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# THE SYSTEMATIC REVIEW OF POSTGRADUATE THESES ON MONTESSORI EDUCATION WRITTEN BETWEEN 2000-2021 IN TURKEY

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#### **Abstract**

The aim of this study is to examine postgraduate theses written on the Montessori Method between 2000-2021 Turkey. We employed a systematic review method in the research design and content analysis for analyzing data. Data for the current study includes the postgraduate theses written on Montessori method between 2000-2021 in Turkey, which is open to access at the Council of Higher Education Thesis Center. Fifty-two postgraduate theses in total were retrieved according to the criteria. We see that more studies on Montessori education in Turkey has been conducted after 2005. The results of our study demonstrate that the highest number of Monstessori studies have been conducted at Selçuk University. We found that researchers primarily studied the effect of Montessori education on the development of various skills such as self care, literacy, social skills and experimental and survey designs were used most commonly. Finally, our examination revealed that researchers

Cebeci, N., Arık, A., Canaslan, H., and Fazlıoğlu, Y. (2022). **The systematic review of postgraduate theses on montessori education written between 2000-2021 in Turkey**, *International Journal of Quality in Education generally studied children between the ages of four and six without identified disabilities revealing an area needing additional focus*.

Key words: early childhood, Montessori Method, special education, systematic review

#### Introduction

Maria Montessori lived between 1870-1952 and known as the first female doctor, professor of anthropology, active women's rights advocate and pedagogue. She is the founder of schooling system, which has spread all over the world (Biswas-Diener, 2011). Dr. Maria Montessori first designed her Pedagogical approach, while she was working with the students with special needs at Rome University, Psychiatry Department. Although her students were diagnosed with mental disability and learning disability, after trained under the Montessori system these students succeeded in the standardized exams of state schools within the following (International Montessori Index, 2006; as cited in Holfester, 2019). After this result, she concluded that her pedagogical approach could also be applicable to typically Developed children as well and she decided to carry out this project (Seldin, 2002; Asher, 2010; as cited in Danişman, 2012). As she was determined that the best method of treatment is not medical but pedagogical, she directed her attention towards education theory and methodology (Kornfeld, 2020). In 1907, she opened the first "Casa de Bambini" (Children's House), bringing some of the educational materials she had developed at the Orthophrenic School. This school was the place where the initial steps of Montessori Method were taken. She did not regard herself as a specialist or authority for she was not educated as a teacher, so her approach to educational issues was from her medical science viewpoint. In addition, she was influenced by the educationalist such as J.J Rousseau, Pestalozzi, Frobel, Jean Itard and Edourd Sequin. Maria Montessori observed children intently and during her observations, she kept notes in detail to describe their inventions and activities. At Children's House, she worked to test her experiences of her observations and hypothesis (Bloom, 2004; Montessori, 2016; Schilling, 2011).

Montessori education is a sensory-oriented pedagogy based on the idea that children learn best at their own pace by manipulating the objects (Lopata et al., 2005).

Cebeci, N., Arık, A., Canaslan, H., and Fazlıoğlu, Y. (2022). The systematic review of postgraduate theses on montessori education written between 2000-2021 in Turkey, *International Journal of Quality in Education*Montessori Approach concretizes the children's attitudes towards life during their developmental period (Lawrence, 1998).

Montessori Method is a contemporary educational model which has been used widely all around the world (Kayılı & Gönen, 2018; Yiğit & Kabadayı, 2020). The reason of this are; presenting a qualified educational program for children, being child-centered and supporting their development with a holistic view, supplying an arranged environment which enables a learning to learn atmosphere and facilitates independence, concentrating the early childhood education, centralizing the individualized learning and including family involvement (Aral et al., 2015; Kayılı, 2016; Kayılı & Gönen, 2018; Morrison, 1998; as cited in Bozkurt et al., 2018).

The aims of Montessori Method are improving children's skills such as self-confidence, initiative, knowing what they want and applying it, acting independently, solving problems, analyzing critically, using creativity skills, concentration, being organized, helping each other, and respecting others. To achieve these aims, the first step is to enable children to experience and desire learning, and the second step is to help them to perfect their learning mechanisms (Özdağ, 2014). One of the differences of Montessori Method among other methods is the prepared environment. Prepared environment of Montessori is designed entirely for children's needs and interests. This child centered setting is an educational environment in which children are assessed individually with the focus on process, and it provides children with opportunity to develop at their own pace. The educational environment is prepared to facilitate students' self-regulation (Korkmaz, 2006).

Basic principles of Montessori Method can be sorted as absorbent mind, sensitive periods in development, the importance of repetition, the necessity of a preprepared environment, a sense of freedom that directs the child to internal discipline, concentration of attention, enthusiasm and joy of working, and development of the child as a social being. Montessori Method is child-centered and the role of the teacher is a guiding adult role in the service of the child and helping the child when they need it (Arslan, 2008).

Montessori's principles and understanding of education exactly coincide with today's understanding of education (Arslan, 2008). Montessori child education model is implemented as an alternative education model around the world and in Turkey since the 2000s. As for Turkey, Montessori Method is practiced in some university

Cebeci, N., Arık, A., Canaslan, H., and Fazlıoğlu, Y. (2022). The systematic review of postgraduate theses on montessori education written between 2000-2021 in Turkey, *International Journal of Quality in Education* application kindergartens, some pre-schools affiliated to the Ministry of Education as pilot applications and private pre-school educational institutions. As a result of this increasing interest in Montessori method around the world as well as Turkey, academic research on the method has also increased (Kayılı, 2016). The systematic review of postgraduate theses on Montessori Method in Turkey is important, because this examination would present a path to the researchers who would like to conduct studies about this method and provide an insight about possible gaps in the field.

Consequently, an examination of the postgraduate theses on Montessori method written between 2000-2021 in Turkey is aimed in this paper.

In this research, answers are sought for the following sub-questions:

- 1. What is the distribution of the accessible postgraduate theses on Montessori method written in Turkey?
- 2. What is the distribution of the accessible postgraduate theses on Montessori method written in Turkey according to years?
- 3. What is the distribution of the universities conducted postgraduate theses on Montessori Method written in Turkey?
- 4. What is the distribution of the research topics conducted postgraduate theses on Montessori Method written in Turkey?
- 5. What is the distribution of the research designs of the postgraduate theses on Montessori Method written in Turkey?
- 6. What is the distribution of the sampling methods of the postgraduate theses on Montessori Method written in Turkey?
- 7. What is the distribution of the age range of the study groups of the postgraduate theses on Montessori Method written in Turkey?
- 8. What is the distribution of the data collection tools for the postgraduate theses on Montessori Method written in Turkey?

#### Method

#### **Research Design**

A systematic review of the postgraduate theses on Montessori Method written between 2000-2021 in Turkey is conducted. The aim is to present a general frame to the researchers who would potentially carry out studies on similar topics. Systematic review studies are a method of mapping which requires to understand and find meaning out of Cebeci, N., Arık, A., Canaslan, H., and Fazlıoğlu, Y. (2022). The systematic review of postgraduate theses on montessori education written between 2000-2021 in Turkey, *International Journal of Quality in Education* large bodies of knowledge and identify the niche that is not established nor defined and needed to be examined (Petticrew & Roberts, 2006). This current study is conducted to find answers to predetermined questions through a detailed, reproducible, and systematic procedure which involves analyzing and synthesizing the data (Littell et al., 2008; Egger, 2015).

# **Study Group**

Data for the current study includes the postgraduate theses written on Montessori method between 2000-2021 in Turkey, which is open to access at the Council of Higher Education Thesis Center. Fifty-two postgraduate theses in total were retrieved according to the criteria. The data derived from the study group was analyzed through a thesis review form adapted through the examination of relevant literature (Bolat & Tekin, 2017). Table 1 presents the category and percentage of the postgraduate theses

Table 1 The distribution of the postgraduate theses written on Montessori method between 2000-2021 in Turkey

| Types of the Theses | f  | %     |
|---------------------|----|-------|
| Master Arts Theses  | 47 | 90,38 |
| PhD Theses          | 5  | 9,62  |
| Total               | 52 | 100   |

As can be seen in Table 1, 47 MA Theses were written on Montessori Method between 2000-2021 in Turkey and they form the 90.38% of the study group. There are only 5 PhD Theses written between the given dates and they form the 9.62% of the study group.

# **Data Analysis**

"Content Analysis" method is used to analyze data acquired through Systematic review method. Content analysis is a method that has phases such as defining the terms about the subject that is studied, determining the unit of analysis, identifying the sections of the data, constructing a structure according to the data, categorizing, counting, interpreting and concluding (Büyüköztürk et al., 2016).

The first phase of this study includes identifying the theses and which were about Montessori Method from the Council of Higher Education Thesis Center website, then downloading, and dividing them among the researchers. The second phase Cebeci, N., Arık, A., Canaslan, H., and Fazlıoğlu, Y. (2022). The systematic review of postgraduate theses on montessori education written between 2000-2021 in Turkey, *International Journal of Quality in Education* included the examination of the study group according to the criteria indicated in the thesis review form. The third phase included combining and analyzing the data provided by the researchers and this involved exploring and coding specific themes and patterns.

The thesis review form used to collect and categorize data from the study group includes four main sections. The first section contains general information about the theses such as the title, year and the author's name. The second section includes the research design of the thesis and the third section includes information about the sample of the study which has third subparts such as; sampling method and the features of the sample. The last section is about data gathering, and it has two parts; data collection tool and data analysis method.

The patterns and codes derived from the data were presented to an expert to facilitate validity and the analyzing phase started after the agreement. This phase repeated twice; each researcher analysed the data individually and collected it in one place. The second analysis was conducted to facilitate credibility, and this time randomly selected study group units were distributed between the researchers, and the results of the first analysis was compared with the second analysis, and their consistency was checked.

### **Findings**

The results of the analysis of the postgraduate theses written between 2000-2021 in Turkey on this alternative education method are presented in this section. Furthermore, the results are evaluated according to the aim of the study. The distribution of the postgraduate theses by years is presented in Table 2.

Table 2 indicates that two of the master theses have limited access status on the website of the Council of Higher Education Thesis Center between the dates the research conducted. The data also reveals that there are not any postgraduate theses written on Montessori approach between years 2000-2004 and 2006-2007.

Table 2 The distribution of postgraduate theses written on Montessori method in Turkey by years

|           | I          | Master Thesis |    |            | Dissertations |    |
|-----------|------------|---------------|----|------------|---------------|----|
| Years     | f          |               | f  |            |               |    |
|           | Accessible | Limited       | %  | Accessible | Limited       | %  |
| 2000-2004 | 0          | 0             | 0  | 0          | 0             | 0  |
| 2005      | 2          | 0             | 4  | 0          | 0             | 0  |
| 2006-2007 | 0          | 0             | 0  | 0          | 0             | 0  |
| 2008      | 2          | 0             | 4  | 0          | 0             | 0  |
| 2009      | 1          | 0             | 2  | 0          | 0             | 0  |
| 2010      | 1          | 0             | 2  | 1          | 0             | 2  |
| 2011      | 0          | 0             | 0  | 1          | 0             | 2  |
| 2012      | 1          | 0             | 2  | 0          | 0             | 0  |
| 2014      | 2          | 0             | 4  | 0          | 0             | 0  |
| 2015      | 5          | 0             | 10 | 1          | 0             | 2  |
| 2016      | 2          | 0             | 4  | 0          | 0             | 0  |
| 2017      | 2          | 0             | 4  | 0          | 0             | 0  |
| 2018      | 8          | 2             | 16 | 1          | 0             | 2  |
| 2019      | 14         | 0             | 28 | 1          | 0             | 2  |
| 2020      | 5          | 0             | 10 | 0          | 0             | 0  |
| Total     | 45         | 2             | 90 | 5          | 0             | 10 |

Table 2 clearly displays that 54% of the postgraduate theses on Montessori approach conducted in the last three years (2018-2020), which is more than half of the studies. In the year with the highest number of research on Montessori Method, which is 2019 (30%), most of the studies were conducted as MA theses (28%). Most of the research conducted on Montessori Method is MA theses (90%) and only 10% of them are PhD theses.

The distribution of the universities conducted postgraduate theses on Montessori Method are presented in Table 3.

Table 3 The distribution of the universities conducted postgraduate theses on Montessori Method

| Universities                       | f  | %      |
|------------------------------------|----|--------|
| Selçuk University                  | 10 | 19,23  |
| Necmettin Erbakan University       | 6  | 11,54  |
| Marmara University                 | 4  | 7,69   |
| Bolu Abant İzzet Baysal University | 2  | 3,85   |
| Bursa Uludağ University            | 2  | 3,85   |
| Gazi University                    | 2  | 3,85   |
| Yeditepe University                | 2  | 3,85   |
| *Other                             | 24 | 46,15  |
| Total                              | 52 | 100,00 |

\*Universities that conducted only one study on Montessori Method between 2000-2020: Adnan Menderes University, Ankara University, Bahçeşehir University, Başkent University, Burdur Mehmet Akif Ersoy University, Çağ University, Çukurova University, Erzincan Binali Yıldırım University, Fatih University, Fırat University, İstanbul Aydın University, İstanbul Okan University, İstanbul Sebahattın Zaim University, Karabük University, Karadeniz Teknik University, Kastamonu University, Kırklareli University, Mimar Sinan Güzel Sanatlar University, On dokuz Mayıs University, Ortadoğu Teknik University, Ufuk University, Üsküdar University, Yıldız Teknik University, Zonguldak Karaelmas University

The distribution of the universities which conducted postgraduate theses on Montessori Method in this two decade period is presented in Table 3. It is clearly seen that Selçuk University is the university that conducted the highest number of studies (19,23%). Necmettin Erbakan University is the second university that conducted most of the studies on this subject (11,54%), and lastly Marmara University is the third university with the high rates of research on this method (%7,69).

Distribution of the research topics conducted postgraduate theses on Montessori Method in Turkey is presented in Table 4.

Table 4 The distribution of the research topics of postgraduate theses on Montessori

Method in Turkey

| Research Topics                        | f  | %      |
|--|----|--------|
| Skill Development                      | 12 | 17,14  |
| *Effect on main course                 | 5  | 7,14   |
| Value Education                        | 4  | 5,71   |
| **Comparison of the Methods or Systems | 4  | 5,71   |
| Concept Acquisition                    | 4  | 5,71   |
| Creativity                             | 4  | 5,71   |
| School Readiness                       | 3  | 4,29   |
| Problem Solving                        | 3  | 4,29   |
| Perspective of Parents                 | 2  | 2,86   |
| Disability                             | 2  | 2,86   |
| Space                                  | 2  | 2,86   |
| Furniture                              | 2  | 2,86   |
| ***Other                               | 23 | 32,86  |
| Total                                  | 70 | 100,00 |

<sup>\*</sup> Three studies on the effect of Montessori Method on Mathematics course, one study on the effect Montessori Method on visual arts course and one study on the effect Montessori Method on science course

Table 4 reveals that the most preferable research topics were on the effect of Montessori Method on skill development (17,14%), the relationship between Montessori method and main course (7,14%), Value Education (5,71%), Comparison of the Methods or Systems (5,71%), Concept Acquisition (5,71%), Creativity (5,71%) respectively.

<sup>\*\*</sup>Two studies on the comparison of Montessori Method and STEM methods, one study on comparison of Montessori Method and Islamic Education System.

<sup>\*\*\*</sup> This Category includes topics studied only once: peer relations, examination of accreditation standards, dietetics, effect of Montessori Method on scientific research skills, cognitive development, integration, educational philosophy, critical thinking, visual perception, Montessori materials, Structural and operational construct of Montessori preschools, Play behavior, Teacher candidates and Montessori Method, Teacher remarks, Teacher attitudes, Organizational trust, self-regulation, Problem Behavior, Psychological resilience, Mathematical intuition skills, Classroom Management, Social dissatisfaction levels, Socialization, Loneliness.

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The distribution of the research designs of the postgraduate theses on Montessori Method in Turkey is presented in Table 5.

Table 5 The distribution of the research designs of the postgraduate theses on Montessori Method in Turkey

| Research Designs | f  | %      |
|------------------|----|--------|
| Experimental     | 20 | 38,46  |
| Survey           | 13 | 25,00  |
| Descriptive      | 4  | 7,69   |
| Mixed            | 4  | 7,69   |
| *Unstated        | 3  | 5,77   |
| Phenomenological | 3  | 5,77   |
| Case Study       | 2  | 3,85   |
| Content Analysis | 1  | 1,92   |
| Comparison       | 1  | 1,92   |
| Correlational    | 1  | 1,92   |
| Total            | 52 | 100,00 |

<sup>\*</sup> In three of the thesis research design is not presented.

Table 5 shows that experimental research has the first place among all the research on Montessori method (38,46%). It is followed by survey (25,00%). Descriptive and Mixed research share the same percentage and placed in the third rank (7,69%).

The distribution of the sampling method of the postgraduate theses on Montessori Method in Turkey is presented in Table 6.

Table 6 The distribution of the sampling method of the postgraduate theses on Montessori Method in Turkey

| Sampling Method | f  | %      |
|-----------------|----|--------|
| Purposive       | 16 | 30,19  |
| Unstated        | 12 | 22,64  |
| Simple Random   | 10 | 18,87  |
| Convenience     | 8  | 15,09  |
| Homogeneous     | 3  | 5,66   |
| Snowball        | 1  | 1,89   |
| Cluster         | 1  | 1,89   |
| Unattainable    | 2  | 3,77   |
| * Total         | 53 | 100,00 |

<sup>\*</sup> Two different methods used in one research

Table 6 indicates that 30,19 % of the research conducted Purposive sampling method. Twelve postgraduate theses (22,64%) do not mention the sampling method. Ten postgraduate theses used Simple Random Sampling method (18,87%) and 8 postgraduate theses used Convenience Sampling method (15,09%)

The distribution of the age range of the study group of the postgraduate theses on Montessori Method in Turkey is presented in Table 7.

Table 7 The distribution of the age range of the study group of the postgraduate theses on Montessori Method in Turkey

| Age Group    | f  | %      |
|--------------|----|--------|
| 4-5          | 6  | 16,67  |
| 5 – 6        | 6  | 16,67  |
| 3 – 6        | 4  | 11,11  |
| 4 - 6        | 3  | 8,33   |
| 5            | 3  | 8,33   |
| 2-6          | 1  | 2,78   |
| 3 – 5        | 1  | 2,78   |
| 3,8-5,5      | 1  | 2,78   |
| 4 - 5,5      | 1  | 2,78   |
| 6            | 1  | 2,78   |
| Unstated     | 8  | 22,22  |
| Unattainable | 1  | 2,78   |
| Total        | 36 | 100,00 |

Table 8 demonstrates that the researchers mostly conducted studies on children aged between 4-5 (16,67%) and 5-6 (16,67%). (22,22%) of the studies do not clarify the age group and one of the studies (2,78%) does not include children. The distribution of the data collection tools used to gather data for the postgraduate theses on Montessori Method in Turkey is presented in Table 8.

Table 8 The distribution of the data collection tools of the postgraduate theses on Montessori Method in Turkey

| Data Collection Tools        | F  | %      |
|------------------------------|----|--------|
| Scale                        | 25 | 54,34  |
| Demographic Information Form | 19 | 41,3   |
| Interview Form               | 14 | 30,43  |
| Test                         | 14 | 30,43  |
| Observation Form             | 4  | 8,69   |
| Survey                       | 3  | 6,52   |
| *Others                      | 7  | 15,21  |
| Total                        | 46 | 100,00 |

Manual Dexterity Control List, Early Mathematical Skills, Early Mathematical Reasoning Skills Assessment Tool, Form of Geometrical Figure Comprehension, Acquisition Evaluation Form, Study Sheet named as "Mathematical Skills; addition, substruction, shapes, scales, tine and money", Teacher Diary, Checklist of Basic Skills for School

Examination of table 8 shows that there is a large variety of data collection tools used for Montessori research in Turkey. Among those tools, Scales has the highest frequency of use (54,34%). They are followed by Demographic Information Forms (41,3%) and Interview Forms and Tests (30,43%).

# **Discussion and Implications**

This research consists of postgraduate theses carried out within the last 20 years in Turkey on the subject of Montessori Method. Postgraduate theses are regarded as qualified reports with high validity for universal syntheses, and they require the researcher to have deep knowledge about the field (Donnelly, 2017; Pare, 2019). The theses of the researchers indicate a paradigm shift in the discipline (Zeng & Samantha, 2012). Therefore, review of postgraduate theses on Montessori Method is thought to be worthwhile for the researchers who are interested. With this respect, 52 graduate theses have been studied in total of which 47 were MA and 5 were PhD theses. The distribution of these theses by the years indicates that research on Montessori applications and philosophy by Turkish universities has started to increase recently. It has shown becoming widespread since 2005, and the number of postgraduate studies has increased especially in the last three years (2018-2020). The interest on the Montessori Method is flourishing in Turkey as in the world. In a similar study, Taştepe

et al., (2015) stated that the research based on the Montessori method has increased after 2005, and most of the publications were made in 2012 (22.6%). Kayılı (2016), having examined the research between the years 2000-2016 concerning the Montessori Method, stated that the highest number of postgraduate theses was in 2015 (35,7%), equal number of PhD theses were published in 2010 (33,3%), 2011 (33,3%), 2015 (33,3%), most of the articles were published in 2012 (23,3%). Bagby et al. (2014), in their compilation study examining the Montessori studies, emphasized that while there were 54 theses between the years 1996–2006 and 37 theses between 2007–2009, respectively, there was a significant increase between 2010–2013 with 83 articles, and emphasized the fact that the interest towards Montessori has increased in the United States of America. They have pointed that almost half of the 83 articles were about education, the rest of it related to different disciplines and the most remarkable one was shown as the research on the effect of Montessori method on the people with dementia. Similar amounts were published in the official site of American Montessori Society community. Furthermore, American-based and international studies about Montessori between 2014–2017 were identified as 88 articles (American Montessori Society, 2018). The findings of the current study support these studies and indicates a rising awareness towards Montessori Method.

According to the findings, the distribution of the postgraduate theses based on Montessori Method by the universities indicates that the highest number of theses belongs to Selçuk University (19%), Necmettin Erbakan University (11,54%) Marmara University (7,69%). In a similar study, Taştepe, et.al (2015) stated that the number of universities studying Montessori Method was limited and indicated that when the distribution is considered Gazi University and Selçuk University were the first (23,5%), Marmara University the second (17,6%) and Adnan Menderes University was the third (11,8%) universities. Kayılı (2016), in his study of postgraduate theses on the Montessori Method found that Selçuk University with (41,1%) lead the studies, Gazi University shared the same percentage with Marmara University (11,7%) and had the second highest research rank. Selçuk University includes a Montessori Education Center and a kindergarten where the Montessori Method has been applied since the 2006–2007 academic year (Kayılı, 2016). The reason of the intense number of the theses carried out by Selçuk University can be explained with physical opportunities it provides. Moreover, findings of the current study shows that Necmettin Erbakan

Cebeci, N., Arık, A., Canaslan, H., and Fazlıoğlu, Y. (2022). The systematic review of postgraduate theses on montessori education written between 2000-2021 in Turkey, *International Journal of Quality in Education*University (12%) followed Selçuk University (19%) being ranked second; both universities being in the same city, it can be interpreted as enabling researchers closely to follow the developments in the field of Montessori and has a motivational effect on researchers for further research.

As a result of the research, when the postgraduate theses examined according to the research topics, it was found that the researchers investigated the effect of Montessori Method on the development of various skills in Turkey. In addition, the comparison of Montessori Method with other practices, concept acquisition, values education, and the effects of creativity are also common secondary areas that researchers focus on. Azuma (1992), who examined the research on Montessori Method between 1979 and 1989 in the DIALOG database, gathered 67 book titles and studies under 5 main titles as the studies on the comparison of Montessori Method with the other methods (27), practical samples in which Montessori Method is developed and applied (18), studies on Montessori Method for disabled children (12), philosophical and theoretical studies on Montessori Method (8) and finally scientific studies on Montessori Method (2). The diversity in the study fields shows similarities with the findings of the current study whereas only two postgraduate theses (Kınık, 2008; Erben, 2005) related to disability studies are found. Hence, it can be said that Montessori Method is not preferred as a subject of the study in the field of special education in Turkey. İlhan-Ildiz and Fazlıoğlu (2020) stated that studies on Montessori Education Method and its usage areas in special education are limited in Turkey. On the other hand, Sheppard et al., (2015) stated in their study that Montessori-oriented activities are used in the care of adults with dementia and becoming widespread. Studies examining the benefits of Montessori-oriented activities on dementias were systematically evaluated and, in the event, a strong correlation was found in the benefits of Montessoribased activities on eating behavior, but they found a weak link in benefits on cognitive ability and stated that long term benefits should be examined. Awes (2012) emphasized that the intervention of children with dyslexia can be supported by Montessori Method. Pickering (1992) highlighted that Montessori Method can be applied to children with learning disability. Furthermore Eratay (2011) emphasized a decrease in the attention deficit, restlessness, crying, sulking and aggression behaviors in children with autism and hyperactive diseases depending on Montessori Method. Yıldırım-Doğru (2015) Cebeci, N., Arık, A., Canaslan, H., and Fazlıoğlu, Y. (2022). The systematic review of postgraduate theses on montessori education written between 2000-2021 in Turkey, *International Journal of Quality in Education* suggested that Montessori Method can be used with children with attention deficit and hyperactivity disorder to reduce the level of attention deficiency.

Another finding of the research suggests that experimental and survey research designs were the most favorited designs by the researchers. This shows that the effects of Montessori Method practices are commonly examined in the research in Turkey. The results of the study are alike to some studies (Baba et al., 2011; Ahi & Kıldan, 2013; Kayılı, 2016) in the literature. Ahi and Kıldan (2013) examined the postgraduate theses in the field of preschool education in Turkey and emphasized that quantitative research was preferred more commonly in the studies. Similarly, Kayılı (2016) indicated that in postgraduate theses, only 14.2% were written in qualitative research, the other 85.8% in quantitative research, and in PhD theses, of 33.3% were written in qualitative research, of 66.6% were in quantitative research. Yıldız (2004) explained the lack of qualitative research with the need to have theoretical knowledge and scientific basis in order to form the basis for qualitative research. The use of Montessori Method has been used in Turkey since 2000s, and it has been widespread in research since 2005; this might be the reason that the quantitative research method is more common than qualitative research type.

The other finding of the study was about the sampling method of the postgraduate theses written on Montessori Method, and it was found that purposive sampling was used mostly, simple random sampling was in the second rank and convenience sampling was in the third rank in the list. Yet, %23 of the total did not include information about the sampling and population. However, sampling technique plays a crucial role to exemplify the population. Kılıç Arslan (2016) emphasized that the lack in the explanation of how the sampling was organized is a reason of the lower external validity of the studies. Similar to current study, when the foreign studies on Montessori Method (Hara, 2015; Fero, 1997; Lillard & Quest, 2006) were examined in terms of sampling techniques, it was found that they did not explain the method of their studies in detail although they were rather qualified studies. These findings resemble our study.

When the studies on Montessori Method were analyzed in terms of age rank, the current study indicates that the most preferable age group was 4, 5 and 6 years. In addition, the reason why the total amount of the studies was limited is related to the Montessori schools are outnumbered in Turkey. The reason why the existing studies are mainly on

Cebeci, N., Arık, A., Canaslan, H., and Fazlıoğlu, Y. (2022). The systematic review of postgraduate theses on montessori education written between 2000-2021 in Turkey, International Journal of Quality in Education early childhood (Korkmaz, 2005; Soydan, 2013; Güleş & Erişen, 2009; Şahintürk, 2012) may be related to the self-governing status of the university kindergartens and private kindergartens whereas other education grades are supposed to adapt national education programs. In a similar study, Salı et al., (2012) examined the studies on various methods used in early childhood education and found that 12 of 25 studies were on Montessori Method. Taştepe et al., (2015) emphasized the limited number of the studies on Montessori Method in special education. In this current study, only two theses were found to have studied Montessori and disability (Erben, 2005; Kınık, 2018) and only Kınık (2018) studied 4-6 year- old -children who needed special education. Whereas foreign literature review indicates that Montessori Method is used with various age groups, in his longitudinal study Dohrmann (2003) found that 3-11 year-olds who had Montessori Method were more successful in standard tests than the ones who did not. Rathunde (2003) found a significant difference between the students' attitude who had Montessori program and who did not. The students attending to the Montessori schools were determined as more active, anxious, concerned, peaceful and stronger. Donabella & Rule (2008) studied with four 7<sup>th</sup> grade secondary school students and found that they were more successful in multiplying with Montessori Method. Although there have been studies done on various age groups, the reason why the majority of the studies are centralized on early childhood education may be Maria Montessori's own writings on early childhood rather than adult education (Rathundi & Csikszentmihalyi, 2005).

The final finding of the current study indicates that postgraduate theses vary in data collection tools. Scales, demographic information form and interview forms were most commonly used. This finding accords with the finding of the commonly used method as experimental and survey. In a similar study, Erdem (2011) found scales and questionnaires as the most common data collection tool used in the studies. Correspondingly, Bolat (2016), Kurtoğlu and Seferoğlu (2013) found questionnaires as the widespread collection data tool. Kılıç and Arslan (2016) in their meta-analyses study found that questionnaires and scales were used commonly. The current study is consistent with the similar studies done in the field.

#### Conclusion

According to the results of the research, the following may be recommended; Although the amount of postgraduate theses on Montessori application and philosophy has increased in recent years in Turkey, it is still limited to some universities in few cities. Therefore, postgraduate theses on Montessori Method are recommended to the researchers in different universities in the context of Turkey since it would be helpful for the researchers from different fields to reach more diverse subjects. When postgraduate theses related to Montessori Method were considered, the most common study was done with normally developing children aged 4, 5 and 6 years. It is recommended to conduct research with different age groups in Turkey similar to the research done in other counties. Besides, it is recommended to include Montessori Method course into the programs of the department of primary education, the department of special education and the other branches in the education faculties of the universities. Since there are very few postgraduate theses on Montessori Method in the field of special education, it is highly recommended to conduct Montessori Method research on people with special education needs or different diagnoses. Finally, organizing seminars, panels, webinars or workshops related to Montessori Method in cooperation with the universities and the Ministry of Education will provide awareness among the teacher candidates and teachers, moreover; will have positive effects on their perspective on method preference.

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