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Perspectives on Mathematics: Insights from Primary School Students, Parents, and Teachers

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Abstract. This study investigates the perceptions of primary school students, their parents, and primary school teachers regarding the concept of mathematics. The research was motivated by the need to understand how different stakeholders in primary education cognitively and effectively relate to mathematics, which significantly influences students' long-term attitudes and success in the subject. The objective was to explore how mathematics is defined and emotionally experienced across these groups. Using a qualitative research design, data were collected through semi-structured interviews with a working group composed of primary school students, parents, and teachers. The data were analyzed thematically. Findings revealed that while most primary school students expressed a liking for mathematics, this percentage was slightly lower among parents. Teachers showed the highest rate of positive attitudes toward mathematics, with nearly all reporting a strong enjoyment of teaching it. Regarding conceptualizations of mathematics, most responses aligned with the Cognitive Domain, particularly within the sub-themes "Numbers and Operations" and "Mathematics is part of daily life." In contrast, negative affective responses were more prevalent among students and parents, while teachers predominantly expressed positive emotions. The study concludes that fostering a connection between mathematics and real-life contexts is essential. Both teachers and parents should play an active role in nurturing positive mathematical experiences in children to support the development of mathematically competent individuals.

Keywords: Mathematics; Primary; Student; Parent; Teacher.

1. Introduction

Mathematics is a key tool in science and daily life yet answering "What is mathematics?" is challenging. Different groups, such as students, parents, and teachers, view it in varied ways, some see it as numbers and operations, others as an essential part of life. Despite these differences, mathematics is vital for problem-solving, improving thinking skills, and serving as a universal language. This study explores the perceptions of primary school students, parents, and teachers to understand these diverse perspectives.

1.1. Problem Statement

The existence and significance of mathematics, which has been utilized in numerous fields from past to present and serves as the foundation of many scientific disciplines, is undeniable. Given its profound importance, reaching a universally accepted definition of mathematics is challenging. If we were to answer the question "What is mathematics?" from an educational perspective, it can be described as one of the most crucial tools that enhance thinking, lead to truth and absolute knowledge, serve as a universal and abstract means of communication, and function as the common language of all sciences. Additionally, it is a useful computational technique for both science and practical life, as well as a discipline that lays the foundational principles of abstract thinking for students. Mathematics enables the establishment of meaningful relationships among various variables, facilitates their expression through systematic structures, and allows for calculations and conclusions to be drawn using symbolic representations (Çekici & Yıldırım, 2011; Ersoy, 2003; Inan, 2012; Renyi, 2011; Yıldırım, 2000).

In primary education, mathematics is one of the most critical subjects. However, despite this significance, many students do not hold positive attitudes toward mathematics. Unfortunately,

the roots of this issue begin in early childhood education, persist into primary school, and continue to intensify in later stages of education. Therefore, the early years of primary education play a crucial role in reversing this trend. In this context, students' perceptions of mathematics carry significant importance. In addition, not only the students but also their teachers' opinions on this issue are very important. Because the people who will teach them mathematics are the classroom teachers (Carter & Norwood, 1997, Kaba & Şengül, 2017). Again, it is important how the families, which are the third leg of the tripod, think about this issue and how this idea affects their children (Alkan, 2009).

1.2. Related Research

Toluk (2003) conducted the study on "What is mathematics?" within the framework of the Third International Mathematics and Science Study (TIMSS). Sternberg (2008) examined the metaphors used by classroom teachers to describe mathematics, while Lim (1999) explored adults' perceptions of what mathematics is. Similarly, Şengül and Katrancı (2012) conducted a study on students' thoughts about mathematics. Many studies have also sought students' opinions on mathematics (Öztürk, Akkan, & Kaplan, 2014; Sert, 2012; Sezgin Memnun & Akkaya, 2010; Toluk-Uçar et al., 2010; Topbaş Tat & Bulut, 2009; Yüzbaşıoğlu, et al., 2024).

The originality of this study lies in its inclusion of three research groups. Unlike previous studies, this research gathers perspectives on mathematics from primary school students, their families, and classroom teachers.

1.3. Research Objectives

In addition to students, it is crucial to investigate the perspectives of teachers and families regarding mathematics. Within this framework, the aim of this study is to examine the thoughts of primary school students, their parents, and classroom teachers on mathematics. To achieve this objective, the following research questions have been explored:

- What are the responses of the research group to the question, "Do you like mathematics?"
- What are the responses of classroom teachers to the question, "Do you enjoy teaching mathematics?"
- What are the perspectives of the research group on the question, "What is mathematics?"

2. Theoretical Framework

Mathematics initially emerged with simple counting and measuring operations in line with the needs of society, and today it has an important place among other sciences, especially technology (Işık, Çiltaş, & Bekdemir, 2008). Mathematics is one of the most difficult concepts to define (Umay, 2002). It is not enough to understand what it is and what it is not (Umay, 2002). While mathematics is defined as a "language" (Eş, Özdemir, & Kaplan, 2019; King, 1998), it is also defined as a technique for accessing information reliably according to Feder (2014). Life is intertwined with mathematics and knowing mathematics is a power for humans. It is seen that individuals will have a close relationship with mathematics today and tomorrow, as in the past (Ryan, 1998). As can be seen, mathematics is very important. One of the issues raised by the idea that mathematics is inevitable in shaping daily life and the future is why and for what purposes mathematics is taught (Ernest, 2000). Mathematics courses are taught in schools to shape the masses into individuals who can use mathematics effectively in industry, technology and other areas of daily life by developing their mathematical knowledge and skills, and to raise children who are inclined to academic mathematics as mathematical scientists (Baki, 2020). In addition to the classification of the aims of school mathematics as cognitive, affective and psychomotor, scientific, social, cultural and ideological reflections can also answer questions about why school mathematics is taught in schools (Yolcu, 2022). Despite all this, children who develop a negative attitude towards mathematics in primary school tend to dislike this subject, which affects their academic performance (Baltayeva, 2021; Baykul, 2021; Çekici & Yıldırım, 2011; Çiğilli, 2009; Şahin, 2013). Therefore, it has been found among many

research results that a positive attitude towards mathematics increases success, and negative attitudes hinder success (Afacan & Bircan, 2023; İlhan, et. al., 2021; Kara, 2021; Kebap & Çenberci, 2020; Medikoğlu, 2020). According to Bloom (2012), approximately one-quarter of individual differences in learning can be attributed to affective factors. It is evident that attitudes toward mathematics influence both students' ability to learn mathematics and teachers' ability to teach it effectively (Leder, Pehkonen, & Törner, 2002).

Unfortunately, teachers-whether consciously or unconsciously-convey their personal emotions, thoughts, and beliefs about the subject matter to students, thereby influencing their perspectives and attitudes (Büyükkarcı, 2023; Carter & Norwood, 1997; Kuhs, 1980; Moskowitz & Dewaele, 2021). In the classroom, both teachers' attitudes toward the lesson and the conscious or unconscious development of positive or negative attitudes in students significantly shape their perceptions of mathematics in later stages of life (Güner, 2013). In addition to teachers, families also play a crucial role in shaping students' attitudes and beliefs toward mathematics (Alkan, 2009; Cain-Caston, 1993; Gallagher & Kaufman, 2008). Research indicates that students generally do not enjoy mathematics, and their academic performance in the subject tends to be low (Baykul, 2021). Furthermore, the abstract nature of mathematics may negatively impact students' attitudes toward the subject (Baltayeva, 2021).

As in many countries, mathematics has always maintained its difficult nature. Today, many countries are making serious efforts in their educational programs to break this image. As a result of these efforts, success in mathematics is increasing, and interest in mathematics is also increasing in parallel. The increase in interest also changes perceptions towards mathematics and the mathematics course in which it is learned. One of the studies conducted today to reveal how mathematics is perceived is perception research on mathematics and related concepts (Mathematics teacher, mathematical tools, mathematics exams, etc.) (Şahin, 2013). In this context, it is important to conduct this research.

3. Method

3.1. Research Design

In this study, a qualitative research method was employed, with one question being asked and evaluated quantitatively. The study was conducted as a case study. According to Şimşek and Yıldırım (2018), a case study allows for the examination of "a contemporary phenomenon within its real-life context." Thus, this research was carried out within the framework of a case study approach. In a situational study, the views of an individual or a group on a situation are presented to the readers from different perspectives, and therefore it was considered appropriate for the purpose of this research.

3.2. Research Group

In accordance with the purpose of the research, the sample was chosen using purposive sampling, consisting of primary school students and their parents, and 4 primary school and classroom teachers working in various schools in Turkey. The research group consists of primary school students, their parents, and classroom teachers. The distribution of participants by group and grade level is presented below.

Table 1. Gender Distribution of the Research Group

Group	Gender	f	%
Primary School Student	Girl	74	56.7
	Boy	97	43.3
	Total	171	100.0
Parent of a Primary School Student	Mother	117	82.4
	Father	25	17.6
	Total	142	100.0
Classroom Teacher	Female	155	80.7
	Male	37	19.3
	Total	192	100.0

The study includes a total of 171 primary school students, of whom 74 (56.7%) are female and 97 (43.3%) are male. Among the 142 parents participating in the study, 117 (82.4%) are mothers, while 25 (17.6%) are fathers. Additionally, the study involves 192 classroom teachers, consisting of 155 (80.7%) female and 37 (19.3%) male teachers. In total, the research includes 505 participants.

Table 2. Grade Levels of the Research Group (Students and Teachers)

Group	Grade	f	%
Primary School Student	1st Grade	23	13.5
	2nd Grade	44	25.7
	3rd Grade	52	30.4
	4th Grade	52	30.4
	Total	171	100.0
Classroom Teacher	1st Grade	39	20.3
	2nd Grade	36	18.7
	3rd Grade	84	43.8
	4th Grade	33	17.2
	Total	192	100.0

The study includes 23 (13.5%) first-grade, 44 (25.7%) second-grade, 52 (30.4%) third grade, and 52 (30.4%) fourth-grade primary school students. Additionally, when examining the distribution of classroom teachers based on the grade levels they teach, 39 teachers (20.3%) teach first grade, 36 teachers (18.7%) teach second grade, 84 teachers (43.8%) teach third grade, and 33 teachers (17.2%) teach fourth grade, as presented in Table 2.

3.3. Data Collection

The semi-structured interview form developed by the researcher was finalized after obtaining expert opinions. This form includes a total of three questions: two quantitative and one qualitative, along with demographic information. The form was distributed to teachers and parents via Google Forms, while students were directly reached to collect their responses. Primary school students and their parents were asked the questions: "Do you like mathematics?" and "What is mathematics?", whereas classroom teachers were additionally asked "Do you like teaching mathematics?"

3.4. Data Analysis

In this study, content analysis was used as the data analysis method. The data analysis process followed four steps: coding the data, developing themes, organizing sub-themes and themes, and describing the findings (Şimşek & Yıldırım, 2018). Subsequently, the identified sub-themes were categorized based on their similarities and differences. Sub-themes with conceptual similarities were grouped together to form overarching themes. The data obtained from the analysis were categorized under two main themes. Throughout this process, an additional expert was consulted for validation. After the researcher completed the initial data analysis, an independent expert also analyzed the data. The two analyses were then combined to finalize the data interpretation and findings.

3.5. Validity and Reliability

To ensure reliability, analyst triangulation was conducted by comparing the analyses of the researcher and two external experts (Patton, 2014). The agreement among the three analysts was calculated using Miles and Huberman's (1994) reliability formula. The reliability score was determined to be 89.5%.

The analyses of the categories were presented in tables, and direct quotations from participants' responses were included as examples. Participants were coded as follows: primary school students (S1, S2, S3, ...), parents (P1, P2, P3, ...), and classroom teachers (T1, T2, T3, ...).

To ensure data diversity and to examine the issue from multiple perspectives, responses were collected not only from students but also from parents and teachers. Additionally, the

quantitative question was analyzed descriptively, with percentage and frequency distributions presented.

4. Findings

This section presents the findings derived from the views of primary school students, their parents, and classroom teachers regarding mathematics. Data are organized thematically to reflect the structure of qualitative research. The section is composed of three main parts: (1) Affective orientations toward mathematics (such as liking or enjoying mathematics), (2) Definitions and meanings attributed to mathematics by the participants, (3) A comparative reflection across groups (students, parents, teachers).

Each theme is accompanied by relevant frequency tables and representative participant quotes. Cognitive and affective domains are used as the primary framework for thematic classification. At the end of each thematic category, a brief interpretive summary is provided.

4.1. Affective Orientation Toward Mathematics

Participants were asked whether they liked mathematics and, for teachers, whether they enjoyed teaching it. Their responses are summarized in Tables 3 and 4.

Table 3. Responses to the Question: "Do You Like Mathematics?"

Group	Do you like mathematics?	f	%
Primary School Student	Yes	131	76.6
	No	40	23.4
	Total	171	100.0
Parent of a Primary School Student	Yes	78	54.9
	No	64	45.1
	Total	142	100.0
Classroom Teacher	Yes	188	97.9
	No	4	2.1
	Total	192	100.0

The study revealed varied attitudes toward mathematics among primary school students, parents, and teachers. A significant 76.6% of students reported liking mathematics, indicating a generally positive perception among young learners. In contrast, parents showed a more divided stance, with 54.9% expressing a positive view and 45.1% disliking it. Teachers, however, demonstrated an overwhelmingly positive attitude, with 97.9% stating they liked mathematics, highlighting their strong enthusiasm for the subject.

Table 4. Responses to the Question: "Do You Enjoy Teaching Mathematics?"

Group	Do you like teaching mathematics?	f	%
Classroom Teacher	Yes	190	98.9
	No	2	1.1
	Total	192	100.0

The study found that 98.9% of classroom teachers enjoy teaching mathematics, reflecting a strong affective engagement with the subject as both learners and educators. Unlike the more varied perspectives of students and parents, teachers' highly positive attitudes could significantly enhance student motivation and foster a supportive classroom environment for learning mathematics.

4.2. Students' Conceptual and Emotional Definitions of Mathematics

In response to "What is mathematics?", students provided definitions categorized into cognitive and affective domains. Their responses are detailed in Table 5 and interpreted thematically below.

Table 5. Analysis of Primary School Students' Responses to the Question: "What is Mathematics?"

Theme	Subtheme	f	%
Cognitive Domain (155 students, 90.7%)	Encompasses All Aspects of Life	17	9.9
	A Course	14	8.2
	Numbers and Operations	109	63.8
	Problem Solving and Formulation	7	4.1
	Study Activities	8	4.7
Affective Domain (16 students, 9.3%)	Negative Emotions	14	8.2
	Positive Emotions	2	1.1

The study revealed that 90.7% of primary school students' responses to the question "What is mathematics?" were categorized within the cognitive domain, reflecting a focus on intellectual and conceptual understandings. The majority (63.8%) associated mathematics with numbers and operations, emphasizing basic arithmetic, as illustrated by responses such as "Mathematics is numbers" (S3) and "Multiplication, division, addition, subtraction" (S11). Additionally, 9.9% of students viewed mathematics as an integral part of life, with statements like "A world without mathematics is unimaginable" (S2) and "Mathematics is everything" (S35), highlighting its ubiquitous role. Furthermore, 8.2% described it as a school subject, noting it as "a subject related to numbers that we are taught" (S36). A smaller portion, 4.7%, linked mathematics to study activities, describing it as "studying" (S107) or "intelligence and reasoning" (S134), while 4.1% defined it as problem-solving and construction, exemplified by "*Mathematics is the ability to solve problems*" (S40). These findings underscore the predominantly cognitive lens through which students conceptualize mathematics, with a strong emphasis on arithmetic and its practical applications.

The study found that 9.3% of primary school students' responses to the question "What is mathematics?" fell within the affective domain, reflecting emotional attitudes toward the subject. Of these, 8.2% expressed negative emotions, describing mathematics as challenging or daunting, with statements such as "The hardest subject" (S1, S31) and "Complicated and numbers that are difficult for me" (S38). In contrast, a small minority (1.1%) associated mathematics with positive emotions, as seen in responses like "*I don't know it, but I love it*" (S90) and "*Feeling happy, peace*" (S128). Although students predominantly viewed mathematics through a cognitive lens, focusing on numbers and arithmetic, the prevalence of negative affective responses highlights emotional barriers to engagement, underscoring the need for targeted affective support in mathematics education to foster more positive attitudes.

4.3. Parents' Conceptual and Emotional Definitions of Mathematics

Responses from parents also reflected both cognitive and affective domains, as presented in Table 6.

Table 6. Analysis of Primary School Parents' Responses to the Question: "What is Mathematics?"

Theme	Subtheme	f	%
Cognitive Domain (126 parents, 88.7%)	Encompasses All Aspects of Life	49	34.5
	A Subject	3	2.1
	Numbers and Operations	58	40.8
	Problem Solving and Formulation	3	2.1
	Study Activities	13	9.2
Affective Domain (16 parents, 11.3%)	Negative Emotions	15	10.6
	Positive Emotions	1	0.7

The study indicated that 88.7% of parents' responses to the question "What is mathematics?" were categorized within the cognitive domain, reflecting a focus on intellectual and practical aspects. A significant portion (40.8%) emphasized numbers and operations, viewing mathematics as essential for daily tasks, as evidenced by statements like "Addition, subtraction, multiplication, and division… necessary in everyday life" (P2). Additionally, 34.5%

perceived mathematics as integral to daily experiences, with responses such as "*Mathematics exists in everyday life*" (P3) and "*Everything is connected through mathematics*" (P4). Furthermore, 9.2% described it as a domain requiring mental effort, noting it as "a subject that requires intelligence and reasoning" (P68). Less frequently, 2.1% associate mathematics with problem-solving or define it simply as a school subject. These findings highlight parents' predominant view of mathematics as a practical and cognitively demanding discipline, closely tied to arithmetic and real-life applications.

The study revealed that 11.3% of parents' responses to the question "What is mathematics?" fell within the affective domain, highlighting their emotional attitudes toward the subject. A substantial 10.6% expressed negative emotions, describing mathematics as difficult or anxiety-inducing, with statements such as "A subject I hated" (P30) and "My child struggles with it" (P35). In contrast, only a small minority (0.7%) conveyed positive emotions, with one parent noting, "Mathematics is life. It was one of my favorite subjects" (P15). While parents' responses were primarily cognitive, focusing on arithmetic and its practical utility in daily life, their predominantly negative emotional reactions, compared to students and teachers, suggest potential challenges in how they support their children's mathematics learning, emphasizing the need for strategies to foster more positive parental attitudes.

4.4. Teachers' Conceptual and Emotional Definitions of Mathematics

Teachers'definitions reflect deep pedagogical and life-integrated understandings of mathematics (Table 7).

Table 7. Analysis of Primary School Teachers' Responses to the Question: "What is Mathematics?"

Theme	Subtheme	f	%
Cognitive Domain	Encompasses All Aspects of Life	96	50
(80 teachers, 93.8%)	A Subject	1	0.5
	Numbers and Operations	36	18.8
	Problem Solving and Formulation	6	3.1
	Study Activities	41	21.4
Affective Domain	Negative Emotions	1	0.5
(12 teachers, 6.2%)	Positive Emotions	11	5.7

The study found that 93.8% of teachers' responses to the question "What is mathematics?" were categorized within the cognitive domain, reflecting a strong emphasis on intellectual and practical dimensions. Half of the teachers (50%) viewed mathematics as an omnipresent part of life, with statements like "Everything in life is mathematics" (T123) and "It is life itself" (T83), underscoring its universal relevance. Additionally, 21.4% described mathematics as a domain of cognitive engagement, referring to it as "cognitive and metacognitive experiences" (T1) or "a fun puzzle" (T9). A smaller portion, 18.8%, highlighted numbers and operations as foundational, with one teacher noting, "Basic skills are necessary; advanced topics should be optional" (T58). Less commonly, 3.1% associated mathematics with problem-solving, and 0.5% defined it as a school subject. These findings illustrate teachers' comprehensive view of mathematics as a pervasive, cognitively stimulating discipline deeply rooted in both foundational skills and real-life applications.

The study indicated that 6.2% of teachers' responses to the question "What is mathematics?" were categorized within the affective domain, reflecting their emotional attitudes toward the subject. A significant 5.7% expressed positive emotions, with teachers describing mathematics as "love" (T52) and "life energy-I wish I were a math teacher" (T116), highlighting their enthusiasm. Only one teacher (0.5%) conveyed a negative emotion, dismissing mathematics as "nothing" (T57). Teachers predominantly viewed mathematics as a pervasive and cognitively rich discipline, with their overwhelmingly positive affective responses, compared to students and parents, underscoring their potential to serve as emotional role models in the classroom. A comparison across the groups revealed a shared cognitive focus on numbers and real-life applications, yet affective experiences varied significantly, with teachers displaying the most positive attitudes (Figure 1).

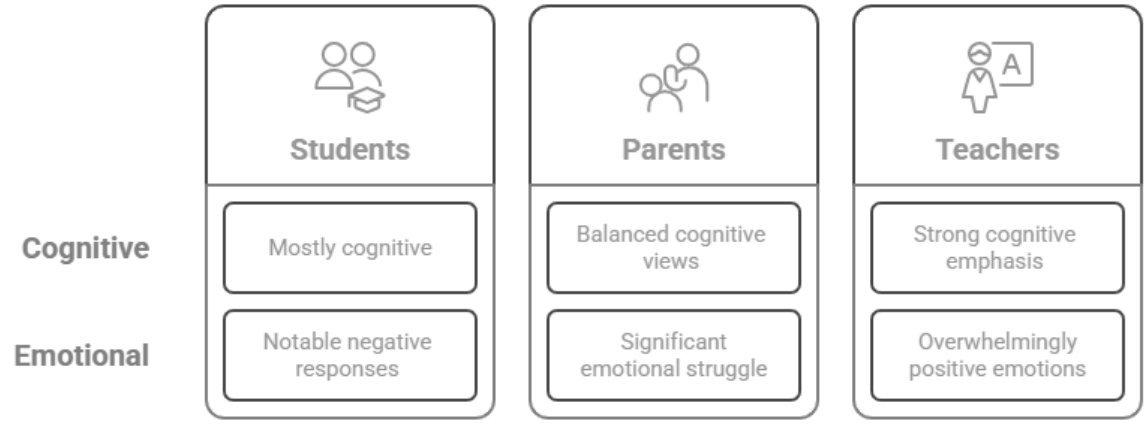

Figure 1. Summary of the Findings

5. Discussion

This study aimed to investigate the perceptions of primary school students, their parents, and classroom teachers regarding mathematics. The findings indicate that while the majority of students and teachers enjoy mathematics, parents present a more balanced distribution of positive and negative attitudes. Among the three groups, classroom teachers exhibited the highest rate of positive affect toward mathematics, not only as learners but also in their role as educators-only two out of 192 teachers reported not enjoying teaching the subject. This result is promising, as research suggests that teachers who enjoy teaching a subject are more likely to be confident and effective in their instruction, thereby fostering a more engaging and lasting learning environment.

Responses to the question "What is mathematics?" revealed that all groups primarily conceptualized mathematics within the cognitive domain, with prominent sub-themes such as "Numbers and Operations" and "Mathematics Encompasses All Aspects of Life." This finding is aligned with both dictionary definitions and previous literature. For example, the Turkish Language Association defines mathematics as "a general term for sciences that study the properties of quantities based on arithmetic, algebra, and geometry." Similarly, Toluk (2003) described mathematics as "knowledge of numbers and shapes," "a collection of operations and rules," and "the science of patterns and structures." Such conceptualizations were widely reflected in participants' responses, particularly among students and teachers.

In contrast, the affective domain was more nuanced. While classroom teachers mostly expressed positive emotional associations with mathematics-such as joy, enthusiasm, and a sense of life energy, students and parents more frequently reported negative emotions, describing mathematics as difficult, complex, or anxiety-inducing. This divergence is consistent with earlier studies suggesting that students generally have unfavorable attitudes toward mathematics and experience low academic performance in the subject (Baykul, 2021). Furthermore, the abstract and symbolic nature of mathematics is known to negatively influence students' affective orientations (Baltayeva, 2021).

The question of "What is mathematics?" also elicited a broad range of metaphoric and symbolic responses in previous research. For instance, Lim (1999) categorized adult perspectives into themes such as "Mathematics is a journey," "a skill," and "a puzzle or a riddle." Similarly, Sternberg (2008) reported metaphors from classroom teachers, including "a mountain to be climbed," "a bridge," and "a new language." Studies with students by Şengül and Katrancı (2012) and Çekirdekçi (2020) showed that common metaphors included "life," "puzzle," "game," and "book." Yüzbaşıoğlu et al. (2024) found even more diverse metaphors among 4th grade students, including "mathematics as an object," "as nature," "as food," "as a toy," and even "as an object of fear." In another study, Sternberg (2008) found that

classroom teachers used metaphors to describe mathematics as "a mountain that is difficult to climb," "a new language that must be learned," "a bridge," and "a challenge that must be overcome."

These metaphorical and conceptual variations underscore the individual and contextual nature of mathematical perception. According to Baykul (2021), mathematics is a highly personal concept, shaped by one's experiences, usage contexts, and attitudes toward the subject. This personalization may explain the differing emotional and cognitive associations identified across participant groups in the current study.

In conclusion, while participants' cognitive understandings of mathematics remain largely aligned with traditional definitions-emphasizing numbers, operations, and real-life relevance-their affective experiences diverge significantly. Classroom teachers generally express positive emotional connections, whereas students and parents exhibit more ambivalence or negativity. These results highlight the importance of not only developing students' cognitive competencies in mathematics but also addressing the emotional and psychological barriers that may hinder their engagement. Future educational interventions should focus on creating emotionally supportive learning environments that align with students lived experiences and leverage the intrinsic enthusiasm of teachers. Such efforts can contribute to a more holistic and inclusive mathematics education, bridging the gap between cognition and emotion. In another study conducted with students, metaphors produced for mathematics lessons were divided into conceptual categories under four common themes: nature, school, abstract and life. It was determined that the metaphors produced were mostly in the theme of life, as in this study. It was observed that the least number of metaphors produced about the concept of mathematics lessons were in the theme of school (Kebap & Çenberci, 2020).

Many studies have shown that mathematics is perceived as an indispensable part of daily life, associated with calculation, numbers, and operations, a science that meets human needs, and a subject that simplifies life. Additionally, it has been exemplified through problems solvable using basic arithmetic operations or geometric shapes observed in the environment (Demircioğlu, 2009; Ilgar & Gülten, 2013; Karakuş, 2007; Kayaaslan, 2006; Öztürk, Akkan, & Kaplan, 2014; Sert, 2012; Sezgin Memnun & Akkaya, 2010; Toluk-Uçar et al., 2010; Topbaş Tat & Bulut, 2009).

6. Conclusion

Although the findings of this study suggest that mathematics is generally liked by students, parents, and teachers, broader research in our country indicates that the overall perception of mathematics is not as positive. It is well established that liking a subject can significantly impact a student's academic success. The failure of primary school students in mathematics is caused by the student's attitude towards mathematics, whether he/she likes the course or not, his/her fears, interest in mathematics, level of readiness, family and illness situations. Therefore, fostering a positive attitude toward mathematics should begin with teachers themselves -they must first develop a love for the subject and then work to instill this enthusiasm in their students. In this regard, it is essential to convey to students that mathematics is a necessary and valuable subject. By making mathematics curriculum activities more closely linked to real-life experiences, abstract concepts can be transformed from a collection of intimidating ideas into a practical, relevant, and necessary subject to learn.

Limitations

This study, exploring primary school students', parents', and teachers' views on mathematics, is valuable but has limitations. It uses only three interview questions, limiting response depth; more questions could enrich findings. It focuses solely on primary school, restricting generalizability to other levels. Time constraints, tied to the curriculum schedule, hindered deeper data collection. Lastly, its cross-sectional design prevents tracking long-term changes in perceptions. Future studies should include more questions, cover various educational levels, allow flexible timelines, and adopt longitudinal approaches.

Recommendations

Based on the premise that mathematics is an integral part of daily life, it is essential for teachers and parents to relate mathematics to real-life situations and support students in developing into individuals who actively engage with mathematics. Additionally, conducting a more detailed analysis of students' attitudes toward mathematics-whether they enjoy it or not-could contribute to shaping future generations that not only appreciate mathematics but also use it more effectively in practical contexts. This research is limited to primary school students, their parents and teachers. A longitudinal study could be conducted later to see if there is a change in the primary school students' thoughts about mathematics from the time they start primary school until they graduate.

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Conflict of Interests

The authors declare that they have no conflict of interest to declare.

Declaration of Generative AI-assisted Technologies

This manuscript was prepared without the use of Generative AI. All intellectual contributions, critical analyses, and final revisions were performed by the authors. The authors take full responsibility for the accuracy, originality, and integrity of the content presented in this work.

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