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EXAMINATION OF POSTGRADUATE THESES ON MATHEMATICAL LITERACY WITH SOME VARIABLES

Annotation. *Since our country showed a low level of success in the results of the PISA exam application, interest and awareness in the subject of mathematics literacy has increased. This research was carried out by examining the authorised master's and doctoral theses published in the National Thesis Centre of the Council of Higher Education (YOK) between 2018–2022 (end of November), which include the subject of «Mathematical Literacy» in the field of mathematics. The aim of the research is to examine the theses covering mathematical literacy in terms of publication year, university, keywords, publication type, study topics, sample/study group, research design/method, data collection tools and data analysis. A literature review was conducted for this study. The study group was determined by criterion sampling method. The research was carried out in qualitative design and data were collected by document analysis method. In the National Thesis Centre of the Higher Education Institution, 20 master's and doctoral theses published and permitted between 2018–2022 were examined. The data used were analysed by document analysis method. The 20 theses were examined and analysed in terms of publication year, university, keywords, publication type, study topics, sample/study group, research design/method, data collection tools and data analysis methods. The data and findings of the research were analysed through descriptive analysis. The findings were analysed by using percentage (%) and frequency (f) calculations and presented in tables.*

Keywords: *mathematics, literacy, mathematics literacy, graduate theses, pedagogical aspects, comparative analysis, the level of education.*

Introduction

The problem statement of this study is «What are the trends of scientific studies on mathematical literacy between 2018–2022 (end of November) according to the determined criteria?».

Sub-Problems of the Study;

Answers to the following sub-problems were sought for the solution of the above problem. – What are the keywords used in the thesis studies on mathematical literacy between 2018–2022 (end of November) and how is their distribution?

– What is the distribution of thesis studies on mathematical literacy conducted between 2018–2022 (end of November) according to universities?

– What is the distribution of thesis studies on mathematical literacy according to years between 2018–2022 (end of November)?

– What is the distribution of thesis studies on mathematical literacy according to publication types between 2018–2022 (end of November)?

– How is the distribution of thesis studies on mathematical literacy between 2018–2022 (end of November) according to research topics?

– What is the distribution of thesis studies on mathematical literacy between 2018–2022 (end of November) according to study group characteristics?

– What is the distribution of the methods used in the thesis studies on mathematical literacy between 2018–2022 (end of November)?

– What is the distribution of the data collection tools used in the thesis studies on mathematical literacy between 2018–2022 (end of November)?

– What is the distribution of data analysis methods used in thesis studies on mathematical literacy between 2018–2022 (end of November)?

The Turkish Language Association defines literacy as «the state of being literate». Literacy can be defined as the ability of individuals to express and convey their feelings and ideas accurately by using various ways, to perceive what other people say fully and accurately, and to use the information available to them accurately and effectively [1]. The concept of literacy does not cover only one concept, but also general facts and situations [2]. Different words have come before the concept of literacy and this concept has gained various and different meanings. Literacy types such as maths literacy, science literacy, digital literacy can be given as examples. In addition to writing activities and reading, literacy is the ability of individuals to make sense of and perceive the life they live, to attribute this meaning to the relationships in all areas of their lives and to generalise this perception to their lives [3]. In today's conditions, literacy is an important concept that includes and expresses mental activities, language use, effective communication and attitudes rather than being a situation that is realised through reading and writing. Individuals who have acquired literacy skills are expected to develop themselves, be creative and have values. It is believed that literate individuals will both improve themselves and make various contributions to the solution of the problems of the society they live in.

The Turkish Language Association plays a key role in the formation and development of children's literature in Turkey. The research and publications carried out by the association reflect the evolution of Turkish children's literature throughout history, including the impact of cultural changes, educational programs and technological innovations.

The meaning of literacy as a concept has changed with the passing time and has both affected and changed the society in which it is lived with the studies. Mete defined the concept of literacy as follows: «It is the state of understanding objects, facts and events in more detail and expressing oneself by adding one's own essence to what one understands with the effective use of reading skill that starts with vocalising and making sense of writing symbols.» OECD defines the concept of literacy in the 2015 National Report, which was prepared after the PISA exam, as follows: literacy is «the ability of students to use their knowledge and skills, analyse, make logical inferences and communicate effectively when defining, interpreting and solving problems encountered in various situations in basic subject areas». Literacy is constantly developing as a concept and accordingly, changes and differentiations are seen in the definition of literacy. Literacy is an important factor for the development of society, and literacy has a relationship with economic, political, cultural and social development areas.

Today, there is a need for people who understand mathematics and can use mathematical knowledge and skills in daily life [4]. If we examine the curriculum objectives of today's education system, we see that the concept of literacy is indirectly or directly emphasised [5]. Mathematical literacy basically requires having knowledge of mathematics and applying this knowledge in our daily lives. To understand how mathematics can be used in real life, mathematical literacy is defined as the ability to use mathematics to meet one's needs. ML includes subject area content in mathematics, general mathematical skills (use of mathematical language, problem solving), the ability to recognise mathematical connections between social and scientific events, the ability to use mathematics, historical, philosophical and social thinking skills related to mathematics [6]. ML is the ability to use the mathematical knowledge and skills that students acquire through school curriculum, learning, assimilation and internalisation, and the knowledge they acquire from family and external environment to respond constructively and reflectively to problems encountered in all areas of life, and to find critical and concrete solutions [7].

ML is the level that students have shown and reached in knowing and recognising the mathematical problems in real life, expressing them as mathematical problems and dealing with them while solving the problems, rather than performing the operations in mathematics. It is important for all educated people to become competent in mathematics by gaining sufficient knowledge and skills [8]. All people should be empowered in the field of mathematics, understand the effects of scientific technologies on human life correctly, break prejudices, and benefit from them with free and original creative thinking. Although the aim of mathematics education is for all students to reach a high level of learning, it is accepted as a fact of life that the majority of them have difficulties in mathematics. Mathematical literacy refers to the ability to formulate, analyse and solve

real-world situations [9]. Mathematical knowledge is necessary but not sufficient to be mathematically literate. OECD defines mathematical literacy as follows;

«It is the individual's capacity to understand and recognise the role of mathematics in the world around him/her by using mathematical thinking and decision-making processes in solving the problems he/she will face today and in the future as a thinking, producing and criticising citizen.»

Due to the social needs arising from the increasing effects of mathematics and technology, the traditional aspect of mathematics has started to change and the concept of mathematical knowledge based on applications and models has gained more importance [10]. International exams such as PISA and TIMSS, which are international exams, consider mathematical literacy to be important and mathematical literacy is measured and evaluated by these exams [11]. In the literature on the content of mathematical literacy, there are publications and contents mostly related to PISA [12]. Mathematical literacy means that a person has advanced mathematical thinking skills and abilities, and this can be summarised as the state of being and using them. If it is desired to develop mathematical literacy, mathematics teaching should be seen as a whole with all its dimensions and aspects.

The International Student Literacy Assessment (PISA) program focuses on studying 15-year-old students around the world and assessing their competence in various fields of knowledge. There are several dimensions within PISA, including reading, mathematical literacy, and scientific literacy. Each measurement is aimed at assessing the specific skills and competencies of students in the relevant field.

PISA results in these measurements provide valuable information for countries and societies, as:

International comparison: PISA results allow countries to compare their educational systems with those of other countries, identifying strengths and weaknesses and identifying areas for improvement.

Evaluation of the effectiveness of educational programs: PISA results can serve as a tool for evaluating the effectiveness of educational programs and teaching methods in various fields.

Predicting future success: Competencies measured by PISA are often associated with academic success, employment, and active participation in society. These results can be used to develop strategies to prepare students for future challenges.

Based on the literature review, we can identify the following research questions:

What factors influence the evolution of themes, genres and styles of children's literature in Turkey?

How does children's literature interact with educational programs and how does this affect children's development?

How are modern technologies changing the production and distribution of children's books, and how does this affect their perception?

What quality criteria are used when evaluating children's books, and how do they relate to the needs of modern readers?

Against the background of the literary review, we provide you with a research hypothesis, it sounds like this, modern trends in children's literature in Turkey reflect dynamic socio-cultural changes supported by innovative methods of creating and distributing literary works.

Materials and methods

In this section, information about the research model, the population and sample according to the research model, the data collection tool, and the analysis of the collected data are explained.

This study was conducted using the document analysis method within the scope of qualitative research paradigm. Document analysis method is the systematic examination of existing documents or records as a data source, including the analysis of written sources containing information about the research topic. Document analysis method is used to access data for research purposes and to determine insights and findings from these data.

Document analysis provides access to generalisations and interpretations by providing verbal information about the subject to be addressed, summarising the data obtained by examining the material. Descriptive analysis method was used to analyse the data obtained in this study.

The research material consists of postgraduate theses published in the field of education and training, including the subject of 'Mathematical Literacy'. The research material was determined by criterion sampling method. The criteria used for the postgraduate theses were that the theses were conducted between the years 2018–2022, and that the theses were open to access in the YOK thesis centre and had permission. According to the criteria of this study, 20 theses were identified and examined in the YOK thesis centre.

Graduate theses related to mathematical literacy conducted in accordance with the determined purpose of the research were scanned. According to the determined criteria, postgraduate theses published between 2018–2022 were examined. As a result of these examinations, it was determined that 20 theses were suitable for the criteria. The 20 postgraduate theses obtained from YOK National Thesis Centre were categorised with the measurement tool developed by Bozdogan and the tags of the theses were created.

The data to be used in the research consist of postgraduate theses with the subject and title of «Mathematical Literacy». It was preferred that these postgraduate theses were open to access and had permission. The theses were searched by advanced search with the

words «Mathematical Literacy», «Mathematics» and «Literacy» in YOK National Thesis Centre. The literature review was limited to the years 2018–2022. The criteria used in the limitation are listed below.

1. Including the keyword «Mathematical Literacy»,
2. Scanning in the database of the National Thesis Centre of the Council of Higher Education,
3. Studies and researches are in the field of education and training,
4. To be made between 2018–2022,
5. The type of publication is a thesis,
6. Open access,
7. Turkish language.

In accordance with these criteria, 20 postgraduate theses were reached and these 20 theses were investigated.

The data used in the study were analysed by descriptive analysis method, which is one of the document analysis methods. It allows the data and findings obtained as a result of the research to be reorganised according to the problem of the research and to be handled in different dimensions. The data obtained from the studies were analysed in terms of the year, university, type of publication, keywords, design, subject, sample/ study group, data collection tools, data analysis methods. Tables were created as a result of these analyses. The findings were analysed by using percentage (%) and frequency (f). Percentage and frequency values are indicated in the tables.

Result

In this part of the study, the postgraduate theses on «Mathematical Literacy» in the field of Education and Training in Turkey, which were published in the YOK TEZ centre and the database was created, were examined by document analysis method. The data were analysed and presented as percentage and frequency from descriptive analysis methods. In this section, the findings of the study are given. The findings obtained as a result of the study were separated according to sub-objectives and types and explained and interpreted in tables.

What are the keywords used in the thesis studies on mathematical literacy between 2018-2022 (end of November) and how is their distribution? findings for the first sub-problem.

Based on the sub-problem of the research, a total of 20 postgraduate thesis studies published in the YOK National Thesis Centre between 2018 and November 2022 were reached. The analysed studies were classified according to the keywords they used. The distribution of the keywords used by these theses is shown in Table 1 below.

Table 1 – Frequency and percentage distributions of the keywords used in the search and the postgraduate theses accessed

Key Words	Theses reached	
	f	%
1. Maths literacy	20	51,30
2. Problem solving	2	5,12
3. PISA	6	15,40
4. Mathematical competences	2	5,12
5. Mathematical motivation	2	5,12
6. Mathematics education	3	7,70
7.Mathematical processes	1	2,56
8. Teaching programme	2	5,12
9. Basic mathematical skills	1	2,56
Total	39	100

When Table 1 is analysed, 9 different keywords were used to reach the theses. Among these keywords, «mathematical literacy» was used in 20 theses. The keyword «PISA» was used in 6 theses. This is followed by «mathematics education» and «mathematical competences», «problem solving», «mathematical motivation» and «curriculum» keywords with 3 and 2 theses, respectively. One thesis each was reached with the keywords «mathematical processes» and «basic mathematical skills».

Findings for the second sub-problem: How is the distribution of thesis studies on mathematical literacy between 2018–2022 (end of November) according to universities?

he second research problem was determined as «How is the distribution of thesis studies on mathematical literacy between 2018–2022 (end of November) according to universities?». Within the scope of the purpose of the study, the distribution of postgraduate theses on the subject of «Mathematical Literacy» according to universities is shown in Table 2 below.

When Table 2 was analysed, it was found that 10 postgraduate theses on mathematical literacy were conducted in different university institutes. Of the postgraduate theses in the study, 9 were conducted at Bursa Uludag University, 2 at Bartın University and 2 at Cukurova University. Abant İzzet Baysal University, Gaziantep University, Ankara University, Marmara University, Erzincan Binali Yıldırım University, Mugla Sıtkı KoCman University and Sakarya University followed with 1 thesis. It is seen that Bursa Uludag University has a high number of studies on the subject. The same finding was reached by Altun, Sonmez, and Yılmaz in their article in which they examined the theses on mathematical literacy and conducted document analysis.

Table 2 – Frequency and percentage distributions of the universities affiliated to the institutes where the theses were conducted

Universities	Theses reached	
	f	%
1. Bursa Uludag University	9	45
2. Bartın University	2	10
3. Cukurova University	2	10
4. Gaziantep University	1	5
5. Bolu İzzet Baysal University	1	5
6. Ankara University	1	5
7. Marmara University	1	5
8. Erzincan Binalı Yıldırım University	1	5
9. Mugla Sıtkı KoCman University	1	5
10. Sakarya University	1	5
Total	20	100

How is the distribution of thesis studies on mathematical literacy between 2018–2022 (end of November) according to years? findings for the third sub-problem.

The third sub-research problem was determined as «How is the distribution of thesis studies on mathematical literacy between 2018–2022 (end of November) according to years?». The distribution of the theses in the study according to the years of publication is shown in Table 3 below.

Table 3 – Frequency and percentage distributions of the year of publication of the theses

Publication year	Theses reached	
	f	%
2022	4	20
2021	3	15
2020	4	20
2019	8	40
2018	1	5
Total	20	100

When Table 3 is analysed, it is seen that the theses were conducted between 2018 and 2022. From 2018 to 2019, there has been an increase in the number of theses. However, there is a decrease from 2019 to 2020. In 2021, 3 theses were reached. In 2022 and 2022,

4 theses were reached each. Again, when the table is examined, it is determined that the most theses were conducted in 2019 with 8 theses. In 2019, it is seen that the studies on the subject have increased significantly. Similar findings were obtained in other studies.

How is the distribution of thesis studies on mathematical literacy between 2018-2022 (end of November) according to publication types? Findings for the fourth sub-problem.

The fourth sub-problem was determined as «How is the distribution of thesis studies on mathematical literacy between 2018–2022 (end of November) according to publication types?». The distribution of the theses in the study according to publication types is shown in Table 4 below.

Table 4 – Frequency and percentage distributions regarding the distribution and accessibility of theses

Publication type	Theses reached	
	f	%
1. Master Degree	16	80
2. Doctorate	4	20
Total	20	100

When Table 4 was examined, it was determined that 16 theses on Mathematical Literacy were master's theses and 4 of them were doctoral theses. Among these theses, the first master's thesis was conducted in 2018 and the first doctoral thesis was conducted in 2019. All 16 master's theses and 4 doctoral theses in the cross-sectional time period are open to access.

Findings for the fifth sub-problem «How is the distribution of thesis studies on mathematical literacy between 2018–2022 (end of November) according to research topics?

The fifth sub-problem was determined as «How is the distribution of thesis studies on mathematical literacy between 2018–2022 (end of November) according to research topics?». The distribution of the theses in the study according to the research topics is shown in Table 5 below.

When Table 5 is analysed, it is seen that 4 of the theses are studies in which the effect of mathematical literacy on mental skills such as self-efficacy, achievement, motivation, problem solving, etc. is examined. This is followed by awareness level and skills (3 theses) and mathematical literacy education and performances (3 theses). The number of theses dealing with the study of textbooks and curriculum is 2.

At what level is the distribution of thesis studies on mathematical literacy between 2018–2022 (end of November) according to the characteristics of the study group? Findings for the sixth sub-problem.

Table 5 – Frequency and percentage distributions related to the research topics of the theses

Research study topics	Theses reached	
	f	%
1. Effects of mathematical literacy on cognitive skills (self-efficacy, achievement, motivation, problem solving, etc.)	4	20
2. Awareness level and skills	3	15
3. Development of mathematical literacy	1	5
4. Reasoning competence	1	5
5. Professional development	1	5
6. Textbooks and teaching programme	2	10
7. PISA mathematics literacy proficiency level	1	5
8. Mathematical literacy education and performances	3	15
9. Impact of parental involvement	1	5
10. Achievement test development	1	5
11. Misconceptions	1	5
12. Difficulties encountered in solving mathematical literacy problems	1	5
Total	20	100

The sixth sub-problem of the study was determined as «At what level is the distribution of thesis studies on mathematical literacy between 2018-2022 (end of November) according to the characteristics of the study group?». The postgraduate theses on mathematical literacy were examined and analysed according to the study groups and shown in Table 6.

Table 6 – Frequency and percentage distributions of the sample/study group of the theses

Sample/Study group	Theses reached	
	f	%
1. Pre-school	–	–
2. Primary School	1	5,89
3. Secondary School	11	64,70
4. High School	–	–
5. University (Undergraduate)	2	11,76
6. University (Graduate)	–	–
7. Teacher	2	11,76
8. Administrator	–	–

Sample/Study group	Theses reached	
	f	%
9. Parent	–	–
10. Adult	1	5.89
Total	17	100

When Table 6 is examined, it is seen that the studies were mainly carried out with secondary school students. In this context, it is seen that studies were carried out with basic education students in a total of 12 theses (11 theses with secondary school students and 1 thesis with primary school students), teachers in 2 theses and university undergraduate students (2 theses) (teacher candidates). One thesis was also conducted with adults. Although the number of theses analysed is 20, there are 17 theses in the table. The reason for this is that 3 theses are book and programme reviews. Therefore, these theses are not included in the sample/study group table.

How is the distribution of the methods used in the thesis studies on mathematical literacy between 2018–2022 (end of November)? findings for the seventh sub-problem.

The seventh sub-problem of the study was determined as «What is the distribution of the methods used in the thesis studies on mathematical literacy between 2018–2022 (end of November)?». Research designs were classified as qualitative, quantitative and mixed. The research designs were found by examining the subheadings in the method section of the postgraduate theses considered in the study and the information obtained is shown in Table 7 below.

Table 7 – Frequency and percentage distributions of research designs/methods used in theses

Research design/methodology	Theses reached	
	f	%
1. Quantitative[1]	6	30
2. Qualitative[2]	9	45
3. Mixed	4	20
4. Design Based Research	1	5
Total	20	100

1 Quasi-experimental designs (1), survey (4) and correlational (1)

2 Action (2), Situation (4), Document analysis (3)

When Table 7 was analysed, it was determined that quantitative research methods were used in 6 of the theses, qualitative research methods were used in 9 of them and mixed research methods were used in 4 of them. Design-based research method was

used in 1 of the theses analysed. When the quantitative research methods used in the theses were analysed, the first place was taken by the survey design (4). Among the experimental designs, there is 1 thesis using quasi-experimental designs. This is followed by correlational research (1), which is one of the non-experimental designs. The leading qualitative research method used in the theses is case study (4) from interactive designs. Case study is followed by document analysis with 3 theses. Two of the qualitative researches used the action research method. The number of mixed studies in which qualitative and quantitative research were used together is 4. The number of theses using design-based research method is 1.

Findings for the eighth sub-problem: How is the distribution of data collection tools used in thesis studies on mathematical literacy between 2018–2022 (end of November)?

The eighth sub-research problem was determined as «What is the distribution of the data collection tools used in the thesis studies on mathematical literacy between 2018–2022 (end of November)?». The postgraduate theses on mathematical literacy were examined and analysed according to the data collection tools and shown in Table 8.

Table 8 – Frequency and percentage distributions of data collection tools used in theses

Data Collection Tools	Theses reached	
	f	%
1. Questionnaires[1]	1	1,81
2. Achievement/knowledge tests[2]	16	29,10
3. Scales[3]	9	16,36
4. Interview[4]	8	14,55
5. Observation[5]	2	3,63
6. Document[6]	19	34,55
Total	55	100

1 Likert (1)

2 Open-ended (12), Multiple choice (4)

3 Attitude (2), self-efficacy (3), motivation (2), competence (1), commitment (1)

4 Semi-structured (5), unstructured (1), focus group discussions (1), semi-structured interviews (1)

5 Participant observation (1), semi-structured (1)

6 Written documents (9), diaries (2), performance task (1), opinion form (2), personal information form (2), behaviour form (1), classroom observation form (1), letter (1)

When Table 8 is analysed, Likert type (1) questionnaire was used in the theses. Of the achievement/knowledge tests used, 12 were open-ended and 4 were multiple choice

questions. A total of 16 knowledge/achievement tests were used. In the analysed theses, 9 scales were used. These scales are listed as attitude (2), self-efficacy (3), motivation (2), competence (1) and commitment (1). A total of 8 interview forms including semi-structured (5), unstructured (1), focus group interviews (1) and semi-structured interviews (1) were used in the theses. Participant observation (1) and semi-structured observation (1) were used in the interviews. The documents used are as follows; written documents (9), diaries (2), performance task (1), opinion form (2), personal information form (2), behaviour form (1), classroom observation form (1) and letter (1). A total of 55 data collection tools were used. The most used tool was document and the least used tool was questionnaire.

Findings for the ninth sub-problem: «What is the distribution of data analysis methods used in thesis studies on mathematical literacy between 2018–2022 (end of November)?

The ninth sub-problem of the study was determined as «What is the distribution of data analysis methods used in thesis studies on mathematical literacy between 2018–2022 (end of November)?». The distribution of postgraduate theses on «Mathematical Literacy» according to data analysis methods is shown in Table 9 below.

Table 9 – Frequency and percentage distributions of data analysis methods used in theses

Data Analyses	Theses reached	
	f	%
1. Quantitative		
Descriptive[1]	11	20,75
Parametric[2]	20	37,74
Non parametric[3]	8	15,10
2. Qualitative		
Content 11	11	20,75
Descriptive	3	5,66
Total	53	100

1 Frekans/Yuzde (6), Art. Location/Standard sap. (5)

2 t-test (9), Korelasyon (2), Anova/Ancova (6), Shapiro-Wilk Normality Test (1), Normality Test (1), Tukey Test (1)

3 Wilcoxon (4), Ki-kare (1), Mann-Whitney U Test (3)

When Table 9 is examined, a total of 11 descriptive analysis methods including frequency/percentage (6), arithmetic mean/standard deviation (5) were used in the theses. A total of 20 parametric analysis methods including t-test (9), correlation (2), Anova/

Ancova (6), Shapiro-Wilk normality test (1) and Tukey Test (1) were used. Among the quantitative analysis methods, a total of 8 nonparametric analysis methods, including Wilcoxon (4), Chi-square (1) and Mann-Whitney U Test (3), were used. Among the qualitative analysis methods, content analysis was used in 11 theses and descriptive analysis was used in 3 theses.

Conclusion

This part of the study examines the results obtained. The information obtained in the course of the study was systematized in a table, and the main conclusions were drawn. When analyzing the results, it was noted that most of the studies were master's theses. It was concluded that the keyword «Mathematical literacy» used in the framework of the study was found in every dissertation reviewed. It was also noted that the universities that carried out the research were predominantly state-owned. The analysis indicated that most of the dissertations were completed at Burs Uludag University. In addition, it was revealed that the largest number of defended dissertations falls in 2019. It is also highlighted that the number of master's theses exceeds the number of theses at other levels.

When studying research topics, it was revealed that most of the research concerns the impact of mathematical literacy on mental abilities such as self-efficacy, achievement, motivation, and problem solving. The main object of research is secondary school students, which is associated with the development of mathematical literacy according to PISA standards.

Regarding research methods, qualitative methods were most often used, and the number of dissertations in which qualitative research was used exceeds the number of quantitative ones. Analysis of data collection tools has revealed that the most common method is document analysis. Also, the high level of use of PISA-related achievement tests is noted in this context.

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Математикалық сауаттылық бойынша кандидаттық диссертацияларды кейбір айнымалылармен сараптау

Аннотация. Біздің еліміз PISA емтиханының нәтижелері бойынша табыстың төмен деңгейін көрсеткендіктен, математикалық сауаттылық пәніне қызығушылық пен хабардарлық артты. Бұл зерттеу математика саласындағы «математикалық сауаттылық» пәнін қамтитын 2018 және 2022 жылдар аралығындағы (қараша айының соңы) жоғары білім кеңесінің ұлттық диссертациялық орталығында (YOK) жарияланған рұқсат етілген магистрлік және докторлық диссертацияларды зерттеу арқылы жүргізілді. Зерттеудің мақсаты-математикалық сауаттылықты қамтитын диссертацияларды жариялау жылы, университет, кілт сөздер, жариялау түрі, зерттеу тақырыптары, іріктеу/зерттеу тобы, зерттеу дизайны/әдісі, деректерді жинау және деректерді талдау құралдары тұрғысынан зерттеу. Бұл зерттеу үшін әдебиеттерге шолу жасалды. Зерттеу тобы критериалды іріктеу әдісімен анықталды. Зерттеу сапалы форматта жүргізілді және деректер құжаттарды талдау әдісімен жиналды. Жоғары оқу орнының ұлттық диссертациялық орталығында 2018–2022 жылдар аралығында жарияланған және қорғауға рұқсат етілген 20 магистрлік және докторлық диссертациялар қаралды. Пайдаланылған деректер құжаттарды талдау әдісімен талданды. 20 тезис жарияланым жылы, университет, кілт сөздер, жарияланым түрі, зерттеу тақырыптары, іріктеу/зерттеу тобы, зерттеу жоспары/әдісі, деректерді жинау құралдары және деректерді талдау әдістері тұрғысынан қаралды және талданды. Зерттеудің деректері мен қорытындылары сипаттамалық талдау арқылы

талданды. Алынған нәтижелер пайыздық (%) және жиілік (f) есептеулерін қолдана отырып талданды және кестелерде келтірілген.

Кілтті сөздер: математика, сауаттылық, математикалық сауаттылық, дипломдық жұмыс, педагогикалық аспектілер, салыстырмалы талдау, білім деңгейі.

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Экспертиза кандидатских диссертаций
по математической грамотности с некоторыми переменными

Аннотация. Поскольку наша страна продемонстрировала низкий уровень успешности по результатам сдачи экзамена PISA, интерес и осведомленность к предмету математической грамотности возросли. Это исследование было проведено путем изучения авторизованных магистерских и докторских диссертаций, опубликованных в Национальном диссертационном центре Совета по высшему образованию (YOK) в период с 2018 по 2022 год (конец ноября), которые включают предмет «Математическая грамотность» в области математики. Целью исследования является изучение диссертаций, охватывающих математическую грамотность, с точки зрения года публикации, университета, ключевых слов, типа публикации, тем исследования, выборки/исследовательской группы, дизайна/метода исследования, инструментов сбора данных и анализа данных. Для этого исследования был проведен обзор литературы. Исследовательская группа была определена методом критериальной выборки. Исследование проводилось в качественном формате, а данные были собраны методом анализа документов. В Национальном диссертационном центре Высшего учебного заведения были рассмотрены 20 магистерских и докторских диссертаций, опубликованных и разрешенных к защите в период с 2018 по 2022 год. Использованные данные были проанализированы методом анализа документов. 20 тезисов были рассмотрены и проанализированы с точки зрения года публикации, университета, ключевых слов, типа публикации, тем исследования, выборки/исследовательской группы, плана/метода исследования, инструментов сбора данных и методов анализа данных. Данные и выводы исследования были проанализированы с помощью описательного анализа. Полученные результаты были проанализированы с использованием процентных (%) и частотных (f) расчетов и представлены в таблицах.

Ключевые слова: математика, грамотность, математическая грамотность, дипломные работы, педагогические аспекты, сравнительный анализ, уровень образования.