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The Opinions of the Classroom Teacher Candidates on the 2024 Primary School Math Course Curriculum

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Abstract

The purpose of this research is to evaluate the opinions of classroom teacher candidates on the 2024 primary school first grade math course. The study group of the research consists of the 39 volunteering class teachers, in the senior year of Classroom Education Program, Faculty of Education, Kahramanmaraş Sütçü İmam University. In this research, prepared with the qualitative research pattern, an interview form was used, that is semi-structured, consisting of open-ended questions, as the data gathering tool. The data of the research obtained was analyzed via content analysis. According to the results of the research, the classroom teacher candidates stated positive opinion in general related with the 2024 primary school grade one math course curriculum. However, the classroom teacher candidates voiced as a negative opinion at most that the learning outputs are detailed and complex, the activities related with the content are inadequate, the applicability of the skills is low, and the differentiating activities are not quite applied in the classrooms. Furthermore, the classroom teacher candidates stated that some concrete materials, games and measurement and evaluation activities in the curriculum are not completely reflected in the related course books.

Keywords: Math teaching, curriculum, classroom teacher candidate, content analysis.

Introduction

In order to educate individuals, beneficial for the society, changing and improving of the curriculums, according to the basic needs and innovations in the education environment, have a great importance. The curriculums are updated at certain intervals because the current curriculums fail to respond the necessary needs, the notional learning fails to reach the required level, there are incompatibilities between the curriculums developed and the curriculums applied in the classrooms and in order to complete the missing points in the curriculum (Sowell & Zambo, 1997; Walsh, 2016; Wilson, 1990). Hence, after the success average of Turkey is found to be low in the international reports (GAISE, 2005; NCTM, 2000; TIMSS, 2023) a skill based and thematic curriculum approach was adopted in the curriculums, updated in 2024, in the scope of Turkish Century Education System Model in order to increase the success in the education both in the national and international arena and to respond the changing, improving needs. With this model, a learner focused, new approach was passed to, taking a lot of skills, such as prospective prediction, problem solving, reasoning, critical thinking, analytical thinking, self-regulation, communication, cooperation, and justice, of the students as the basis from preschool to university. With this approach, the importance of students gaining the skills, tendencies and values is emphasized not only gaining operational and notional knowledge (MEB, 2024b).

Theoretical Framework

Even though the basic purpose in the curriculum development studies is that the individuals gain knowledge and skills required to be learned and use this in the daily lives (Scott, 2018) especially the content, learning outputs, method-technique, measurement and evaluation are also taken into account (Braun, 2016; Kember & McNaught, 2007). The basic components of the curriculums, updated in 2024, in Turkey are content, learning outputs, skills, learning-teaching experiences, differentiation and learning proofs (MEB, 2024b).

The first one of the updates included in these curriculums is the content. Within the content, each theme, skill specific to the field, subject, idea, symbol, generalization, and notions are designed in an integral structure depending on the prerequisite and succession relationship (MEB, 2024a). The other one of the updates included in these curriculums is the learning outputs. The learning outputs can be defined as pressing the math field and notional skills, that the individuals are expected to learn, into service together with the process components at the end of the theme. With this respect, learning outputs assume a guide role in each stage of the learning-teaching process for gaining the knowledge and skills, determined in the curriculums (Demirel, 2012; MEB, 2024b; Varış, 1996).

The skills have an important place in the curriculums, updated in 2024. The first one of these skills is the "math field skills and notional skills", that play and active role in the learning outputs. While the math field skills are the skills, that cover the preschool, primary school, middle school and high school levels and that can be modelled via process components, the notional skills are integrated and high level thinking skills that are put into work while the abstract ideas and complex processes are converted into action (MEB, 2024b). Another skill included in these curriculums is tendencies. In the field literature, the "tendencies" are defined as the elements that regulate the skills and play a triggering role when converting them to action (Katz, 1993; Thornton, 2006). According to the Ministry of National Education (MEB) (2024b) the skills are the mental patterns that assume a supportive role when strengthening the link between skills and that support the total development of the individual. One of the important components of the skills are the "socio-affective learning" skills. Socio-emotional learning is the total of the skills that enables the individual to understand, apprehend and regulate social and emotional dimensions (Kabakçı & Totan, 2013). "Socio-emotional learning skills" are defined as an individual gaining and apply the knowledge, skills, and tendencies that are required for empathizing and developing a healthy identity (Özhan et al., 2024). The last component of the skills is the "literacy" skills. Literacy is that the individual gains the skill for correctly reading and interpreting his/her environment (Altun, 2005). The literacy skills are referred as diversifying and enrichening all courses with different content forms (MEB, 2024b). Hence, in the curriculums a society consisting of literate individuals who can research events and situations, can think critically is aimed (Gedik & Açıl, 2020). Therefore, it is thought that planning all skills, included in the curriculums such that they are consistent and completes each other would play an effective role that the holistic approach of the curriculum succeeds (Cırık et al., 2023; Özhan et al., 2024).

Another dimension of these curriculums is the learning-teaching experiences. The learning-teaching experiences are aimed that it is know what the pre-knowledge skills of the individuals are, their being readiness is evaluated, a connection is established between the pre-knowledge and new learnings and the skills are correlated with the daily life and presented in a holistic way in the learning-teaching process (MEB, 2024a; MEB, 2024b). Another dimension that is effective for these curriculums to success is the learning proofs. Learning proofs were formed such that they can assist the individual to convey the knowledge he/she learns in the classroom to the daily life and convert them into a skill in both orthodox and alternative

measurement and evaluation framework such that different learning forms are referred (MEB, 2024a; MEB, 2024b).

Finally, enrichening and supporting parts are included to the diversification dimension of the curriculums. Enrichening covers the superior talented individuals who can make sense of complex and abstract information quickly and use the knowledge and skills, aimed in the curriculum, more efficiently (MEB, 2024b). indeed, it is defined as superior talented individuals showing a talent over the average such as using the analysis, synthesis and evaluation steps when obtaining and regulating data, making original interpretations, solving problems (Sisk, 1987), having quick reasoning (Krutetskii, 1976), creative thinking (Renzulli & Reis, 1985). For the supporting, it is the application of more concrete examples, tools-equipment support and activities for visualization in the daily lives for the individuals who have learning difficulty to reach the knowledge and skills aimed by the curriculum (MEB, 2024a). For example, it is including the concrete activities for these individuals' the language and communication, attention, motor development, color, number and shape notions, location, direction and position notions, understanding socio-emotional and mathematical operations (Açıkgöz & Özmen, 2024; Butterworth, 2003; Cortiella & Horowitz, 2014; Felton, 1992; Jenkins & O'Connor, 2002). Therefore, it is thought that the diversification dimension would take an important place in the curriculums for the individuals who are different can use the knowledge and skills efficiently.

Literature Review

Considering that the foundations of math are laid formally in the primary school, the primary school math curriculum is one of the important curriculums with respect to primary school students developing a positive attitude against math, having excitement for the math course and gaining tangible experiences from the daily live (Henniger, 1987; Russell, 1981). In the studies related with the primary school math course curriculum, updated at different times in the national and international arena, the classroom teachers stated positive opinion in general (Arslan, 2020; Bal, 2008; Çakır & Kılınç, 2016; Duru & Korkmaz, 2010; Kılınç & Anılan, 2019; Koehler & Grouws, 1992; Mchugh, 2011; Sosniak et al., 1991; Turan & Tabak, 2021). Indeed, having the positive opinions related with the curriculums increases the applicability of the curriculum by the teachers (Ulusoy et al., 2017; Ünişen & Kaya, 2015). However, the problems experienced in the application are emphasized in some researches. For example, the classroom teachers stated that the materials (Bayar, 2023; Halat, 2007) and course times were inadequate in the 2005 primary school math curriculum (Bayar, 2023; Manouchehri & Goodman, 1998; Temli-Durmuş & Yusufoğlu, 2016). It was concluded that the math course curriculum was intense in a research made with the teachers in a primary school of South Africa (Glencross & Oliver, 1994). It was seen that the classroom teachers answered as "sometimes" related with gaining the problem solving, communication, reasoning, and binding skills to the students related with the 2005 primary school math course (grades 1-5) curriculum in another research (Toptaş, 2010). The teachers stated the opinion that there were no arrangements aimed for individual differences in the primary school math course curriculum in another research (Çetin, 2010; Yun-peng et al., 2006). Similarly, in the research made with the classroom teachers by Bayar (2023) and Erdoğan et al. (2016), they revealed that the measurement and evaluation field must be prioritized more in the primary school math course curriculums. Starting from this research, there are problems in the applications related with the primary school math course curriculums and it is needed that the opinions of the classroom teacher candidates are revealed. Furthermore, it is thought that determining the opinions of the classroom teacher candidates, one of the applicators of the curriculum, would contributed to seeing the positive and negative dimensions of the curriculum and making necessary changes because the classroom teacher candidates have the opportunity to apply and compare the 2024 primary school grade 1 math course curriculum, put into application for the first time, as well as the 2018 primary school grade 2, 3, and 4 math course curriculum

which is currently in effect in the scope of "Teaching application I-II" in the education year 2024-2025. With this respect, the purpose of this research is to evaluate the opinions of the classroom teacher candidates about 2024 primary school math course curriculum. These sub-problems were determined according to the purpose of the research:

1. How is the opinion of the classroom teacher candidates on the content of the 2024 primary school grade one math course curriculum?

2. How is the opinion of the classroom teacher candidates on the learning outputs included in the 2024 primary school grade one math course curriculum?

3. How is the opinion of the classroom teacher candidates on the skills included in the 2024 primary school grade one math course curriculum?

4. How is the opinion of the classroom teacher candidates on the learning-teaching experiences included in the 2024 primary school grade one math course curriculum?

5. How is the opinion of the classroom teacher candidates on the learning proofs included in the 2024 primary school grade one math course curriculum?

6. How is the opinion of the classroom teacher candidates on the diversification included in the 2024 primary school grade one math course curriculum?

Method

Research Model

The qualitative research method is used in this research. Qualitative research is a research type made for determine and interpret the meanings in a mind of an individual about a situation (Denzin & Lincoln, 1998). Furthermore, because this research is a research for finding out a situation, it is patterned by taking the case study, of the qualitative research methods, as the basis. A case study is the evaluation of one or more cases, of the data obtained through observation, documents such as interview (Creswell, 2018; Yin, 2017). With this respect, the case study is used for detailed analysis of the opinions of classroom teacher candidates about the application process of primary school math course curriculum, put into application in the education year 2024-2025.

Research Group

The research group consists of the classroom teacher candidates who study in the grade four in the Classroom Education Program, Faculty of Education, Kahramanmaraş Sütçü İmam University. When determining the participants, easily accessible case sampling, one of the purposeful sampling methods, was determined. In the researches where easily accessible case sampling is used, the researcher selects a case which is close and easy to access (Yıldırım & Şimşek, 2018). With this respect, the data consists of 39 classroom teacher candidates in total, volunteered 25 females and 14 males.

Data Collection Tool

Usually observation, interview and document analysis are used as the data collection tool, in order to realistically interpret the natural phenomena related with problems in the qualitative researches (Seale, 2002; Yıldırım & Şimşek, 2018). Interviewing is a technique used to collect information about the subject or situation from individuals participating in the research (Berg & Lune, 2015; Patton, 1987). In this research, "2024 Primary School Math Course Curriculum (Grade 1) Interview Form", developed by the researcher and consists of open ended questions, was used. The opinions of the experts were applied to after the field literature was scanned, related with the sub-problems of the research for the "scope validity" of this semi-structured interview form. The draft interview form was presented to 5 lecturers, such that 2 are math

education expert, 1 curriculum development, 1 measurement-evaluation, and 1 Turkish expert. After the necessary corrections were made according to the expert opinions, the final semi-structured interview form consists of personal information part and 6 questions.

Data Obtaining and Analysis

Usually, content analysis and/or descriptive analysis are used in the data analysis in the qualitative researches (Bowen, 2009). Content analysis was applied to in the data analysis in this research. The operation made in the content analysis is gathering the data similar to each other together in the framework of certain notions and themes and arranging and interpreting them such that the user can understand (Yıldırım & Şimşek, 2018). In another definition, the content analysis is systematically analyzing the data obtained and synthesizing themes and dimensions within the classification (Cohen et al., 2007). During the data coding process, this data obtained from the classroom teacher candidates, are coded as "OA1, OA2" ... "OA39" in order without disclosing the identities of the candidates. The data obtained were read with a great care and rendered to the computer environment by the researcher. The codes were generated via coding method and the themes were accessed by combining similar codes. Then, the data was analyzed based on the themes and presented in the findings chapter as tables, together with the frequencies.

This research was conducted according to the ethical principles and scientific research standards. The human rights, volunteerism principles and confidentiality principles were carefully followed in the research. First, the participants were informed that the research would only be used for scientific purposes and their personal data would be kept confidential. Detailed information on the purpose of the research, its method and data usage processes was made to the participants and their written and verbal consents were obtained and participation based on volunteerism was ensured. The data was collected through face to face interviews performed by the researcher in May 27-30, 2025 of the academic year 2024-2025. Because the participants didn't consent taking voice records, the researcher asked the questions included in the semi-structured interview form one by one during interview and noted the answers given by the participants by him/her hand writing. For the data verification process, since no voice recording was made, detailed notes were kept by the researcher during the interviews and they were read again to the participants after each interview and their truth was verified. The researcher, in order to decrease the risk that the participants answer biased, emphasized the objectivity principle during the data collection process. The participant used a character that is not judging during interviews for the participants feeling comfortable and all participation was conducted based on volunteerism. Furthermore, this research was found out as suitable with respect to ethics with the decision of the Social Sciences and Humanities Ethical Board, Kahramanmaraş Sütçü İmam University dated: 23.05.2025 and no: E-72321963-050.04-421849.

Validity and Reliability

In order to increase the reliability of the results of the research, two specialist made independent coding and the union of opinion ratio was calculated for ensuring compatibility between codes. In order to ensure the reliability between coders, the reliability formula [reliability = union of opinion / (union of opinion + difference in opinions) x 100] of Miles and Huberman (2016) was used. According to this formula, the reliability between the analysis of researchers was calculated as 97%. Having this calculation over 70% is deemed as reliable for the research (Miles & Huberman, 2016). In order to ensure internal consistency, correlations between themes were made. Furthermore, direct citations from the candidates are included in the findings chapter. It is seen as important for the validity of the research that direct citations from the individuals interviewed and the results are disclosed starting from them (Yıldırım & Şimşek, 2018).

Findings

In this part, it is dealt with both as the opportunities it offers with respect to the curriculum and skills and the problems experienced in the praxis in the interviews made in order to understand the general opinions of the teacher candidates on the primary school grade one math course curriculum that was updated in the scope of Turkish Century Education Model. With this respect, the findings, obtained according to the opinions of the teacher candidates are assessed in six dimensions as "content", "learning output", "skills", "learning-teaching experiences", "learning proofs", and "diversification". With respect to the applicability and sustainability of the curriculum, the positive and negative opinions, voiced by the teacher candidates.

Findings on the Content

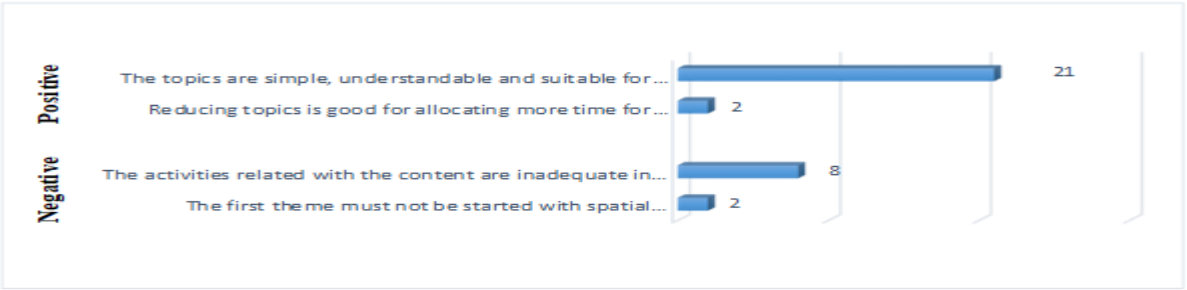
First the content dimension is taken into account when assessing the effect of the curriculum on the education system. The participants remarked that the content of the curriculum is suitable in general but the activities related with the content in the textbooks are insufficient. With this respect, the positive and negative opinions, voiced by the participants, related with the content of the curriculum are detailed in the Table 1.

Table 1
Positive/Negative Opinions Related with The Content

Positive opinions	**f**	**%**
The topics are simple, understandable and suitable for the grade one level.	21	91
Reducing topics is good for allocating more time for reading-writing.	2	9
Total	23	100
Negative opinions	**f**	**%**
The activities related with the content are inadequate in the course book.	8	80
The first theme must not be started with spatial relationships in the course book.	2	20
Total	10	100

Each code, appeared under the dimensions determined in the coding process, the statements repeated in the opinions of the teacher candidates for the content of the curriculum are given with the frequency (f) values. The frequency value indicates a subject or dimension is voiced with which prevalence among the participants. For example, the code "*the subjects are simple, understandable and suitable for the level of first grade*" was mentioned by 21 teacher candidates and shows that the understandability of the content is important. However, the code "*the activities related with the content in the textbook are insufficient"* was stated by 8 teacher candidates and shows that the activities for consolidating the content are insufficient. The basic purpose of the frequency analysis is to ensure that the opinions of the participants are presented systematically and the prominent subjects are revealed clearly. Furthermore, the frequency values are just a qualitative indicator and the meaning depth of this dimension is presented by supporting with direct citations below.

Graph 1
Positive/Negative opinions related with the content



The teacher candidates, even though they stated positive opinion in general related with the content, emphasized more activities related with the content are needed in the course book. The sample opinions related with this finding are given below.

OA(10): "*I have positive opinion. The topics are more compatible than 2018 curriculum.*"

OA(34): "*Negative. The activities are given very little in the course book*."

According to this finding, the opinions of the teacher candidates reveal that the content is positive, however the activities related with the content are needed to be increased.

Findings on the Learning Output

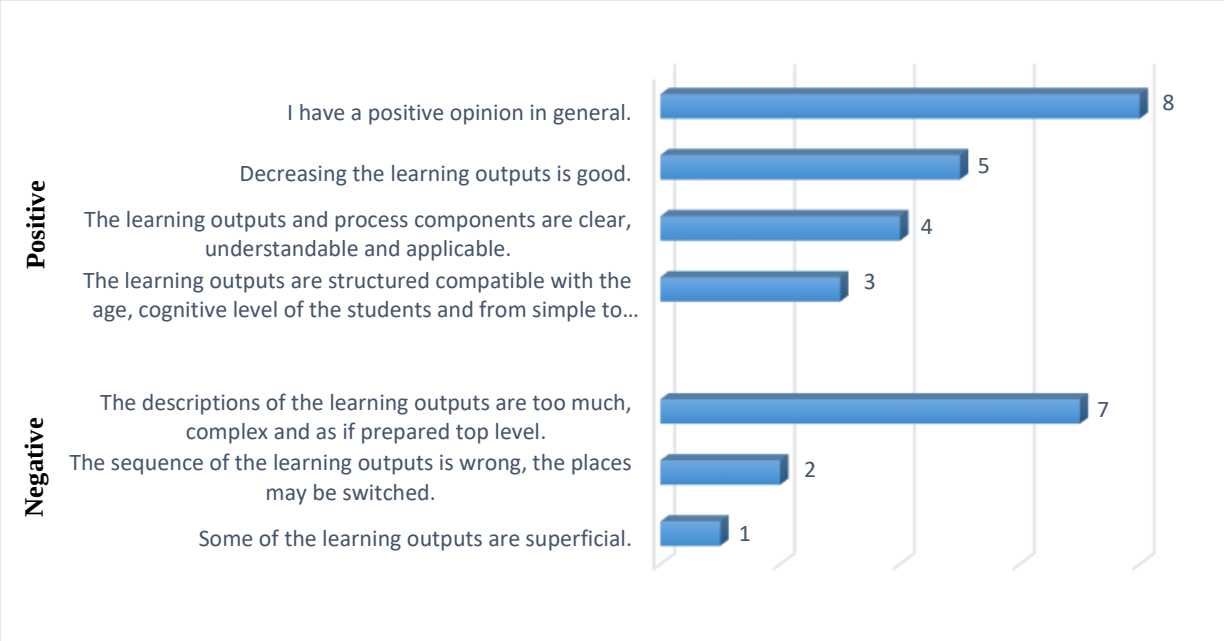
When assessing the effect of the curriculum on the education system, second the learning outputs dimension is taken into account. The participants stated that they think positive in general on the learning outputs dimension but the learning outputs are detailed and complex. With this respect, the positive and negative opinions voiced by the participants on the learning outputs are detailed in the Table 2.

Table 2
Positive/Negative Opinions Related with Learning Outputs

Positive opinions	**f**	**%**
I have a positive opinion in general.	8	40
Decreasing the learning outputs is good.	5	25
The learning outputs and process components are clear, understandable and applicable.	4	20
The learning outputs are structured compatible with the age, cognitive level of the students and from simple to complex.	3	15
Total	20	100
Negative opinions	**f**	**%**
The descriptions of the learning outputs are too much, complex and as if prepared top level.	7	70
The sequence of the learning outputs is wrong, the places may be switched.	2	20
Some of the learning outputs are superficial.	1	10
Total	10	100

The opinions of the teacher candidates on the learning outputs included in the curriculum are presented in the Table 2 with the frequency (f) values. Frequencies indicate a certain subject is emphasized by how much more teacher candidates. For example, the code "*I have a positive opinion in general*" included in the table was voiced by 8 teacher candidates and it indicates that this code is important in this scope. However, the code "*the descriptions of the learning outputs are too much, complex and as if prepared top level*" was stated by 7 teacher candidates and reflects the concerns of the candidates for the understandability of the learning outputs. Nonetheless, the frequency values reflected the intensity of the opinions for the learning outputs and the meaning context of the opinions of the teacher candidates are presented by supporting with direct citations.

Graph 2
Positive/Negative opinions related with learning outputs



The teacher candidates stated that they have a positive opinion in general for the learning outputs but they think learning outputs are too detailed and complex. The sample opinions related with this finding are given below.

OA(31): "*I have a positive opinion. I think decreasing learning outputs is correct.*"

OA(37): "*I didn't think it is OK. The gains were more clear and net and understandable in the previous curriculum. The learning outputs' descriptions are too much and cause confusion in this curriculum prepared in the scope of Education Model*."

According to this finding, it is revealed that even though the opinions of the teacher candidates are seen as positive, it is very detailed and complex.

Findings on Skills

When assessing the effect of the curriculum on the education system, third, the skills dimension is taken into account. The participants stated positively in general on the skills dimension but, that the applicability of the skills included in the curriculum is small. With this respect, the positive and negative opinions voiced by the participants on the skills are detailed in the table 3.

Table 3
Positive/Negative opinions related with skills

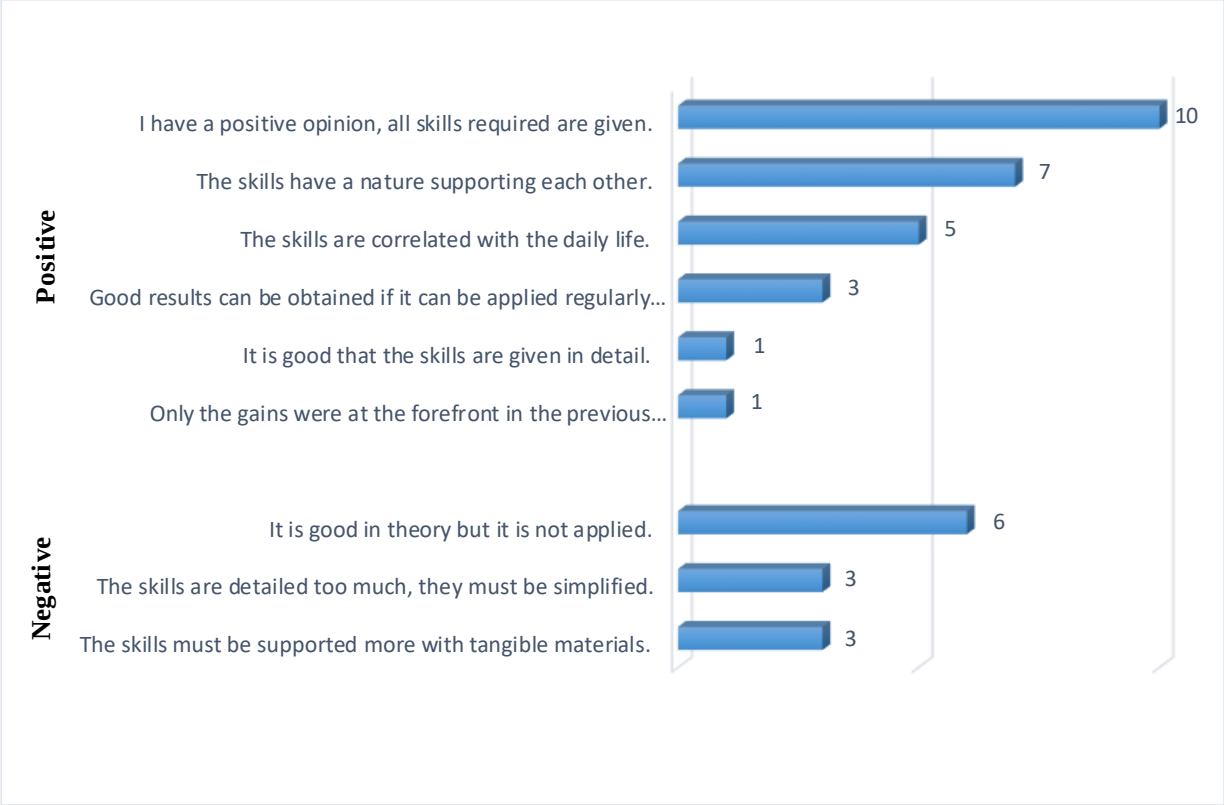
Positive opinions	**f**	**%**
I have a positive opinion, all skills required are given.	10	37
The skills have a nature supporting each other.	7	26
The skills are correlated with the daily life.	5	19
Good results can be obtained if it can be applied regularly and systematically.	3	11
It is good that the skills are given in detail.	1	4
Only the gains were at the forefront in the previous curriculum. The skills are kept at the forefront in this curriculum.	1	4
Total	27	100

Table 3
Continued

Negative opinions	f	%
It is good in theory but it is not applied.	6	50
The skills are detailed too much, they must be simplified.	3	25
The skills must be supported more with tangible materials.	3	25
Total	12	100

The opinions of the teacher candidates on the skills included in the curriculum are presented in the Table 3 with the frequency (f) values. For example, the code "*I have a positive opinion, all skills required are given*" included in this table was voiced by 10 teacher candidates and it shows that this code comes forward as an important situation. However, the code "*It is good in theory but not applied*" was stated by 6 teacher candidates and reflects the concerns on the application process of the skills. Furthermore, the frequency values reflected the intensity of the opinions for the skills and the statements of the teacher candidates are presented by supporting with direct citations.

Graph 3
Positive/Negative opinions related with skills



The teacher candidates, even though they consider the skills positively in theory, mentioned that these skills are not quite applied in the education process. The example opinions for this finding are given below:

OA(17): "*I have a positive opinion because the skills are given in a way supporting each other. For example, by correlating the math course with the disciplines such as Turkish and life sciences, the narrations were made effective. By this way, the children have the opportunity to reflect what they learn to the other courses."*

OA(35): "*Positive. It is directly linked with the daily life. I think at least the question "what is it to do with our daily lives?" would disappear".*

OA(15): "*I have a negative opinion because the skills are good in theory but not applied.*"

According to this finding, it shows that the opinions of the teacher candidates the skills are positive but the applicability of these skills is low.

Findings on Learning-Teaching Experiences

When evaluating the effect of the curriculum on the education system, forth, the learning-teaching experiences dimension is taken into account. The participants are positive in general on the learning-teaching experiences dimensions however, they remarked that the tangible materials and gaming activities are inadequate. With this respect, the positive and negative opinions of the participants related with the learning-teaching experiences are detailed in the Table 4.

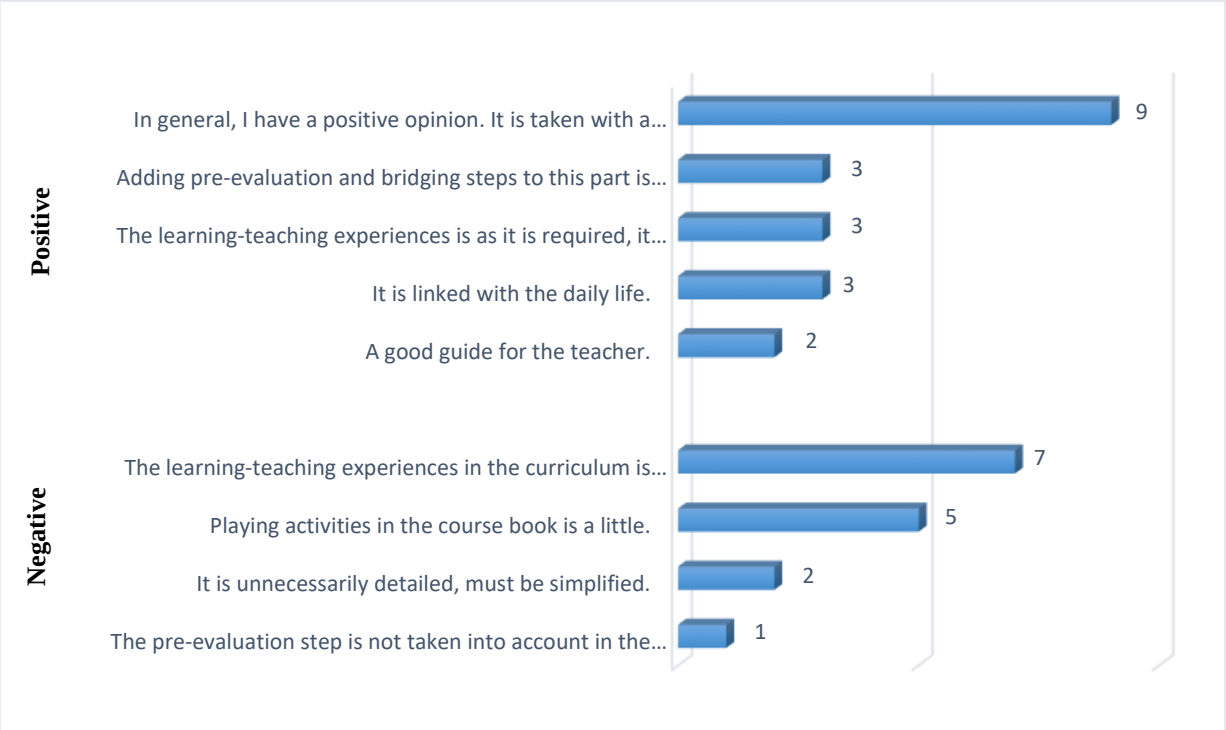
Table 4
Positive/Negative Opinions Related with Learning-Teaching Experiences

Positive opinions	**f**	**%**
In general, I have a positive opinion. It is taken with a holistic approach.	9	45
Adding pre-evaluation and bridging steps to this part is good.	3	15
The learning-teaching experiences is as it is required, it would be good if it can be applied.	3	15
It is linked with the daily life.	3	15
A good guide for the teacher.	2	10
Total	20	100
Negative opinions	**f**	**%**
The learning-teaching experiences in the curriculum is inconsistent with the course book. The tangible material activities in the course book are inadequate.	7	47
Playing activities in the course book is a little.	5	33
It is unnecessarily detailed, must be simplified.	2	13
The pre-evaluation step is not taken into account in the application.	1	7
Total	15	100

The opinions of the teacher candidates on the learning-teaching experiences included in the curriculum are presented in the Table 4 with the frequency (f) values. For example, the code "*I have a positive opinion in general. It is taken into account with a holistic approach*" shown in the table was voiced by 9 teacher candidates and it indicates that this code comes forward as an important situation in this scope. However, the code "*The learning-teaching experiences in the curriculum is inconsistent with the course book. The tangible material activities in the course book are inadequate*" was stated by 7 teacher candidates and shows that the tangible materials are not included adequately in the praxis process. Nonetheless, the frequency values reflected the intensity of the opinions for the learning-teaching experiences and the opinions of the teacher candidates are presented by supporting with direct citations.

Graph 4

Positive/Negative opinions related with learning-teaching experiences



The teacher candidates stated that the learning-teaching experiences are structured with a holistic approach however the curriculum and course books are not consistent at certain points and tangible materials are not used adequately in the course books. The example opinions for this finding are given below:

OA(32): "*I have a positive opinion. Adding pre-evaluation and bridging steps to the learning-teaching experiences part is good. These steps enables both to understand the readiness of the child and establishing links between knowledge*."

OA(2): "*Positive because the learning-teaching experiences is as it is required. How to be given is described with steps, a good progress can be obtained if it can be applied."*

OA(12): "*Negative because the learning-teaching experiences in the curriculum is inconsistent with the course book. Errors are seen frequently both in the visuals and texts and there are missing points in the tangible materials.*

OA(6): "*I have a negative opinion because the playing activities in the book are inadequate compared with the curriculum. The playing activities must be included more.*

According to this finding, the opinions of the teacher candidates reveal the learning-teaching experiences positive but the tangible materials and playing activities in the related course books are inadequate. For example, of the negative opinions, given above, the teacher candidate, coded OA(12) finds the learning-teaching experiences inconsistent with the book and tangible materials are inadequate. The example activity related with the data-based investigation theme of course book related with this case is given in the Figure 1.

2) The external walls of the apartment building below is to be painted. Who must be asked on to which color the walls are to be painted? What should be these questions?

3) Paint the apartment above to any color you like. Ask your friends in the class which color they paint the apartment building. Find the color preferred most accordingly.

Figure 1
Example activity belonging to bridging process (MEB, 2024c: s. 131)

As it can be seen in the Figure 1, the directive of the activity for the "bridging" component, which is the second stage of the learning-teaching experiences is given. In this activity it is not done over tangible materials and the students are requested to make classification over painting activity. However according to the curriculum, at this stage, they are expected to classify depending on different objects or figures brought to the classroom from the daily life (MEB, 2024a). Accordingly, it can be said that the bridging activity in the data-based investigation theme partially reflects the curriculum. Again, of the negative opinions related with this finding, the teacher candidate, coded OA(6) remarked the inadequacy of the playing activities in the course book. Considering the curriculum related with this case, no playing activity was seen in the data-based investigation theme of the curriculum (MEB, 2024c). these findings supports the opinions of the teacher candidate, coded OA(6).

Findings on the Learning Proofs

When evaluating the effect of the curriculum on the education system, fifth, the learning proofs dimension is taken into account. The participants are positive in general on the learning proofs dimensions and stated that the measurement-evaluation tools are based on both the process and result. However, they remarked that some measurement and evaluation tools in the curriculum are not included in the course book. With this respect, the positive and negative opinions of the participants related with the learning proofs are detailed in the Table 5.

Table 5
Positive/Negative opinions related with learning proofs

Positive opinions	**f**	**%**
In general, I have a positive opinion.	12	43
It focuses on both process and result.	9	32
The measurement-evaluation tools are better compared with the previous curriculum.	7	25
Total	28	100

Table 5
Continued

Negative opinions	f	%
There are missing parts in the measurement-evaluation. Curriculum and course book are not consistent.	5	100
Total	5	100

The opinions of the teacher candidates on the learning proofs included in the curriculum are presented in the Table 5 with the frequency (f) values. For example, the code "*I have a positive opinion in general*" shown in the table was voiced by 12 teacher candidates and it indicates that this code comes forward as an important situation in this scope. However, the code "*There are missing parts in the measurement and evaluation part. The curriculum is not consistent with the course book*" was stated by 5 teacher candidates and shows that the measurement-evaluation tools in the curriculum are not fully reflected in the course books. Nonetheless, the frequency values reflected the intensity of the opinions for the learning proofs and the meaning context of the opinions of the teacher candidates are presented by supporting with direct citations.

Graph 5
Positive/Negative opinions related with learning proofs

The teacher candidates mentioned that the measurement-assessment tools are based on both the process and result however some measurement-assessment tools included in the curriculum are not included in the course book. The example opinions for this finding are given below:

OA(32): "*I have a positive opinion. It focuses on both the process and result. Both orthodox and alternative measurement approaches are used.*"

OA(35): "*Negative because there are missing points in the measurement evaluation part. The curriculum and course book are inconsistent*."

According to this finding, opinions of the teacher candidates reveals that the learning proofs, included in the curriculum, in general, are positive and measurement-evaluation tools depend on both the process and result, however some measurement and evaluation tools in the curriculum are not included in the related course book. Indeed, the measurement tools are included for measuring and evaluating the learning-teaching processes in order to determine the knowledge levels and general performances of the students in the curriculum (MEB, 2024a). In the learning proofs of the primary school grade one math course curriculum, in general, there are performance duty, open-ended study paper, study paper containing matching questions, control list, etc. However, no matching activities are seen in the data-based investigation theme of the related course book (MEB, 2024c). These findings support the opinions of the teacher candidate coded OA(35).

Findings on Diversification

When evaluating the effect of the curriculum on the education system, last, the diversification dimension is taken into account. The participants stated positive opinion in general on the diversification dimensions with respect to prioritizing individual differences. However, the participants stated that this dimension is not quite applied in the classrooms. With this respect, the positive and negative opinions that the participants mentioned related with the diversification are detailed in the Table 6.

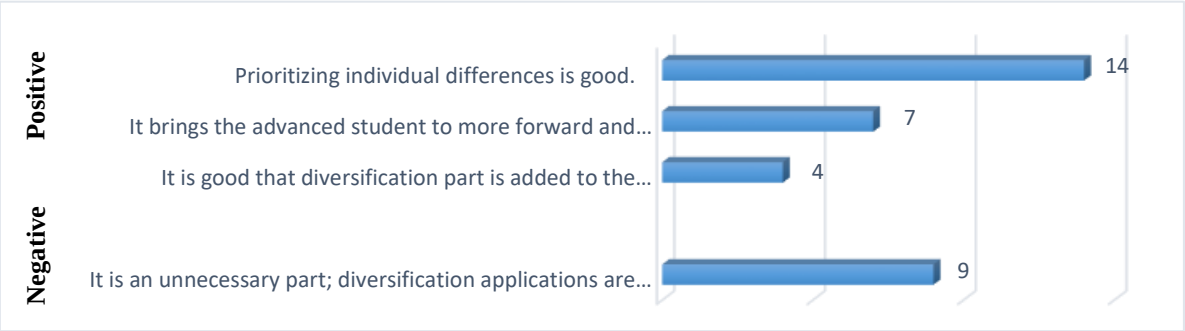
Table 6
Positive/Negative Opinions Related with Diversification

Positive opinions	**f**	**%**
Prioritizing individual differences is good.	14	56
It brings the advanced student to more forward and students fall back to normal level.	7	28
It is good that diversification part is added to the curriculum.	4	16
Total	25	100
Negative opinions	**f**	**%**
It is an unnecessary part; diversification applications are not done.	9	100
Total	9	100

The opinions of the teacher candidates on the diversification included in the curriculum are presented in the Table 6 with the frequency (f) values. For example, the code "*It is good that the individual differences are prioritized*" shown in the table was voiced by 14 teacher candidates and it indicates that this code comes forward as an important situation in this scope. However, the code "*An unnecessary part, diversification praxis isn't done*" was stated by 9 teacher candidates and reflects the concerns on the praxis process of this dimension. Furthermore, the frequency values are just a qualitative indicator and the opinions of the teacher candidates for this dimension are presented by supporting with direct citations.

Graph 6

Positive/Negative opinions related with diversification



The teacher candidates stated they consider adding a diversification part to the curriculum, in order to give importance to the personal differences, is positive but this part is not quite applied in the education process. The example opinions for this finding are given below:

OA(1): "*I have a positive opinion. Prioritizing individual differences is good.*"

OA(7): "*Very successful. Such a part was needed because it would bring the advance students to more forward and the students fall back to normal level.*"

OA(11): "*Negative because diversification applications are not made. The teachers don't want to spend time to this part separately.*"

According to this finding, the opinions of the teacher candidates shows diversification dimension, included in the curriculum is positive however this dimension is not quite applied in the classroom.

Discussion, Conclusion and Recommendations

The primary school grade one math course curriculum, updated according to the contemporary needs in the scope of Turkish Century Education Model targets an education approach that is more innovative and student centered. This curriculum is not target supporting only the academic success but also the social, emotional and moral developments of the students (Akpınar et al., 2024). This curriculum, also targeting to increase the quality in education, takes the individual differences into account too. With this respect, for making his curriculum applicable and sustainable, it is expected that it is consistent with the realities in the field, not just theoretically (MEB, 2024b). Furthermore, the educators having an active role in this process is a determining factor for this curriculum to be successful in practice (Ülçay, 2024). Hence, it is required that the curriculums are based on not just students' needs, but also the pedagogical principles that the educators can apply (Hesapçıoğlu, 1998; Obro, 2021; Rogayan & Villanueva, 2019). In this sense, minimizing the difficulties that the educators can experiences in the practice has critical importance. With this respect, the results, related with the dimensions "content", "learning output", learning-teaching experiences", learning proofs", and "diversification", were supported with the literature in the interviews made in order to understand the general opinions of the teacher candidates on the primary school grade one math course curriculum. Then, recommendations were made in the scope of the research results.

In the 2024 primary school math course curriculum it is aimed to give the skills specific to the field, subject, idea, symbol, generalization, and notions according to the predecessor and succession relations in the framework of the content (MEB, 2024a). it was stated that the content is mostly simple, understandable and suitable for the level of the student in the opinions of the teacher candidates. Similar results are revealed in the literature of the field (Arslan & Özpınar, 2009; Duyul et al., 2025; Ersoy, 2006; Gezgin, 2020; Tyson & Woodward, 1989; Woodward & Elliott, 1990). For example, it is stated that making associations between notions develops the students' cognitive development, abstract thinking, reasoning, and problem solving skills (Perkins, 1994). Furthermore, a content offering a planned and systematical progress, if given suitably with their development traits, ensures that they make association between notions (Anderson & Krathwohl, 2001; Malhotra, 2006; Tüysüz & Ekici, 2022). However, the teacher candidates, in their opinions, remarked that the activities related with the content are inadequate in the course books. Similarly, it was emerged that the activities are needed to be increased in the literature of the field (Bayar, 2023; Bulut et al., 2016; Tutak & Güder, 2012). With this respect, it can be said that the results of this research show similarity with the literature of the field. In conclusion, in order that this content, prepared according to the Turkish Century Education Model is sustainable, it is needed that the teachers and teacher candidates are supported with trainings during the service and before the service and at the point where the content is understood better in the course books, more activities are included. As a matter of fact, the evaluation of the curriculum is a dynamic process (Klenowski, 2010) and such researches have great important with respect to ensure the sustainability of the curriculum (Uşun, 2012).

In the learning outputs of the 2024 primary school math course curriculum, it is aimed that the math field and notional process skills, that are expected to be accomplished by the individual, are put into work together with the process components (MEB, 2024a). In the opinions of the teacher candidates, they found the learning outputs positive in general. Similar results were obtained related with the learning outputs of the curriculums updated at different times (2005, 2015, 2018) in Turkey in the field literature (Duru & Korkmaz, 2010; Gezgin, 2020; Kılınç &

Anılan, 2019; Turan & Tabak, 2021; Tutak & Güder, 2012; Yalçın, 2017). As a matter of fact, subjecting the targets, determined in the learning outputs, to a certain sorting and classification is an important factor when increasing the efficiency of learning (Anderson, 2005; Bloom, 1956; Ersoy, 2006; Ornstein & Hunkins, 1993; Schlesinger et al., 2015). With this respect, instead of knowledge conveying in only a certain discipline area of the learning outputs, it is considered it is important that the individual finds him/herself and makes contribution in academic sense (İşeri, 2019). Furthermore, the developments in the math field enable that the students reach the learning outputs aimed (Fortus & Krajcik, 2011). However, in the opinions of the teacher candidates, they thought that the learning outputs are too detailed and complex. However, it was stated that the learning outputs are taken into account in a simple way in the literature of the field (Aktan, 2020; Kablan et al., 2013). This result doesn't coincide with the learning outputs result determined in the math curriculum of Aktan (2020) and Kablan et al. (2013). In conclusion, even though the teacher candidates state positive opinion mainly for the learning outputs, it can be recommended that the ones preparing the curriculum arrange the learning outputs in a simpler, clearer and understandable way, such that the educators can understood.

In the 2024 primary school math course curriculum, in the framework of the skills, it is aimed that the math field skills, conceptual skills and the trends, which have the nature of predecessor of these skills, socio-emotional learning skills, and literacy skills are given in a holistic structure (MEB, 2024a). The teacher candidates mostly stated positive opinion related with the skills. It was seen that there are researches focusing on measuring visual, critical, digital, and financial literacy skills at most in the curriculums in the literature of the field (Kılınç, 2025; Sezer & Dedeoğlu, 2024). As a matter of fact, it is stated that in order to have the skills such as communication, cooperation, critical thinking, problem solving, analytical thinking, making conclusions, accessing and using the information (Bates, 2002; Reddy, Sharma & Chaudhary, 2020), the individuals are required to use the literacy in math skills (Frith & Prince, 2006; Kaiser & Willander, 2005). Furthermore, even though skills have an important part in the curriculums, it encourages the students to improve their abilities such as communication, cooperation, problem solving, critical thinking, reasoning, making independent decisions and to gain lifelong learning skills (Cacicio et al., 2023; Faiz & Avcı, 2018; Guo et al., 2025; Omoniyi, 2023; Şahin, 2025). However, the teacher candidates, in their opinions, show that the skills included in this curriculum do not have a quite applicability in the learning-teaching process. As a matter of fact, considering the literature, in the research performed by Duyul et al. (2025), similar results were obtained and the teachers, even though they consider this curriculum as holistic and innovative, mentioned that they have concerns on its applicability. In another research, the inadequacy of the activities for improving the skills in the math course books were emphasized (Dede & Arslan, 2019). In conclusion, it can be said that the skills are structured by correlating them in the daily lives in the curriculum but it is not applied as needed in the learning-teaching process. With this respect, it can be recommended that the teachers and teacher candidates are sensitized on skills with in-service and before service trainings.

In the 2024 primary school math course curriculum in the learning-teaching experiences, it is aimed to know what are the pre-knowledge and skills of the individuals, to evaluate their preparedness, to establish the associations between the pre-knowledge and new learnings, and to present the skills in a holistic way in the learning-teaching process by associating them with the daily life (MEB, 2024a). In the opinions of the teacher candidates, in addition to considering the learning-teaching experiences mostly positive, it was stated that this part is structured with a holistic approach and associated with the daily life. As a matter of fact, in the literature, it is emphasized that it must be associated with the daily life for increasing the applicability of the in-class activities in the math course books (Bayar, 2023; Dede & Arslan, 2019; Şahin, 2025; Tartan & Erşen, 2024). Besides, in the modern age, the importance of associating in the

education process is clearly emphasized (Chapman, 2012; Garcia & Dolores, 2017; Lee, 2012). With this respect, the results of this research has a nature supporting the literature. However, the teacher candidates, in their opinions, remarked that the learning-teaching experiences are not consistent with the course book at certain points and this part is not adequately supported with the tangible materials. Similarly, in the literature of the field, the teachers stated that the tangible materials are used less in the math course books (Bayar, 2023; Halat, 2007) and for this curriculum to success the necessary support mechanisms must be created with in-class applications (Duyul et al., 2025). Whereas, it is thought that using more tangible materials at small grade levels would make easy for the student to make sense of mathematics. Furthermore, it was observed that the students of the countries where qualitative activities are covered in the math course book are more successful in the international examinations (Reçber, 2012). Indeed, in the literature it is emphasized that tangible materials are important for the students to make sense of the notions formally (English & Watson, 2015; Makar, 2016). Furthermore, in this research the teacher candidates stated their opinions as the playing activities are inadequate in the 2024 primary school math grade one course books. However, it was found out that playing activity is not included in the data-based investigation theme of the related course book (MEB, 2024c) even though it was emphasized that games have an important place when creating metal patterns by making a knowledge/topic fun in the curriculum (MEB, 2024b). Yet, it is known that game is an efficient tool for an individual to socialize, discover him/herself and learn entertainingly (Durualp & Aral, 2010; Moghaddam, 2014). Besides, it is stated that when learning via games, the individuals meet with the educational content on one hand when discovering the game (Garris et al., 2017). Considering that it is in the 7-11 age tangible operations period according to Piaget, giving mathematical notions through entertaining game activities in the learning-teaching experiences, improving knowledge and skills, reinforcing the knowledge learnt, ensuring the knowledge isn't forgotten, starting from the grade one of the primary school, have great importance with respect to provide measurement-evaluation opportunity (Akkuş-Sevigen, 2013; Piaget & Cook, 1952; Prensky, 2008; Uğurel & Moralı, 2008). Therefore, in this research, it is thought that reflecting the game loving tendency, given in the primary school grade one math course curriculum, to the related course books would be efficient for the students to develop the first math experiences. In conclusion, even though the teacher candidates they state positive opinion to the learning-teaching experiences, it can be recommended that the activities are supported with more tangible materials and games are included more in the math course books.

In the learning proofs in the curriculum of 2024 primary school math course, it is aimed that the knowledge the individual learns inside the classroom is given with a nature that it would assist that it can be brought to the daily life and turned into a skill within both an orthodox and alternative measurement and assessment framework such that it refers to different learning ways (MEB, 2024a). The teacher candidates in their opinions stated that they consider the learning proofs mostly positive and the measurement-assessment tools in the curriculum is based on both the process and result. In the literature of the field it is understood that mainly the alternative measurement and assessment tools, such as portfolio, performance evaluation, control lists are used in the math education (Bol, 2004; Bol et al., 2002; Dai, 2019; McMillan et al., 2002; Wilson, 1990; Zhang & Burry-Stock, 2003). In addition to this, Turan and Tabak (2021) and Güneş et al. (2025), in the researches they performed, stated that the measurement and assessment tools in the math curriculums are effective for providing feedback both in supporting learning-teaching process and by determining the students learns inadequately. Hence, it is emphasized that, in addition to testing all of the targets planned in the theme determined in the theme, it is required to use the measurement and assessment tools for getting to the bottom of the reasons for the knowledge learned inadequately and not learnt at all (Gipps & Stobart, 2003; Özçelik, 2016). However, the teacher candidates, in their opinions, remarked that some

measurement and assessment tools in the curriculum are not reflected to the course books. For example, it was found out that even though matching activities are included in the data-based investigation theme of the curriculum, such an activity is not applied in the course book. Whereas, it is stated in the literature of the field it is stated that matching activities are efficient for the student to develop abilities such as focusing, matching skill, remembering, reasoning, making conclusions, and problem solving (Bottino & Ott, 2006; Ott & Pozzi, 2012). With this respect, it is stated that measurement and assessment tools are given more importance in the curriculum and course books (Bayar, 2023; Bulut et al., 2016; Çetin, 2010; Dede & Arslan, 2019; Erdoğan et al., 2016; Gezgin, 2020; Güzel et al., 2023; Orbeyi, 2007; Sargın, 2016; Sevim, 2019; Tutak & Güder, 2012). In conclusion, it can be recommended that measurement and assessment tools are given completely in the math course books from the first grade of the primary school.

In the diversification part in the 2024 primary school math course curriculum, it is aimed that an additional support is given to the gifted individuals who can make sense of knowledge and skills aimed in the curriculum and use them more efficiently and the individuals who have learning difficulty for reaching the knowledge and skills aimed by the curriculum (MEB, 2024a). The teacher candidates considered addition of diversification part to the curriculum positively with respect to giving importance to personal differences. Furthermore, the candidates mentioned that this part would provide positive contribution for carrying the advanced student to farther and the student who is behind to the normal level. Results, similar to this result, are revealed in the literature of the field. For example, Güneş et al. (2025) stated that 2024 math curriculum is structured as a curriculum that is student oriented and regards personal differences in the research they performed. In addition to this, Filiz (2021) and Topal (2024) had the conclusion that the curriculums prepared for the students with math learning difficulty increase the academic success of the students and play an important role for closing the gap between peers. Furthermore, it is emphasized in the literature of the field that the curriculums prepared for the students gifted and have math learning difficulty are beneficial with respect to uncovering the different aspects of the student, improving their capacities, and contributing positively to their academic success (Boran & Aslaner, 2008; Demeuse & Strauven, 2016; Duyul et al., 2025; Karaduman, 2010; Özyaprak, 2012; Sheffield, 1994). However, the teacher candidates remarked that this part is not quite applied in the learning-teaching process. In the literature of the field, it is stated that the knowledge of the teachers for the students who experience math learning difficulty is inadequate (Kaçar, 2018) and they continue the math coursed only with the activities for the class average (Avcı, 2020). As a matter of fact, Fırat & Erdem (2019), in the research they performed, the classroom teachers mentioned that the problems of more than half of the students experiencing math learning difficulty in the first grade of the primary school continues in the fourth grade too and this situation causes math anxiety in the students. At this point it is pointed out decreasing such cases in the math education can be possible, not but just changes in the in the curriculum (Akpınar et al., 2024) but also by increasing the pedagogical knowledge of the teachers and the students accessing the adequate educational materials (Duyul et al., 2025). In conclusion, even though including the diversification part from the first grade of the primary school to the curriculums is a positive development, it can be recommended that the teachers and teacher candidates prioritize applications emphasizing personal differences in the learning-teaching process.

In conclusion, it is seen that a holistic development is brought forefront with respect to the content, learning outputs, learning-teaching experiences, learning proofs, and skills in the primary school grade one math course curriculum, updated in the scope of the Turkish Century Education Model. Besides, this curriculum takes individual differences into account in the scope of a student-centered education approach and diversification. Hence, the perceptions of the

educators for this process are determining factor with respect to being able to apply the curriculum successfully. Because not having the necessary support for the opinions of the educators related with the curriculum may limit the applicability of the curriculum. Because of this, in order to conduct the curriculum healthily, it is required to support the educators and to increase the applicability of the curriculum amendments in the field. By this way, it can be ensured that the changes anticipated by the curriculum are made more efficient and sustainable in the long term.

Furthermore, this research presents a qualitative evaluation for understanding how the primary school grade one math course curriculum, that was updated according to a skill based and thematic curriculum approach, is perceived by the teacher candidates. However, among the restrictions of the research are the sample space consisting of teacher candidates only in a certain geographical region and newly starting of application state of this curriculum that was prepared based on skills. With this respect, the opinions of the teacher candidates depend only on their individual experiences, it can be recommended to make researches with a wider dimension, quantitative and long termed in order to understand the real effects of this curriculum.

Declarations

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References

Açıkgöz, G., & Özmen, E. R. (2024). Öğrenme güçlüğü risk grubunda olan ana sınıfı çocuklarının özelliklerinin aile ve öğretmen görüşlerine göre belirlenmesi [Determination of the Traits of the Children who are in the Learning Disability risk group per family and teacher opinions]. *International Journal of Education Technology and Scientific Researches, 9*(28), 575-593. http://dx.doi.org/10.35826/ijetsar.743

Akkuş-Sevigen, F. (2013). *Oyun temelli matematik eğitim programının çocuğun matematik gelişimine etkisinin incelenmesi [Evaluation of the effect of game based math curriculum on the development of math]*. Yüksek lisans tezi (Postgraduate thesis], Gazi Üniversitesi (Postgraduate thesis), Turkey.

Akpınar, B., Özer, B., Oral, B., & Köksalan, B. (2024). Türkiye Yüzyılı Maarif Modelinin program geliştirme ve felsefi düzlemden analizi [Analysis of the Turkish Century Education Model from a curriculum development and philosophical plane]. *EKEV Akademi Dergisi* (*EKEV Academic Journal*), 99, 59-73. https://doi.org/10.17753/sosekev.1489135

Aktan, O. (2020). İlkokul matematik öğretim programı dersi kazanımlarının yenilenen Bloom taksonomisine göre incelenmesi [Investigation of primary school mathematics curriculum lesson acquisitions according to renewed Bloom Taxonomy]. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi (Pamukkale University Journal of Education)*, 48, 15-36. doi: 10.9779/pauefd.523545

Altun, A. (2005). *Gelişen teknolojiler ve yeni okuryazarlıklar [Developing Technologies and new literacies]*. Anı Yayıncılık.

Anderson, L. W. (2005). Objectives, evaluation, and the improvement of education. *Studies in educational evaluation, 31*(2-3), 102-113. https://doi.org/10.1016/j.stueduc.2005.05.004

Anderson, L. W., & Krathwohl, D. R. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives: Complete edition*. Addison Wesley Longman, Inc.

Arslan, S. (2020). Yeni ilköğretim matematik dersi öğretim programının gerçekleşmesine ilişkin öğretmen görüşleri [Teachers' opinions on performing the new primary school math course curriculum]. *International Social Sciences Studies Journal, 6*(60), 1553-1562. http://dx.doi.org/10.26449/sssj.2272

Arslan, S., & Özpınar, İ. (2009). İlköğretim 6. sınıf matematik ders kitaplarının öğretmen görüşleri doğrultusunda değerlendirilmesi [Evaluation of the primary school 6th grade math course books according to the opinions of the teachers]. *Dicle Üniversitesi Ziya Gökalp Eğitim Fakültesi Dergisi (Dicle University Ziya Gökalp Education Faculty Journal)*, 12, 97–11. Retrieved from https://dergipark.org.tr/en/download/article-file/787134

Avcı, A. (2020). *Matematik öğrenme güçlüğü yaşayan ilkokul öğrencilerine yönelik öğretim uygulamalarının değerlendirilmesi [Evaluation of the educational applications for the first school students experiencing math learning disability]*. Yüksek lisans tezi (Postgraduate thesis), Dokuz Eylül Üniversitesi (Dokuz Eylül University), Turkey.

Bal, P. (2008). Yeni ilköğretim matematik öğretim programının öğretmen görüşleri açısından değerlendirilmesi [Evaluation of new primary school math curriculum with respect to teachers' opinions]. *Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi (Cukurova University Institute of Social Sciences Journal), 17*(1), 53-68. Retrieved from https://dergipark.org.tr/en/download/article-file/50411

Bates, A. W. (2002). Managing technological change: Strategies for college and universities. CA: Jassey Bass.

Bayar, M. (2023). Sınıf öğretmenlerinin ilkokul matematik programını uygularlarken karşılaştıkları sorunlar ve çözüm önerileri [Problems faced by classroom teachers when applying primary school math curriculum and the solutions proposed]. *Uluslararası Sosyal Bilimlerde Mükemmellik Arayışı Dergisi (International Search for Perfection in Social Sciences Magazine), 5*, 44-54. Retrieved from https://dergipark.org.tr/tr/download/article-file/3616244

Berg, B. L., & Lune, H. (2015). *Qualitative research methods in social sciences*. (Trans. Aydın H.). Eğitim Yayınevi.

Bloom, B. S. (1956). *Taxonomy of educational objectives: The classification of educational goals*. *Handbook I: Cognitive Domain*. New York: David McKay Company.

Bol, L. (2004). Teachers' assessment practices in a high-stakes testing environment. *Teacher Education and Practice, 17*(2), 162-181.

Bol, L., Ross, M., Nunnery, J., & Alberg, M. (2002). A Comparison of teachers' assessment practices in school restructuring models by year of implementation. *Journal of Education for Students Placed at Risk (JESPAR), 7*(4), 407-423. https://doi.org/10.1207/S15327671ESPR0704_3

Boran, A. İ., & Aslaner, R. (2008). Bilim ve sanat merkezlerinde matematik öğretiminde probleme dayalı öğrenme [Problem based learning in the mathematic education in science and art centers]. *İnönü Üniversitesi Eğitim Fakültesi Dergisi (Inonu University Faculty of Education Journal), 9*(15), 15-32. Retrieved from https://dergipark.org.tr/en/download/article-file/92327

Bottino, R. M., & Ott, M. (2006). Mind games, reasoning skills and the primary school curriculum: Hints from a field experiment. *Learning Media & Technology, 31*(4), 359375. http://dx.doi.org/10.1080/17439880601022981.

Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal, 9*(2), 27-40. https://doi.org/10.3316/QRJ0902027

Braun, H. (2016). *Meeting the challenges to measurement in an era of accountability*. (p. 436) Taylor & Francis.

Bulut, S., & Boz-Yaman, B., & Yavuz, F. D. (2016). 7. sınıf matematik ders kitaplarında dönüşüm geometrisi işlenişinin öğretim programları açısından değerlendirilmesi [Evaluation of teaching of transformation geometry in the 7th grade math course books with respect to the curriculums]. *İlköğretim Online (Primary School Online), 15*(4), 1164-1190. http://dx.doi.org/10.17051/io.2016.86316

Butterworth, B. (2003). Dyscalculia screener: Highlighting pupils with specifics learning difficulties in maths, age 6-14 years. London: NFER-Nelson.

Cacicio, S., Cote, P., & Bigger, K. (2023). *Investing in multiple literacies for individual and collective empowerment*. [White Paper]. The Adult Literacy and Learning Impact Network. https://allinliteracy.org/wp-content/uploads/2023/06/Investing-in-Multiple-Literacies-forIndividual-and-Collective-Empowerment.pdf

Chapman, O. (2012). Challenges in mathematics teacher education. *Journal of Mathematics Teacher Education,*

15(4), 263-270. DOI 10.1007/s10857-012-9223-2

Cırık, İ., Genç, E., Demirel, E., & Yılmaz, M. İ. (2023). K12 beceriler çerçevesi öğretim tasarımı modeli: Anahtar ögeler [K 12 skills framework education design: Key factors]. *Millî Eğitim (National Education)*, 52, 997-1026. https://doi.org/10.37669/milliegitim.1307715

Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (5th Ed.). London and New York: Routledge Falmer.

Cortiella, C., & Horowitz, S. H. (2014). The state of learning disabilities: Facts, trends and emerging issues. *New York: National center for learning disabilities*, *25*(3), 2-45.

Creswell, J. W. (2018). *Qualitative research methods – qualitative research and research pattern per five approaches* (M. Bütün ve S. B. Demir, Trans. Ed). Siyasal Kitapevi.

Çakır, S., & Kılınç, H. H. (2016). İlkokul 4. sınıf matematik dersi programına ilişkin öğretmenlerin görüşleri [Opinions of the teachers on the primary school grade 4 math curriculum]. *Mehmet Akif Ersoy Üniversitesi Eğitim Fakültesi Dergisi (Mehmet Akif Ersoy University Faculty of Education Journal)*, *1*(39), 112-124. https://doi.org/10.21764/efd.97596

Çetin, D. (2010). *İlköğretim 1. sınıf matematik programına yönelik öğretmen görüşleri [Opinions of Teachers for primary school grade 1 math curriculum]*. Yüksek lisans tezi (Postgraduate thesis), Adnan Menderes Üniversitesi (Adnan Menderes University), Turkey.

Dai, A. (2019). *İlkokul matematik dersi öğretim programında önerilen ölçme ve değerlendirme araçlarına ilişkin sınıf öğretmenlerinin görüşleri (Afyonkarahisar il örneklemi) [Opinions of classroom teachers on the measurement and evaluation tools recommended in the primary school math course curriculum (Afyonkarahisar Province sample)]*. Yüksek lisans tezi (Postgraduate thesis), Afyon Kocatepe Üniversitesi (Afyon Kocatepe University), Turkey.

Dede, S. Ç., & Arslan, S. (2019). Türkiye'de 2002-2018 yılları arasında matematik ders kitapları üzerine yapılmış tezlerin ve makalelerin analizi [Analysis of the thesis and assays made on the math course books between 2002-2018 in Turkey]. *Necatibey Faculty of Education Electronic Journal of Science and Mathematics Education (Necatibey Faculty of Education Electronic Journal of Science and Mathematics Education)*, *13*(1), 176-195. Doi: 10.17522/balikesirnef.546301

Demeuse, M., & Strauven, C. (2016). Curriculum development in education, from political decisions to application (*Y. Budak, Trans.) Pegem*.

Demirel, Ö. (2012). *Kuramdan uygulamaya eğitimde program geliştirme [Curriculum development in education from theory to application]*. (19. Baskı). PegemA yayıncılık.

Denzin, N. K., & Lincoln, Y. S. (1998). Collecting and interpreting qualitative materials. Thousand Oaks, CA: Sage.

Duru, A., & Korkmaz, H. (2010). Öğretmenlerin yeni matematik programı hakkındaki görüşleri ve program değişim sürecinde karşılaşılan zorluklar [Opinions of the teachers on the new math curriculum and the difficulties they face in the curriculum change]. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi (Hacettepe University Faculty of Education Journal)*, 38, 67-81. Retrieved from https://dergipark.org.tr/en/download/article-file/87441

Durualp, E., & Aral, N. (2010). Altı yaşındaki çocukların sosyal becerilerine oyun temelli sosyal beceri eğitiminin etkisinin incelenmesi [Evaluation of the effect of game based social skill education to the social skills of six year old children]. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi (Hacettepe University Faculty of Education Journal)*, *39*(39), 160-172. Retrieved from https://dergipark.org.tr/en/download/article-file/87465

Duyul, S., Duyul, Y., Kesman, M., & Kesman, M. (2025). Türkiye Yüzyılı Maarif Modeli Konusunda Öğretmen Görüşleri [Opinions of teachers on the Turkish Century Education Model]. *Ulusal Eğitim Dergisi (National Education Journal)*, *5*(3), 20262-20262. https://doi.org/10.5281/zenodo.15002346

English, L. D., & Watson, J. M. (2015). Statistical literacy in the elementary school: Opportunities for problem posing. In *Mathal problem posing: from research to effective practice* (pp. 241-256). New York, NY: Springer New York. https://doi.org/10.1007/978-1-4614-6258-3_11

Erdoğan, F., Hamurcu, H., & Yeşiloğlu, A. (2016). Türkiye, Singapur TIMSS 2011 sonuçlarının matematik programı açısından değerlendirilmesi [Evaluation of Turkish Singapore TIMSS 2011 results with respect to math curriculum]. *Cumhuriyet International Journal of Education (Cumhuriyet International Journal of Education)*, *5(5)*, 31-43. Retrieved from https://dergipark.org.tr/en/download/article-file/314349

Ersoy, Y. (2006). İlköğretim matematik öğretim programındaki yenilikler-I: Amaç, içerik ve kazanımlar [Innovations in the primary school math curriculum -I: Purpose, content and gains]. *İlköğretim online (Primary School online), 5*(1), 30-44. Retrieved from https://dergipark.org.tr/en/download/article-file/91060

Faiz, M., & Avcı, E. K. (2018). 4. ve 5. sınıf sosyal bilgiler ders kitapları "etkin vatandaşlık" öğrenme alanında yer alan becerilerin ve değerlerin incelenmesi [Evaluation of skills and values included in the "active citizenship" learning field of the social sciences course books of grades 4 and 5.]. *International Journal of New Approaches in Social Studies (International Journal of New Approaches in Social Studies), 2*(1), 1-21. Retrieved from https://dergipark.org.tr/en/download/article-file/503075

Felton, R. H. (1992). Early identification of children at risk for reading disabilities. *Topics in Early Childhood Special Education, 12*(2), 212-229. https://doi.org/10.1177/027112149201200206

Fırat, T., & Erdem, E. (2019). Matematik öğrenmede güçlük yaşayan ilkokul öğrencilerinin 1. ve 4.sınıftaki süreçlerine ilişkin sınıf öğretmenlerinin görüşleri [Opinions of classroom teachers on the progresses in the grade 1 and 4 of the primary school students experiencing math learning disability]. *Erzincan Üniversitesi Eğitim Fakültesi Dergisi (Erzincan University Faculty of Education Journal), 22*(1), 66-86. https://doi: 10.17556/erziefd.504004

Filiz, T. (2021). Matematik öğrenme güçlüğü yaşayan öğrencilere yönelik öğretimsel müdahalelerin öğrencilerin akademik başarılarına etkisinin incelenmesi [Opinions of educational interventions for the students experiencing math learning disability on their academic successes]. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Özel Eğitim Dergisi (Ankara University Faculty of Educational Sciences Special Education Journal), 22*(4), 1025-1055. https://doi.org/10.21565/ozelegitimdergisi.713496

Fortus, D., & Krajcik, J. (2011). Curriculum coherence and learning progressions. In *Second international handbook of science education* (pp. 783-798). Dordrecht: Springer Netherlands.

Frith, V., & Prince, R. (2006). Reflections on the role of a research task for teacher education in data handling in a Mathematical Literacy education course. *Pythagoras, 12*(1), 52-61.

Garcia, J., & Dolores, C. (2017). Intra-mathematical connections made by high school students in performing calculus tasks. *International Journal of Mathematical Education, 49*(2), 227-252.

Garris, R., Ahlers, R., & Driskell, J. E. (2017). Games, motivation, and learning: A research and practice model. In *Simulation in aviation training* (pp. 475-501). Routledge.

Gedik, H., & Açıl, F. (2020). *21. yüzyılda sosyal bilgiler için farklı okuryazarlıklara bakış [Approach to different literacies for social sciences in 21st century]*. N. E. Akhan ve S. Demirezen (Ed.), *Sosyal Bilgiler Öğretiminde Alternatif Konular* (*Alternative topics in social science education*) (137-176). Nobel Yayıncılık.

Gezgin, İ. (2020). *İlkokul 1. sınıf matematik dersi öğretim programı ve uygulanması üzerine bir inceleme [An evaluation on the primary school grade 1 math course curriculum and its application]*. Yüksek lisans tezi (Postgraduate thesis), Çukurova Üniversitesi (Çukurova University), Turkey.

Gipps, C., & Stobart, G. (2003). Alternative assessment. In *International handbook of educational evaluation* (pp. 549-575). Dordrecht: Springer Netherlands.

Glencross, M. J., & Oliver, J. (1994). An analysis of teachers' opinions of a senior primary math syllabus. *Psychological Reports, 75*(3), 1347-1353. https://doi.org/10.2466/pr0.1994.75.3.1347

Guidelines for assessment and instruction in statistics education [GAISE] (2005). A curriculum framework for PreK–12 statistics education. The American Statistical Association (ASA).

Guo, Q., Wu, D., Zhu, S., & Yang, H. H. (2025). Using a digital game to assess middle school students' information literacy: An evidence-centered game design approach. *International Journal of Human–Computer Interaction, 41*(12), 7463-7481. https://doi.org/10.1080/10447318.2024.2398910

Güneş, İ., Dursun, F., & Alcı, B. (2025). Türkiye Yüzyılı Maarif Modeli ortaokul matematik dersi öğretim programında ölçme ve değerlendirme yaklaşımının analizi [Analysis of measurement and evaluation approach in the Turkish Century Education Model medium school math course curriculum]. İstanbul Eğitim Dergisi (*Istanbul Education Journal)*, (2), 132-159. https://doi.org/10.71270/istanbulegitim.istj.1648231

Güzel, Ü., Bakır, A., & Yılmaz, S. (2023). Temel eğitimde matematik dersi öğretim programına yönelik öğretmen görüşlerinin belirlenmesi [Determination of the teachers' opinion for the math course curriculum in the basic education]. *International Academic Social Resources Journal*, 8(47), 2355-2364.

http://dx.doi.org/10.29228/ASRJOU RNAL.68572

Halat, E. (2007). Yeni ilköğretim matematik programı (1-5) ile ilgili sınıf öğretmenlerinin görüşleri [Opinions of classroom teachers related with the new primary school math curriculum (1-5)]. *Sosyal Bilimler Dergisi (Social Sciences Journal)*, 9(1), 63-88. Retrieved from https://www.ajindex.com/dosyalar/makale/acarindex-1423867251.pdf

Henniger, M. L. (1987). Learning math and science through play. *Childhood education*, *63*(3), 167-171. https://doi.org/10.1080/00094056.1987.10520781

Hesapçıoğlu, M. (1998). *Öğretim ilke ve yöntemleri [Education principles and methods]*. Beta Yayınları.

İşeri, A. (2019). Uluslararası PISA yeterlikleri ve Türkiye öğretim programları kazanımları [International PISA competences and Turkish curriculum gains]. *Mersin Üniversitesi Eğitim Fakültesi Dergisi (Mersin University Education Faculty Journal)*, *15*(2), 392-418. https://doi.org/10.17860/mersinefd.537194

Jenkins, J. R., & O'Connor, R. E. (2002). Early identification and intervention for young children with reading/learning disabilities. In *Identification of learning disabilities* (pp. 99-149). Routledge.

Kabakçı, Ö. F., & Totan, T. (2013). Sosyal ve duygusal öğrenme becerilerinin çok boyutlu yaşam doyumuna ve umuda etkisi [The effect of the social and emotional learning skills on the multidimensional life satisfaction and hope]. *Kuramsal Eğitimbilim Dergisi (Theoretical Pedagogy Journal)*, *6*(1), 40-61.

Kablan, Z., Baran, T., & Hazer, Ö. (2013). İlköğretim matematik 6-8 öğretim programında hedeflenen davranışların bilişsel süreçler açısından incelenmesi [Evaluation of the behaviors aimed in the primary school math 6-8 curriculums with respect to cognitive processes]. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi* [*(Ahi Evran University Kırşehir Education Faculty Journal (KEFAD)*], *14*(1), 347-366. Retrieved from https://dergipark.org.tr/en/download/article-file/1490671

Kaçar, H. (2018). *İlkokul öğrencilerinin matematik öğrenme güçlüğünün sınıf öğretmenlerinin gözlem ve deneyimlerine göre incelenmesi [Assessment of the math learning disability of the primary school students per the observations and experiences of the class teachers]*. Yüksek lisans tezi (Postgraduate thesis), Necmettin Erbakan Üniversitesi (Necmettin Erbakan University), Turkey.

Kaiser, G., & Willander, T. (2005). Development of mathematical literacy: Results of an empirical study. *Teaching mathematics and its applications*, *24*(2-3), 48-60. Retrieved from https://doi.org/10.1093/teamat/hri016

Karaduman, G. B. (2010). Üstün yetenekli öğrenciler için uygulanan farklılaştırılmış matematik eğitim programları [Differentiated math education curriculums applied for gifted students]. *HAYEF Journal of Education*, *7*(1), 1-12.

Katz, L. G. (1993). Dispositions: Definitions and implications for early childhood practices. Perspectives from ERIC/EECE: A Monograph Series, No. 4.

Kember, D., & McNaught, C. (2007). *Enhancing university teaching: Lessons from research into award-winning teachers*. Routledge. https://doi.org/10.4324/9780203962947

Kılınç, M. B., & Anılan, H. (2019). Birinci sınıf öğretmenlerinin birinci sınıf matematik dersi öğretim programına ilişkin görüşlerinin incelenmesi [Evaluation of the opinions of the first grade classroom teachers on the first grade math course curriculum]. *Eskişehir Osmangazi Üniversitesi Sosyal Bilimler Dergisi (Eskisehir Osmangazi University Social Sciences Journal)*, *20*, 1033-1061. https://doi.org/10.17494/ogusbd.555117

Kılınç, Ş. (2025). İlköğretim öğrencilerinin okuryazarlık becerilerinin ölçülmesi: Sistematik inceleme [Measuring the literacy skills of the primary school students: A systematic research]. *Milli Eğitim Dergisi (National Education)*, *54*(246), 1147-1196. DOI: 10.37669/milliegitim.1593297

Klenowski, V. (2010). Curriculum evaluation: Approaches and methodologies. *International encyclopedia of education*, *1*, 335-341.

Koehler, M. S., & Grouws, D. A. (1992). *Math teaching practices and their effects*. In D. A. Grouws (Ed.), *Handbook of research on math teaching and learning: A project of the National Council of Teachers of Math*. (pp. 115-125). New York: Macmillan.

Krutetskii, V. A. (1976). *The psychology of mathal abilities in schoolchildren*. London: The University of Chicago Pres, Ltd.

Lee, J. E. (2012). Prospective elementary teachers' perceptions of real-life connections reflected in posing and

evaluating story problems. *Journal of Mathematics Teacher Education, 15*(6), 429-452. https://doi.org/10.1007/s10857-012-9220-5

Makar, K. (2016). Developing young children's emergent inferential practices in statistics. *Mathal Thinking and Learning*, *18*(1), 1-24. https://doi.org/10.1080/10986065.2016.1107820

Malhotra, V. (2006). Methods of teaching mathematics. *New Delhi, India: Crescent Publication*.

Manouchehri, A., & Goodman, T. (1998). Math curriculum reform and teachers: Understanding the connections. *The Journal of Educational Research*, *92*(1), 27-41. https://doi.org/10.1080/00220679809597573

McHugh, J. M. (2011). *Program evaluation of developmental math instruction at the community college level*. Gardner-Webb University.

McMillan, H., Myran, S., & Workman, D. (2002). Elementary teachers' classroom assessment and grading practices. *The journal of educational research*, *95*(4), 203-213. https://doi.org/10.1080/00220670209596593

Miles, M. B., & Huberman, A. M. (2016). *An expanded resource book: Qualitative data analysis* (Akbaba Altun S, Ersoy A, Trans. ed.) Pegem Akademi.

Milli Eğitim Bakanlığı [MEB] (2024a). İlkokul matematik dersi öğretim programı (1, 2, 3 ve 4. Sınıflar) [Primary school math course curriculum (grades 1, 2, 3 and 4,)]. Retrieved from https://mufredat.meb.gov.tr/

Milli Eğitim Bakanlığı [MEB] (2024b). Türkiye yüzyılı maarif modeli öğretim programları ortak metni [Common texs of the Turkish Century Education Model curriculums]. Retrieved from https://mufredat.meb.gov.tr/

Milli Eğitim Bakanlığı [MEB] (2024c). İlkokul matematik 1. sınıf ders kitabı (2. Kitap) [Primary school math grade one course book (2^{nd} book)]. Retrieved from https://tymm.meb.gov.tr/upload/kitap/matematik_1_1.pdf

Moghaddam, M. R. (2014). *Assuming city as a playgorund survey on reclaiming design of some elements in city for responding to children's need of spontaneous play activities in built environment*. (Doctoral thesis), Çankaya University, Turkey.

National Council of Teachers of Math [NCTM] (2000). Principles and Standards for School Math. Reston, VA: Author.

Obro, S. (2021). The internet and quality social studies education for sustainable development in Post-Covid-19: A review. *Jurnal Penelitian dan Pengkajian Ilmu Pendidikan: e-Saintika*, *5*(1), 15-26. https://doi.org/10.36312/e-saintika.v5i1.425

Omoniyi, M. E. (2023). Social studies education: A veritable tool for achieving value re-orientation and sustainable development in Nigeria. *International Journal of Learning and Development*, *13*(2), 59-69. https://doi.org/10.5296/ijld.v13i2.21021

Orbeyi, S. (2007). *İlköğretim matematik dersi öğretim programının öğretmen görüşlerine dayalı olarak değerlendirilmesi [Evaluation of the primary school math course curriculum depending on the opinions of the teachers]*. Yüksek lisans tezi (Postgraduate thesis), Çanakkale Onsekiz Mart Üniversitesi (Çanakkale Onsekiz Mart University), Turkey.

Ornstein, A. C., & Hunkins, F. (1993). Curriculum foundations: Principles and theory. *Boston: Allyn and Bacon*.

Ott, M., & Pozzi, F. (2012). Digital games as creativity enablers for children. *Behaviour and Information Technology, 31*(10), 1011-1019. http://dx.doi.org/10.1080/0144929X.2010.526148.

Özçelik, D. A. (2016). *Ölçme ve değerlendirme* (5. Baskı) [*Measurement and evaluation* (5th print)]. Pegem Akademi.

Özhan, M. B., Taşgın, A., & Kandırmaz, M. (2024). K12 beceriler çerçevesi: Türkiye bütüncül modeli bağlamında sosyal duygusal öğrenme becerileri [K12 skills framework: social emotional learning skills in the scope of Turkish holistic model]. *Milli Eğitim Dergisi (National Education Journal)*, *52*(1), 1027-1054. https://doi.org/10.37669/milliegitim.1308964

Özyaprak, M. (2012). *Üstün zekâlı ve yetenekli öğrencilere yönelik farklılaştırılmış matematik öğretiminin erişi, tutum ve yaratıcılığa etkisi [The effect of math education differentiated for the student with gifted intelligence and skills on the access, attitude and creativity]*. Doktora tezi (Doctorate thesis), İstanbul Üniversitesi (İstanbul University), Turkey.

Patton, M. Q. (1987). *How to use qualitative methods in evaluation*. Newbury Park, CA: Sage.

Perkins, D. N. (1994). *The intelligent eye: Learning to think by looking at art* (Vol. 4). Getty Publications.

Piaget, J., & Cook, M. (1952). *The origins of intelligence in children* (Vol. 8, No. 5, pp. 18-1952). New York: International universities press.

Prensky, M. (2008). Students as designers and creators of educational computer games: Who else?. *British Journal of Educational Technology, 39*(6), 1004-1019. https://doi.org/10.1111/j.1467-8535.2008.00823_2.x

Reçber, H. (2012). *Türkiye 8. sınıf matematik ders kitabındaki etkinliklerin bilişsel düzeylerinin programdakilerle ve ülkeler arası karşılaştırılması [Comparison of the cognitive levels of the activities in the 8th grade math course book in Turkey with the ones in the curriculum and internationally]*. Yüksek lisans tezi (Postgraduate thesis), Ankara Üniversitesi (Ankara University), Turkey.

Reddy, P., Sharma, B., & Chaudhary, K. (2020). Digital literacy: A review of literature. *International Journal of Technoethics, 11*(2), 65-94. DOI: 10.4018/IJT.20200701.oa1

Renzulli, J. S., & Reis, S. M. (1985). *The schoolwide enrichment model: A comprehensive plan for educational excellence*. Creative Learning Press.

Rogayan, Jr. D. V., & Villanueva, E. E. N. (2019). Implementation status of K12 social studies program in Philippine public schools. *PEOPLE: International Journal of Social Sciences*, *5*(3), 233-250. https://dx.doi.org/10.20319/pijss.2019.53.233250

Russell, B. (1981). *Education and social order*. (Trans. Nail Bezel). Varlık Yayınları.

Sargın, S. (2016). *Yenilenen ortaokul matematik dersi öğretim programına yönelik öğretmen görüşleri [Opinions of teachers for the renewed secondary school math course curriculum]*. Yüksek lisans tezi (Postgraduate Thesis), Necmettin Erbakan Üniversitesi (Necmettin Erbakan University), Turkey.

Schlesinger, J., Persky, A., & Learning Community F. (2015). Bloom's taxonomy in action. *MedEdPORTAL, 11*, 10031. https://doi.org/10.15766/mep_2374-8265.10031

Scott, D. (2018). Knowledge and the curriculum. In *Creating Curricula: Aims, Knowledge and Control* (pp. 25-39). Routledge.

Seale, C. (2002). Quality issues in qualitative inquiry. *Qualitative social work, 1*(1), 97-110. https://doi.org/10.1177/14733250020010010

Sevim, K. (2019). *Veri işleme öğrenme alanının ortaokul matematik ders kitaplarında işlenişinin öğretim programı açısından değerlendirilmesi [Evaluation of the data processing field in the teaching in the secondary school math course books with respect to the curriculum]*. Yüksek lisans tezi (Postgraduate Thesis), Marmara Üniversitesi (Marmara University), Turkey.

Sezer, B. B., & Dedeoğlu, H. (2024). Maarif Modeli ilkokul öğretim programında okuryazarlık becerileri: Finansal, görsel ve eleştirel [Literacy skills in the Education Model primary school curriculum]. *TEBD, 22*(3), 2007-2027. https://doi.org/10.37217/tebd.1511168

Sheffield, L. J. (1994). *The development of gifted and talented mathematics students and the national council of teachers of mathematics standards*. Storrs CT: National Research Center on the Gifted and Talented.

Sisk, D. (1987). *Creative teaching of the gifted*. New York: McGraw-Hill Book Company.

Sosniak, L. A., Ethington, C. A., & Varelas, M. (1991). Teaching math without a coherent point of view: Findings from the IEA Second International Math Study. *J. Curriculum Studies, 23*(2), 119-131. https://doi.org/10.1080/0022027910230202

Sowell, E., & Zambo, R. (1997). Alignment between standards and practices in math education: Experiences in Arizona. *Journal of Curriculum and Supervision*, *12*(4), 344.

Şahin, M. (2025). 2015, 2018 ve 2024 İlkokul matematik öğretim programlarının karşılaştırmalı analizi [Comparative analysis of the 2015, 2018 and 2024 primary school math curriculums]. *Ondokuz Mayıs Üniversitesi Eğitim Fakültesi Dergisi (Ondokuz Mayıs University Faculty of Education Journal), 44*(1), 71-144. https://doi.org/10.7822/omuefd.1594613

Tartan, Y. Ş., & Erşen, Z. B. (2024). Ortaokul matematik ders kitaplarındaki etkinliklerin matematiksel ilişkilendirme becerisi açısından incelenmesi [Evaluation of the activities in the secondary school math course books with respect to the association skill]. *Fırat Üniversitesi Sosyal Bilimler Dergisi (Fırat University Social Sciences Journal), 34*(2), 677-689. DOI: 10.18069/firatsbed.1299586

Temli-Durmuş, Y., & Yusufoğlu, S. (2016). İlkokul 4. sınıf matematik öğretim programına yönelik öğretmen

görüşleri (Siirt Kurtalan ilçesi örneği) [Teachers' opinions on the primary school grade 4 math curriculum (Siirt Kurtalan District example)]. *Electronic Turkish Studies*, *11*(14), 685-704. DOI: 10.7827/TurkishStudies.9855

Thornton, H. (2006). Dispositions in action: Do dispositions make a difference in practice?. *Teacher Education Quarterly*, *33*(2), 53-68. Retrieved from https://www.jstor.org/stable/23478934

Topal, B. (2024). *İlkokullarda özel öğrenme güçlüğü olan öğrencilere destek eğitim veren öğretmenlerin matematik öğretimine ilişkin görüş ve önerileri [Opinions and suggestions of the teachers providing support education to the students with special learning disability in the primary schools about math education]*. Yüksek lisans tezi (Postgraduate thesis), Ordu Üniversitesi (Ordu University), Turkey.

Toptaş, V. (2010). İlköğretim matematik dersi (1-5) öğretim programındaki becerilerle ilgili sınıf öğretmenlerinin görüşleri [Classroom teachers' opinions about skills in the primary school math course (1-5) curriculum)]. *Millî Eğitim Dergisi (National Education Journal), 40*(188), 296-310.

Trends in International Math and Science Study [TIMSS] (2023). Turkey 2023 report. Millî Eğitim Bakanlığı Yayınları.

Turan, A., & Tabak, S. (2021). Sınıf öğretmenlerinin ilkokul 4.sınıf matematik dersi öğretim programına (2018) yönelik görüşleri: Bir karma yöntem çalışması [Opinions of the classroom teachers on the primary school math course curriculum (2018): A mixed method study]. *Millî Eğitim (National Education)*, 50(229), 463-491. https://doi.org/10.37669/milliegitim.659479

Tutak, T., & Güder, Y. (2012). İlköğretim 5. sınıf öğretmenlerinin matematik ders kitabı hakkındaki görüş ve düşünceleri [The opinions and thoughts of the primary school 5th grade class teachers on the math course book]. *Dicle Üniversitesi Ziya Gökalp Eğitim Fakültesi Dergisi (Dicle University Ziya Gökalp Education Faculty Journal)*, 19, 16-28. Retrieved from https://dergipark.org.tr/en/download/article-file/786958

Tüysüz, N., & Ekici, G. (2022). Matematik ders kitaplarının değerlendirilmesi: 7. ve 8.sınıf örneği [Evaluation of mathematics textbooks: 7. and 8.an example of a class]. Muş Alparslan Üniversitesi Eğitim Fakültesi Dergisi (*MAUN Journal of Education), 2*(2), 322-347. Retrieved from https://dergipark.org.tr/en/download/article-file/2437486

Tyson, H., & Woodward, A. (1989). Why students aren't learning very much from textbooks. *Educational Leadership, 47*(3), 14-17.

Uğurel, I., & Moralı, S. (2008). Matematik ve oyun etkileşimi [Math and game interaction]. *Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi (Gazi University Gazi Education Faculty Journal)*, *28*(3), 75-98. Retrieved from https://dergipark.org.tr/en/download/article-file/77106

Ulusoy, Ç. A., Saygı, E., & Umay, A. (2017). İlköğretim matematik öğretmenlerinin zeka oyunları dersi ile ilgili görüşleri [Opinions of the primary school math teachers on the intelligence games course]. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi (Hacettepe University Faculty of Education Journal)*, *32*(2), 280-294. Doi: 10.16986/HUJE.2016018494

Uşun, S. (2012). *Eğitimde program değerlendirme: Süreçler yaklaşımlar ve modeller* [*Curriculum evaluation in education: Processes, approaches, and models*]. Anı Yayıncılık.

Ülçay, O. (2024). Türkiye Yüzyılı Maarif Modeli değerlendirmesi [Evaluation of Turkish Century Education Model]. *Ulusal Eğitim Toplum ve Dünya Dergisi (National Education Society and Earth Periodical)*, *1*(2), 70-75. https://doi.org/10.5281/zenodo.11097248

Ünişen, A., & Kaya, E. (2015). Fen bilimleri dersinin ilkokul üçüncü sınıf programına alınmasıyla ilgili öğretmen görüşlerinin değerlendirilmesi [Evaluation of the teachers' opinion on taking sciences course to the primary school third grade curriculum]. *Adıyaman Üniversitesi Sosyal Bilimler Enstitüsü Dergisi (Adiyaman University Journal of the Institute of Social Sciences)*, (20), 546-571. https://doi.org/10.14520/adyusbd.62061

Varış, F. (1996). *Eğitimde program geliştirme teoriler, teknikler [Curriculum development in education, theories, techniques]*. İstanbul: Alkım Kitabevi.

Walsh, T. (2016). 100 years of primary curriculum development and implementation in Ireland: A tale of a swinging pendulum. *Irish Educational Studies*, *35*(1), 1-16. https://doi.org/10.1080/03323315.2016.1147975

Wilson, R. J. (1990). Classroom processes in evaluating student achievement. *Alberta Journal of Educational Research*, 36, 4–17.

Woodward, A., & Elliott, D. L. (1990). Textbooks: Consensus and controversy. *Teachers College Record*, *91*(5), 146-161. https://doi.org/10.1177/016146819009100512

Yalçın, D. (2017). 2015 *İlkokul 1-4. matematik öğretim programının geometri öğrenme alanı kazanımlarının öğretmen görüşlerine göre incelenmesi [Evaluation of the geometry learning field gains of the primary school 1-4 math curriculums per the opinions of the teachers]*. Yüksek lisans tezi (Postgraduate thesis), Uşak Üniversitesi (Uşak University), Turkey.

Yıldırım, A., & Şimşek, H. (2018). *Sosyal bilimlerde nitel araştırma yöntemleri [Qualitative research methods in social sciences]*. (8. Baskı). Seçkin Yayıncılık.

Yin, R. K. (2017). *Case study research applications* (I. Gunbayi, Trans.). Nobel Akademik Yayıncılık.

Yun-peng, M., Chi-chung, L., & Ngai-ying, W. (2006). Chinese primary school math teachers working in a centralised curriculum system: A case study of two primary schools in North-East China. *Compare: A Journal of Comparative and International Education*, *36*(2), 197-212. https://doi.org/10.1080/03057920600741206

Zhang, Z., & Burry-Stock, J. A. (2003). Classroom assessment practices and teachers' self-perceived assessment skills. *Applied measurement in education*, *16*(4), 323-342. https://doi.org/10.1207/S15324818AME1604_4