucial to promoting positive learning experiences and academic success in math.

As a result, it is a fact that anxiety about mathematics affects thousands of people and also constitutes an obstacle to participation and progress in education,

employment and other areas of life, which must be accepted and resolved. The truth is that math anxiety can be overcome. One of the challenges of identifying math anxiety is that it may not always be visible. By developing a widespread understanding of math anxiety, schools are best placed to take steps to improve students' self-confidence and help them progress in the classroom and in their lives outside. There are many similarities between the emergence of math anxiety and negative behaviors such as not starting to study, spending too much time on easy questions, automatically answering "I don't know" to spoken questions, or claiming that they do not know where to start. In addition, saying the first number that comes to mind, not showing how to study and complete it, or not making the necessary effort for homework are situations and behaviors that indicate the emergence of this anxiety. Through conversations or scales on anxiety, they can be provided with different ways to communicate their feelings on a regular basis. Personal scales can help identify and monitor math anxiety, as well as inform appropriate interventions for anxiety relief efforts. Additionally, encouraging students to do fun math homework or math activities that can be done at home may have the power to influence children's learning and perception of math. However, it is vital that tasks have appropriate provision, support and infrastructure to ensure they have a positive impact and prevent children from feeling helpless. However, math anxiety can be overcome in a nurturing environment by recognizing when anxiety is triggered, developing strategies for improvement, and accepting that math requires practice rather than an innate ability.

The Insensitivity to Mathematics

The insensitivity is a term generally used in medical science, expressing the gradual decrease in physical reactions to internal and external factors as they become accustomed to them. However, insensitivity , which is also used as a psychological term, describes the gradual decrease in the reactions of minds exposed to learned habits, just like the reaction to physical habits. According to Yıldırım, Sıvacı, Taşdemir and Baki (2023), individuals experiencing emotional exhaustion feel powerless and inadequate, thus minimizing their relationships with people, which causes insensitivity . Physically, the depletion of cells by reducing their reactions, and mental depletion of emotional behavioral reactions such as being happy, sad, liking, etc. are examples of two types of insensitivity .

Insensitivity, which is diagnosed and treated in psychological and psychopathological fields, is the observation of decreased physical or mental reactions as a result of traumatic experiences. Kavakçı, Doğan, and Kuğu (2010) defined insensitivity as the reluctance and unresponsiveness of individuals who have reached the stage of insensitivity to images, emotions, physical sensations, and cognition. Köylü and Kurtoğlu (2022) distinguished insensitivity , which is often confused with the feeling of emotional exhaustion, as follows: Emotional exhaustion; While insensitivity is the state of emotional exhaustion due to one's job, insensitivity

is the person entering into a negative emotional state and decreasing common sense. In both cases, reaction situations arise that reduce individual self-confidence, success and motivation.

Maslach and Jackson (1981) stated that burnout can be explained by dimensions including emotional exhaustion, personal failure, and insensitivity. In another model, it was stated that emotional exhaustion affects the feeling of inadequacy directly and indirectly through insensitivity (Kim et al., 2013). In addition, studies have revealed that insensitivity which leads to burnout, is also linked to self-efficacy belief (Orhan and Neighbour, 2016). As can be understood from here, the scientific results of a mutual effect between insensitivity and success are an accepted fact. Within the scope of this study, it is aimed to explain the relationship between mathematics achievement and insensitivity based on the definitions and differences made.

Joseph Wolpe, one of the behavioral psychological theorists, stated that in the treatment of undesirable behaviors, the feeling towards the behavior (fear, anxiety, sadness, etc.) can gradually decrease by gradually exposing individuals to the behavior. Systematic insensitivity, also known as exposure therapy, generally involves individuals being alone with the stimuli they feel anxious about and managing this anxiety in a hierarchical manner (Sy and Hogan, 2014). In this case, it can be interpreted that insensitivity is an action and can be controlled in the minds of individuals. On the other hand, the question "Is depersonalization under the control of individuals in the lessons learned, as well as in the learned behaviors?" may come to mind. So, can the generally feared feeling of insensitivity to a mathematics lesson be solved systematically?

Insensitivity to mathematics lessons is a situation that occurs as a result of not being able to manage anxiety, which is in the psychology of learning. Insensitivity to mathematics anxiety is a critical area of concern in education as it can significantly impact mathematical performance and achievement. According to research (Ruijia et al., 2022), it has been shown that mathematics anxiety is negatively related to mathematics performance and can lead to mathematics avoidance behaviors, ultimately hindering academic success.

Many people have had negative experiences learning mathematics, and exposure to mathematics triggers negative thoughts and memories, so it is an understandable learned behavior to avoid mathematics wherever possible. This might mean avoiding classes that involve math, or avoiding studying until the last minute in situations where math needs to be studied. This avoidance behavior reduces interest and motivation by decreasing sensitivity towards mathematics. Inadequate preparation leads to poor performance, another negative math experience, and makes the student more anxious because it reinforces the student's view that he or she is bad at math. Given that most degrees now require some level of math, it's becoming increasingly difficult to avoid math. One of the most

important aims of this study is to analyze the difficult aspects of mathematics. In addition, the main starting point of the research is to examine the reasons and solutions for the mathematical insensitivity created by the negative attitudes towards mathematics from the perspective of students, teachers and parents.

METHOD

In the study, a screening model was used to define mathematics insensitivity and to reflect the existing mathematics insensitivity as it is. In research in the descriptive-relational survey model, a situation or event is described as it is, and the relationship and impact of the variables that cause this situation and their degrees are determined (Kaya, Balay and Göçen, 2012). The researchers scanned the literature on insensitivity and examined the interviews with students, classroom teachers and parents who were directly involved in the subject.

The qualitative data collection techniques were used in this research. The phenomenography, a qualitative research method that reveals people's experiences and focuses on sharing the meanings that individuals within the group give to phenomena, was used in the data analysis of the study. According to Çepni (2007), conceptual categories that reveal these differences are created in the results of phenomenographic studies and these categories are associated with each other.

The reason for choosing this method in the research is that it is assumed that scanning the existing mathematical information and evaluating the information obtained is important when introducing a new mathematical concept to the literature. In creating this concept, it was deemed important for the content of the subject to obtain the opinions of students, teachers and parents who are in contact with mathematics from the first level. Therefore, a random sampling group was formed from students studying in Turkey, their parents and teachers who teach. The sampling group was selected from the city where the researchers live in order to facilitate communication.

While the population of the research includes all students, teachers and parents in Turkey, the sample group consists of seven primary school 4th grade students, seven classroom teachers and seven parents randomly selected on a voluntary basis from Kırıkkale province. The interviews conducted in the research were conducted entirely on a voluntary basis, keeping the personal information of the students confidential and numbering them with code names. The code names given for students are S1, S2; the code names given for classroom teachers are T1, T2; and the code names given for parents are P1, P2. Demographic characteristics of the people who constitute the sample group of the research are given in Table 1.

Table 1. The Sample Group

Person	Gender	Age
S 1	Male	10
S 2	Male	9
S 3	Female	10

S 4	Male	10
S 5	Female	10
S 6	Female	10
S 7	Male	9

T 1	Female	32
T 2	Female	29
T 3	Female	36
T 4	Male	47
T 5	Female	46
T 6	Male	44
T 7	Male	59

P 1	Female	52
P 2	Female	42
P 3	Female	40
P 4	Female	34
P 5	Male	34
P 6	Male	39
P 7	Male	41
Total	21	

S: Student, T:Teacher, P:Parent

A semi-structured interview form was used to collect data in the study. The questions in the interview form were first prepared and evaluated by the researchers. The root questions in the research were determined and care was taken to make them clear and understandable for each interview group. A total of 3 questions that expressed a positive opinion about the research were included in the interview form. The questions in the interview form are as follows:

1. What do you think about mathematics lesson?
2. If you wanted to express mathematics as an emotion, what emotion would it be?
3. What do you think can be done to improve insensitivity to mathematics?

The data of the research were analyzed with descriptive analysis. The data collected in descriptive analysis determines what is said or what kind of conclusions are presented in relation to the research problem of the study. In this type of analysis, the researcher may often include direct quotes to reflect the views of the people he or she interviewed or observed. The main purpose of such analyzes is to present the findings to the reader in a summarized and interpreted form (Yıldırım and Şimşek, 2018). The categories and the codes were determined by taking into account the questions in the interview form. The findings obtained from the

research, along with the recommendations in the conclusion section, are presented under separate headings for teachers, parents and students.

RESULTS AND DISCUSSION

The Students

Looking at mathematics as a subject and a branch of science and incorporating it into daily life behavior depends on many factors for students. Therefore, the first thing to do is to make students realize this. In their study, Ersan and Çobanoğlu Aktan (2024) observed that as the socioeconomic levels of students increased, their mathematics motivation and success also increased. On the other hand, in another study conducted by Savaş, Taş and Duru (2010) in private and public schools, the results revealed that there is a relationship between school type, family income level, study time, attitude towards mathematics, going to private teaching institutions and mathematics achievement. These and similar studies have shown that mathematics success also includes consequences because it has multifaceted reasons. In order for students to develop a sensitivity towards mathematics and especially for this sensitivity to be positive, they need to be aware of their own causes and consequences.

Within the scope of the study, students were asked "What do you think about the mathematics lesson?" Answers such as "I wish mathematics did not exist", "I do not like mathematics", "I do not think mathematics is useful" and "I find it quite difficult", etc. were received along with answers such as "It is a necessity of life", "I think it is the founder of science". When students were asked the reasons for these negative thoughts, it was concluded that it was generally because they thought everyone around them thought the same way. This means that there is generally an environmental influence behind the feelings and thoughts that students develop towards mathematics. Children who start the learning process with their parents in preschool periods first imitate their parents' attitudes towards mathematics. If the parent mentions that mathematics is a difficult subject and that he/she has bad mathematics memories, this emotional state will tend to develop automatic mathematics anxiety in the child and, in the future, mathematics insensitivity. At the same time, primary school students shape their love or hatred of mathematics by the feelings and thoughts of their teachers. Similarly, Erden and Tonga (2020) concluded that students' gender and even teacher attitudes are effective in students' mathematics success. Undoubtedly, every child forms his own thought systems under the influence of his environment, especially his parents. However, with the evolving times, it is up to individuals to expand and develop these systems of thought.

When the question (“If you wanted to express mathematics as an emotion, what emotion would it be?”) is asked to students; they gave answers such as "Sometimes I feel nauseous", "I am afraid if someone gets angry when I cannot do mathematics", "I feel happy when I succeed", "I feel very smart when I do a difficult

question" and "If I fail, I hate everything related to mathematics". As can be understood from here, mathematics is a science that, in addition to numbers, shapes and operations, also corresponds to an emotion for students. While students who have experienced success in mathematics develop positive emotions towards mathematics, students who fail tend to have negative emotions such as hatred, alienation or insensitivity.

The last question asked to the students was " What do you think can be done to improve insensitivity to mathematics?". Students, who generally said that they had no opinion, stated that teachers should be interested in this issue and that tools such as textbooks, mathematics materials, etc. should be increased. From these answers, it was revealed that the students thought that the main reason for their mathematics insensitivity consisted of people and situations other than themselves.

The Teachers

Within the scope of the study, the question "What do you think about the mathematics lesson?" The classroom teachers generally gave answers to the question such as "It is actually a difficult lesson, but it is fun", "Unlike the majority, it is not a difficult and boring lesson", "It is a lesson necessary for the continuation of life and science" and "It may be the lesson I enjoy teaching the most". The classroom teachers who constituted the sample group of the study stated that they found mathematics difficult and boring when they were students, but after they became teachers, they discovered how important and enjoyable a subject it was.

The question asked to classroom teachers: "If you wanted to express mathematics as an emotion, what emotion would it be?" They gave similar answers to the first question and added the following statements: "It was difficult when I was a student, but now I love it", "I love mathematics if my course goes well" and "When I was a student, I used to get angry when I failed, but now I can better understand my students who are going through this situation." Mathematics sensitivity, like all other attitudes and thoughts, has a flexible structure. Therefore, when triggered productively, negative emotions can be replaced with positive emotions.

The last question was "What do you think can be done to improve insensitivity to mathematics?". Regarding this question, classroom teachers, based on their own teaching experiences, stated that teachers have a lot of responsibility to prevent insensitivity. In addition, they said that parents' awareness is effective in developing mathematical sensitivity. The classroom teachers gave answers like; "In order for students to develop positive attitudes towards mathematics, it is important for them to be introduced to the fun side of mathematics lessons in the classroom", "Boring mathematics lessons and the accompanying mathematics homework help students develop a hatred of mathematics", "Mathematics in the student's mind is something that can take shape according to the teacher's attitudes and behaviors". These answers show how important classroom teachers are in preventing and eliminating mathematics insensitivity, which is the main subject of the research. If classroom

teachers act with awareness of this situation, students' interest and curiosity in mathematics lessons will increase.

The Parents

Parents were asked “What do you think about the mathematics lesson?” They were asked and they mostly gave answers such as "My childhood nightmare", "If my family and teachers had made me love mathematics, maybe I would have been very successful", "I think it is a very necessary subject, but I do not have the talent", "I could not succeed, but I do whatever is necessary to make my child successful". The answers given by the parents showed that those who grew up with a fear and anxiety towards mathematics in general do not want their children to experience the same thing. In addition, parents underlined that learning mathematics is very necessary, but having a good teacher is also important.

Within the scope of the study, " If you wanted to express mathematics as an emotion, what emotion would it be?" Parents mostly answered the question "I still feel nauseous", "I was very scared when I was little", "I think I don't like mathematics", "I know it is fun, but I didn't experience it much when I was a child", "I feel anxious about my child" and "As I grew up, I started to value it more". When the answers were examined, it was observed that negative mathematics experiences and memories were ingrained in the permanent emotions of the parents. In this sense, it is concluded that developing a positive attitude during mathematics teaching will provide positive motivation for future mathematics emotions. This will also prevent insensitivity towards mathematics.

The last question: “What do you think can be done to improve insensitivity to mathematics?”. Parents gave answers to the question such as "I think the teacher has a lot of responsibility in this sense", "If mathematics is made loved, insensitivity disappears and interest increases", "If our children have fun while doing mathematics, they develop sensitivity". Parents' responses emphasized that improving insensitivity has something to do with liking mathematics. The action of "love" meant here is to be willing to learn mathematics, to be open to studies aimed at the development of mathematical curiosity, to see and embrace mathematics as a necessity of life. Having high motivation to learn mathematics and experiencing success are also important in developing mathematical sensitivity. Developing mathematical sensitivity means instilling desire and hope for learning mathematics. In their study, Özülkü and Baglama (2022) observed that as hopelessness increases in parents of children diagnosed with learning disabilities, depersonalization also increases. This result shows how effective parents are in developing mathematical sensitivity. Therefore, parents should provide opportunities for their children to have positive mathematics experiences and achievements, even if they have their own negative mathematics experiences. In addition, parents should provide material and moral support to teachers to develop accurate and efficient mathematical sensitivity.

CONCLUSION

Some studies in the field of psychology (Peleg et al., 2006; Metcalfe et al., 2008) have argued that emotions are hereditary and can spread quickly within the family. The mathematics insensitivity is also a state of emotion and attitude, and therefore its spread effects within the family need to be examined. Recent research has shown that math anxiety can be transferred from generation to generation and emphasized the need for interventions to break this cycle (Zhang, 2023). Therefore, there are many aspects that need to be examined in improving and eliminating mathematics insensitivity.

Finally, it is necessary to remind that mathematics insensitivity is not an experience that should be viewed only from the student's perspective. Mathematics insensitivity is the situation where students who have not experienced mathematics success are reluctant to do mathematics by showing low mathematics performance. Therefore, there is a learning process and learning outcome involved. Teachers, learning materials, curriculum, timing and parents' influence are other very important factors in developing mathematical sensitivity. If a teacher who loves mathematics can teach mathematics by having fun and experiencing it according to the readiness level of his students; If parents who love mathematics can provide fun supports appropriate to their child's mathematics interest level, mathematical sensitivity will develop more easily. If students are willing and curious to explore the importance of mathematics in daily life without giving up easily, they will develop mathematical sensitivity.

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