

Chapter 25

The Impact of the Montessori Approach in Supporting Children's Self-Regulation Skills*

Sema BÜYÜKTAŞKAPU SOYDAN¹, Devlet ALAKOÇ PİRİR² and Esra ERGİN³

¹ Assoc. Prof. Dr., Child Development Department of the Health Sciences High School of the Karatay University, Konya, Turkey

² Assist. Prof., Child Development Department of the Faculty of Health Sciences of the Selçuk University, Konya, Turkey

³ Graduate Student, Konya, Turkey

INTRODUCTION

Self-regulation ability is expressed as the ability to voluntarily restrict some behaviours, to activate others and the ability to focus and shift attention as needed (Blair & Razza, 2007; Liew, 2012; Smith-Donald et al., 2007). While pre-school children have difficulties complying with kindergarten class routines and rules without having self-regulation skills (Rimm-Kaufman, et al., 2009), preschool years are considered as a very important period in the development of these skills (Kochanska et al., 2000; Murphy et al., 1999; Güler Yıldız et al., 2014). For this reason, the teacher has to familiarise the children to the rules, to the routines and to the behavioural expectations of the class (such as waiting for his/her turn, raising finger, participating in structured activities). Children without this support are having difficulties in regulating their behaviour both during pre-school and during primary school transition (Degol & Bachman, 2015). This is supported by research findings that show that children are able to develop appropriate behaviour in the classroom (Blair & Razza, 2007; Howse et al., 2003; Liew et al., 2010; Valiente et al., 2011; Valiente et al., 2010) and that their self-regulation ability is effective in loving school in a positive way and achieving social adaptation (Eisenberg et al., 2001; Olson et al., 2005; Valiente et al., 2007).

However, there is a lot of studies showing that the low self-regulation ability (Blair & Razza, 2007; McClelland et al., 2007; Miles & Stipek, 2006; Normandeau & Guay, 1998; Ponitz et al., 2009) of children who are in pre-school and primary school age and who have difficulties in regulating their feelings and behaviours, is effective in children's school maturity and academic achievement (McCabe et al., 2004; Blair, 2002; McClelland, et al., 2000).

When self-regulation skills that are seen as effective in children's academic achievement can be supported by teachers in preschool period (Denham et al., 2007; McClelland & Morrison, 2003; Degol & Bachman, 2015) and when teachers

* This study was presented at the 5th International Preschool Education Congress held in Ankara, on 18-21 October 2017.

intentionally make time for self-regulation behaviours, it is proved that there are significant social and emotional benefits for children (Domitrovich et al., 2007; Webster-Stratton et al., 2008).

In the light of this information, it can be said that the awareness of pre-school teachers about self-regulation of children and the support of it, is important for the future academic achievements of children. When the relevant literature is examined, it is seen that there are many theorists' views on the skill and support of self-regulation in little children.

Albert Bandura, the forerunner of self-regulation studies, defines self-regulation as learning to think about what he/she wants to learn, regulation of motivation and as the ability to self-taught of children (Bandura, 1994). Vygotsky's theory of development states that psychological processes, such as self-regulation, are the learning context in which children are developed through interaction with adults and peers (Stetsenko & Vianna, 2009), and that self-regulation teaches children to think independently about how to solve their problems (Vygotsky, 1978). Relating to Freud's psychoanalytic theory, the development of self-regulation is described as a natural consequence of emotional impulses and needs, and self-regulation is defined as the mechanism by which an individual control the arousal level and fulfils the requirements of the real world (Bronson, 2000).

Despite that Montessori does not use the term self-regulation, his texts about internal discipline or normalization are clearly related to this concept. According to Montessori, internal discipline is the ability of children to concentrate, their effort to keep on working, to fulfil the instructions, to respect others and the environment, to live in peace and happiness (Montessori, 1995). Montessori, who moots that children develop internal discipline and peace through permanent concentration at their self-chosen jobs, has called this process as normalization (NAMTA, 2005; Montessori, 1949). According to Montessori, a normalized child is a child who is able to make self-motivated, independent decisions and has the ability to act with conscious choice, not merely from an empty curiosity (O'Donnell, 2007). Discovering the connection between freedom and self-control that he defines as the two sides of the medallion, Montessori, advocates that when working with the materials of each liberated child, their self-discipline will be developed. For this reason, he sees normalization as the way to work freely in this environment (Montessori, 1967).

As a result of an extensive literature study, it can be said that the gaining of self-regulation skills in pre-school years is influential in children's future academic achievement and based on theoretical assumptions of teachers' self-regulation skills, training programs can be prepared for children to learn self-regulation. The Montessori classes, in which the views of Maria Montessori, who has theoretical assumptions about the support of self-regulation skills, are widely used in Turkey. It is believed that the determination of how effective Montessori's views on self-regulation is in Turkey in the classrooms where this approach is applied will be effective in increasing the qualification and quality of pre-school education in Turkey. For this reason, in this study, it was aimed to investigate the effect of the Montessori approach on self-regulation skills of children aged between 48-60

months. For this purpose, self-regulation skills of children who continue to Montessori class and continue in National Education pre-school classes are compared.

MATERIAL AND METHODS

Sample of the Study: The main purpose of this study is to investigate the effect of the Montessori approach on self-regulation skills of children aged between 48-60 months. It is tried to determine how effective Montessori Approach applications are by comparing them with traditional program and education, because it is a different program than the MEB (Ministry of National Education) Preschool Program. In order to be able to detect the existing situation in a controlled way, a trial model with "Pretest-Posttest control group" was used between the real trial models.

Working Group: The study group consists of children selected by neutral appointment, aged between 48-60 months and who were educated in the Province Konya, County Selçuklu, Selcuk University, Faculty of Health Sciences, İhsan Doğramacı Practice Kindergarten during the 2015-2016 academic years. A total of 28 children were included in the study group, including 14 children (8 boys, 6 girls) trained by the Montessori method in the experimental group and 14 children (6 boys, 8 girls) trained according to the MEB Pre-School Education Program in the control group.

Data Collection Tool: The Pre-school Self-Regulation Assessment adapted by Fındık Tanrıbuyurdu & Güler Yıldız (2014) includes 10 tasks that assess children's self-regulation performances. These tasks are; toy packaging, waiting for toys, candy storage and holding a candy on the tongue for children's pleasure procrastination levels; a balance board, towage and pen clicking to follow the instructions and collecting towers, allocating toys and returning toys for children's social adaptation skills. There is also a Practitioner Assessment Form on the scale, which provides the researcher with the opportunity to evaluate the child's emotions, the level of attention and behaviours. The Practitioner Assessment Form is a rubric-type measuring instrument consisting of the items scored from 0 to 3. In the Turkey Adaptations Study, it was determined that the scale also showed the same factors in Turkey as it was shown in the original. In addition, the reliability coefficient in the Attention/Impulse Control subscale was determined as (α) .88; the Positive Emotion in the sub-dimension was .80 and .83 all over the scale.

Data Collection and Analysis: The Pre-School Self-Regulatory Scale was administered to each child individually and the directives of the tasks in the scale are given to the child by the researchers to perform. The performance of the child was recorded during the implementation process. The assessment took 25 minutes on average for each child. After having completed the application, the researcher has recorded the overall performance of the child's attention, emotional and behavioural adjustment processes throughout the implementation period. Pre-test application works are carried out between 14-25 September 2015; post-test application works are carried out between 19-24 May 2016. During this period, the experimental group students were pre-schooled for 27 weeks using the Montessori

Approach by teachers who received 112 hours of Applied Montessori Education. The control group students were pre-schooled for 27 weeks by using the MEB Pre-School Education Program. In the study, data collected from data collection tools were analysed using the Mann Whitney-U Test and the Wilcoxon signed-Ranks Test using a data analysis package program for SPSS 16.0 social sciences. The Mann Whitney-U test was used to test whether the scores obtained from two unrelated groups differed significantly from each other and the Wilcoxon signed rank test was used to test the significance of the difference between the scores of the associated measuring set (Büyüköztürk, 2005). Descriptive statistics were also used in the study to calculate the arithmetic average and standard deviations of the groups. In the study, the significance of the difference between the averages of the points was tested at a level of significance of 0.05.

RESULTS

In order to test whether the pre-test averages of the pre-school self-regulation assessment of the experimental group and the control group constituting the study group were similar to each other, pre-school Self-Regulation Assessment averages of both groups before the test were analysed with the Mann Whitney U test. The values relating the comparison are given in Table 1.

Table 1: Mann Whitney U Test Results for Comparison of Self-Regulation Pre-test Scores of the Groups

Scale Items		n	\bar{X}	Ss	ST	SO	U	Z	P
Balance Board	Test	14	6.92	6.55	16.82	235.5	65.5	-1.50	.13
	Control	14	3.85	3.43	12.18	175.5			
Pen Ticking	Test	14	63.07	38.33	14.71	206.0	95.00	-.13	.89
	Control	14	60.35	32.51	14.29	200.0			
Tower Mission	Test	14	1.92	.26	14.50	203.0	98.00	.00	1.00
	Control	14	1.92	.26	14.50	203.0			
Tower Collection	Test	14	30.50	12.83	11.68	163.5	58.5	-1.81	.07
	Control	14	37.78	8.20	17.32	242.5			
Toy Separation	Test	14	111.21	49.07	15.89	222.5	78.5	-.89	.37
	Control	14	95.78	45.39	13.11	183.5			
Toy Packing	Test	14	36.21	26.13	14.00	196.0	91.00	-.35	.72
	Control	14	39.57	26.01	15.00	210.0			
Returning a	Test	14	.00	.00	14.00	196.0	91.0	-1.00	.31

Scale Items		n	\bar{X}	Ss	ST	SO	U	Z	P
Toy	Control	14	.14	.53	15.00	210.0			
Hiding a Candy	Test	14	3.83	.41	15.82	221.5	79.5	-1.02	.30
	Control	14	3.82	.24	13.18	184.5			
Holding a Candy on the Tongue	Test	14	30.14	14.77	15.46	216.5	84.5	-.67	.50
	Control	14	27.00	16.40	13.54	189.5			

As we can see after examination of Table 1, there was no statistically significant difference between the pre-test average scores in all activities of the Pre-School Self-Regulation Assessment ($P > 0.05$). According to this result, it can be considered that the groups are equal to each other. In other words, when independent variables that can not be controlled in the same way are assumed to affect the experimental and control groups in the same way, it can be said that the differences in children's achievement of self-regulation skills can be attributed to the operations to be performed in the experimental and control groups.

Table 2: Mann Whitney U Test Results for Comparison of Self-Regulation Post-test Scores of the Groups

Scale Items		n	\bar{X}	Ss	ST	SO	U	Z	P
Balance Board	Test	14	10.14	7.96	16.43	230.0	71.00	-1.24	.21
	Control	14	7.00	8.58	12.57	176.0			
Pn Ticking	Test	14	85.28	22.95	16.36	229.0	72.00	-1.26	.20
	Control	14	69.85	35.93	12.64	177.0			
Tower Mission	Test	14	2.00	.00	14.50	203.0	98.00	.00	1.00
	Control	14	2.00	.00	14.50	203.0			
Tower Collection	Test	14	18.50	5.15	9.14	128.0	23.00	-3.45	.001
	Control	14	30.71	8.85	19.86	278.0			
Toy Separation	Test	14	69.07	18.64	10.96	153.5	48.50	-2.27	.02
	Control	14	142.14	184.18	18.04	252.5			
Toy Packing	Test	14	57.57	12.82	15.46	216.5	84.50	-1.01	.30
	Control	14	51.28	19.59	13.54	189.5			
Returning a Toy	Test	14	2.00	1.79	15.50	213.0	84.00	-.69	.49
	Control	14	1.78	2.48	13.50	193.0			

Scale Items		n	\bar{X}	Ss	ST	SO	U	Z	P
Hiding a Candy	Test	14	4.00	.00	16.50	231.0	70.00	-2.11	.03
	Control	14	3.89	.18	12.50	175.0			
Holding a Candy on the Tongue	Test	14	40.21	2.93	16.68	233.5	67.50	-1.95	.05
	Control	14	30.21	16.34	12.32	172.5			

After examining Table 2, it appears that there is a significant differentiation in favour of the experimental group in the average score of "hiding candy" and "holding a candy on the tongue" activities which are included in pleasure postpone events and "tower collection" and "toy separation" activities which are included in social gathering activities of the children in the experimental group participating in the training of the Montessori approach. There is no significant difference in the average scores of activities that are included in follow-up-executive activities such as balance board, tower making and pen ticking. This can be interpreted as the fact that self-regulation skills of children in a class in which the Montessori approach is applied are higher than self-regulation skills of children in the MEB program. According to this result, it can be said that the Montessori approach positively affects children's self-regulation skills.

Table 3: Wilcoxon Test Results for Comparison of Self-Regulation Pre-Post Test Scores of the MEB Program

Scale Items		n	\bar{X}	Ss	ST	SO	Z	P
Balance Board	Pre-test	14	3.85	3.43	8.50	17.00	-1.42	.15
	Post-test	14	7.00	8.58	5.44	49.00		
Pen Ticking	Pre-test	14	60.35	32.51	4.50	18.00	-.53	.59
	Post-test	14	69.85	35.93	5.40	27.00		
Tower Mission	Pre-test	14	1.92	.26	.00	.00	-1.00	.31
	Post-test	14	2.00	.00	1.00	1.00		
Tower Collection	Pre-test	14	37.78	8.20	7.71	54.00	-1.87	.06
	Post-test	14	30.71	8.85	3.00	12.00		
Toy Separation	Pre-test	14	95.78	45.39	6.5	39.00	-.45	.65
	Post-test	14	142.14	184.18	7.43	52.00		
Toy Packing	Pre-test	14	39.57	26.01	2.00	4.00	-1.69	.09
	Post-test	14	51.28	19.59	4.80	24.00		

Scale Items		n	\bar{X}	Ss	ST	SO	Z	P
Returning a Toy	Pre-test	14	.14	.53	3.00	3.00	-2.72	.006
	Post-test	14	1.78	2.48	6.30	63.00		
Hiding a Candy	Pre-test	14	3.82	.24	4.00	4.00	-.96	.33
	Post-test	14	3.89	.18	2.75	11.00		
Holding a Candy on the Tongue	Pre-test	14	27.00	16.40	5.25	10.50	-1.05	.29
	Post-test	14	30.21	16.34	4.25	25.50		

After examining Table 3 we can see that there is no statistically significant difference in all activities between the pre-test and post-test average scores of the control group children participating in the education in which the MEB program is applied except for the "Returning a Toy" activity. It is expected that there will be a decrease in the time of returning the toy by the children to the researcher in the "Returning a Toy" activity. However, it is seen that the return time of the toy by children in the control group increased significantly in the post-test. This situation can be interpreted as the fact that the MEB program does not develop children's self-regulation skills.

Table 4: Wilcoxon Test Results for Comparison of Self-Regulation Pre-Post Test Scores of the Montessori Approach

Scale Items		n	\bar{X}	Ss	ST	SO	Z	P
Balance Board	Pre-test	14	6.92	6.55	6.00	24.00	-1.50	.13
	Post-test	14	10.14	7.96	7.44	67.00		
Pen Ticking	Pre-test	14	63.07	38.33	4.00	8.00	-2.22	.02
	Post-test	14	85.28	22.95	6.44	58.00		
Tower Mission	Pre-test	14	1.92	.26	.00	.00	-1.00	.31
	Post-test	14	2.00	.00	1.00	1.00		
Tower Collection	Pre-test	14	30.50	12.83	7.65	99.5	-2.95	.003
	Post-test	14	18.50	5.15	5.50	5.50		
Toy Separation	Pre-test	14	111.21	49.07	7.71	92.50	-2.51	.01
	Post-test	14	69.07	18.64	6.25	12.50		
Toy Packing	Pre-test	14	36.21	26.13	3.00	3.00	-2.12	.03
	Post-test	14	57.57	12.82	4.71	33.0		

Scale Items		n	\bar{X}	Ss	ST	SO	Z	P
Returning a Toy	Pre-test	14	.00	.00	.00	.00	-3.37	.001
	Post-test	14	2.00	1.79	7.50	105.00		
Hiding a Candy	Pre-test	14	3.83	.41	1.50	.00	-1.60	.10
	Post-test	14	4.00	.00	2.83	2.00		
Holding a Candy on the Tongue	Pre-test	14	30.14	14.77	4.00	.00	-2.20	.02
	Post-test	14	40.21	2.93	4.00	3.50		

When Table 4 is examined we can see that there is a statistically significant difference between the pre-test and post-test average scores of test group children participating in the education in which the Montessori Approach is applied for follow-up-executive activities like "pen ticking" activities, pleasure delayer activities like "toy packing", "holding a candy on the tongue" activities and social gathering activities like "Tower Collection", "Returning a Toy" and "Toy Separation" activities. It can be interpreted as the Montessori Approach contributes significantly to the support of children's self-regulation skills. However, it is expected that there will be a decrease in the time of "Returning a Toy" by the children to the researcher. Nevertheless, it has been found that the toy-returning time of the test group children increased significantly in the post-test.

Table 5: Descriptive Analyses of Pre-School Self-Regulation Assessment (PSRA) and Mann Whitney U Test Results for Comparison of Post-test Scores of Groups

Scale Items		n	Lowest Score	Highest Score	\bar{X}	Ss	ST	SO	U	Z	P
PSRA Attention-Impulse Control	Test	14	4	30	25.78	1.92	17.86	250.00	51.00	-2.19	.02
	Control	14	4	30	23.50	2.71	11.14	156.00			
Positive Emotions	Test	14	2	18	17.85	.36	15.71	220.00	81.00	-1.09	.27
	Control	14	2	18	17.21	1.67	13.29	186.00			
PSRA Total Score	Test	14	8	48	43.64	2.20	18.18	254.50	46.50	-2.40	.01
	Control	14	8	48	40.71	4.00	10.82	151.50			

In Table 5 it is seen that the self-regulation total score average of the test group children is 43.64, the total score average of the control group children is 40.71. Given that the highest possible score that can be taken from the entire scale is 48, it can be said that the self-regulation of the test group children is high. Nevertheless, it

appears that the self-regulation of children in the classroom in which the Montessori approach is applied is significantly better than the control group children.

In the subscale of children's attention/impulse control, it is seen that the average score of the children of the test group is 25.78 and that of the control group children is 23.50. Given that the highest possible score that can be taken in the Attention/Impulse Control subscale is 30, it can be stated that the children of the test and control group exhibit a high degree of self-regulation, as it is the case across the scale. Nevertheless, the attention impulse control skills of children who are in the classroom where the Montessori approach is applied, are significantly more advanced compared to the control group children.

In the positive emotional subscale of the children, it was determined that the average scores of the children of the test group were 17.85 and the average scores of the children of the control group were 17.21. Given that the highest possible score at this dimension is 18, it can be said that children perform consistently with all of the scale and the attention/impulse control subscale. There is also no significant difference between the test and control group children.

DISCUSSION

According to findings obtained from the research; It was determined that the children in the test group participating to the class where the Montessori approach is applied were significantly different in favour of the test group in the average scores of pleasure postponing activities including "hiding a candy" and " holding a candy on the tongue" activities and social gathering activities including "tower collection" and "toy separation" activities. In addition, there is no significant difference in the average of the points in the "balance board", "tower making" and "pen ticking" activities in the follow-up-executive functions activities. This can be interpreted as the fact that the self-regulation skills of the children in the class in which the Montessori Approach is applied are higher than the self-regulation skills of the children in the MEB program. According to this result, it can be said that the Montessori approach positively affects children's self-regulation skills. This can be explained by the unique qualities of the Montessori Approach, such as the basic philosophy of the Montessori Approach, the perspective of the approach to the child, the educational environment presented to the child in the approach and the nature of the educational material and the role of the teacher in the approach. The concept of environment that is prepared in the Montessori approach has an important place. This environment is child-centred, an environment that focuses on the development of the child, that suits the child's interests, which allows the child to progress on his own, an environment that focuses on the development of the child and in this environment, materials are given to the child, in a certain order and place according to their complexity and priority. In this way, children are allowed to reveal their own tendencies and meet their mental needs. In addition, freedom lies at the heart of this approach, in which children freely choose the material, person, place and duration they want to work with, and this freedom implies responsibility for the child. In this way, the child's independence initiatives are supported. Again in this approach, there is one of every material, the child keeps patience while

waiting for the selected child and in this way the child learns to wait, to be patient and again with this material, this/her decision on the desire to work is reassessed, in this way the child is helped in gaining a habit of thinking before making a choice. In the basic philosophy of this approach, the studies aimed to be developed in the child are provided by placing it in his daily life, which makes it easier to adopt and internalize the behaviour of the child. When all these qualities come together, it can be said that this has a positive influence on self-regulation skills of the children (Çakıroğlu Wilbrant, 2008; Çakıroğlu Wilbrant, 2009; Korkmaz, 2006; Tepeli, 2011; Mroczkowski, 2014).

When the Montessori approach is analysed (Tepeli & Yılmaz, 2012; Toran, 2011; Koçyiğit & Kayılı, 2008; Aral et al., 2015; Kuşçu et al., 2014; Dereli, 2017), it is determined that the Montessori approach has an effect on the social skills, social adaptation and the social problem solving skills of children, that these children were more likely to wait, take responsibility and finish work than children who were traditionally educated.

As a result of the study, there was no statistically significant difference between pre-test and post-test averages of the children of the control group participating in the education of the MEB program in all activities except for the "returning the toy" activity. It is expected that there will be a reduction in time of giving back the toy to the researcher in the "returning the toy" activity. However, it is seen that the toy returning time of the children in the control group increased significantly in the post-test. This can be interpreted as the fact that the MEB program has no effect on children's self-regulation skills. Although the 2013 Pre-School Education Program does not include individual purpose-oriented statements for children's self-regulation skills, it is seen that the principle "*Education should ensure that the child respects and trusts himself; should give him self-control*" (MEB, 2013, p.11) takes place for the development of these skills in children. In addition, the program emphasizes the need for the child to participate actively in the activities and the need for freedom to choose activities and things to play and choose the materials in educational environments. Again, when achievements and indicators related to the social and emotional areas are examined, although the attainment, "*Motivates himself to accomplish a job or a task*", which has an important place in terms of self-regulation skills of children, and as for it the indicator "*Starts a business without adult guidance. Strives to finish the work on time that he/she started on time*" pull the attention; this has not been effective in the development of children's self-regulation skills (MEB, 2013, p.29). This reveals the importance of besides the principles, achievements and indicators containing in the currently implemented program and both the educational environment and activity for the development of these skills of children and the importance of teachers' awareness of this issue.

Besides, in accordance with the findings obtained from the study, there was a statistically significant difference between the pre-test and post-test point averages of the test group children who were participating in the education in the class where the Montessori Approach is applied, in follow-up-executive functions activities including "pen ticking", pleasure postponing activities including "packing a toy", "

holding a candy on the tongue" activities and social gathering activities including "tower collection", "returning a toy" and "toy separation" activities. This can be interpreted as the Montessori Approach has an important contribution to the support of children's self-regulation skills. However, it is expected that there will be a decrease in the time of returning the toy by the children to the researcher in the "returning the toy" activity. However, it has been determined that the toy returning time of the test group children increased significantly in the post-test. In the development of self-regulation skills of children, there is a need for the presence of learning environments where they can construct their own learning events, influence their own learning processes, evaluate their own learning processes, make their own plans, give feedback and correct themselves (Üredi & Üredi, 2007). From this point of view, it can be said that the Montessori approach is effective in the development of children's self-regulation skills in terms of educational environment, materials, educational philosophy and other qualifications.

One of the remarkable results of this study is that while it was anticipated that there would be a decrease in the toy returning time of the children to the researcher in the classes where both programs are applied, there is a significant increase in the toy returning time of the children in both groups in the post-test. According to Montessori, children's working styles are different from adults; objects are tools that contribute to the formation of the personality, rather than objects in the outer world being a target to be reached for him. The process is more important in the job that is done, the child repeats his studies until it reaches internal satisfaction in this work, children are working to resolve their internal needs, by its very nature the child wants to excel and become independent. At this point, the absence of the reward and punishment system, which is the unique characteristic of the Montessori approach, prevents the child from disturbing his natural desire to work and also because of the error checking feature in the materials, he does not need anyone to approve the correctness of the work he has done, he becomes independent by checking his correctness (Çakıroğlu Wilbrant, 2009, who has transferred from Schumutzler, 1994). For this reason, there was a significant increase in the post-test in the classes where both programs are applied, while it was anticipated that there would be a decrease in the toy returning time of the children to the researcher; it can be said that there is an increase in the post-test scores due to the intrinsic fulfilment of the children's work and the desire to perfect in this job and the lack of learning needs related to the material in question.

Again as a result of the study, it was found that the total scores of self-regulating skills and attention impulse control skills of children who were educated in the class in which the Montessori approach were significantly higher than the control group children, there was no differentiation between the two groups in the positive emotional subscale. This result, obtained in terms of attention impulse control skills, the polarization of the attention, which is included in the basic philosophy of the Montessori Approach, is considered to be a result of the concentration principle. Montessori considers concentration skills as part of life, underscoring that children should never be disturbed during their work. Besides Montessori emphasized that an education, designed in particular in accordance with

the individual development of each child and containing free choices, will ensure the development of children's attention skills (Wilbrandt Çakıroğlu, 2008). It has been determined that the Montessori approach facilitates children's natural ability to concentrate in the studies on the effects of children on attention skills (Lloyd, 2008; Koçyiğit et al., 2010) and it was found to be effective in concentrating skills.

CONCLUSIONS

According to the findings obtained from the study, it has been determined that the self-regulation skills of the children in the class in which the Montessori Approach is applied are higher than the self-regulation skills of the children who continue to the classes in which the MEB preschool education program is applied. In accordance with the obtained findings, achievements, indicators and activities for the development of children's self-regulation skills can be added to the program in addition to the principles, achievements and indicators in the pre-school education program currently being applied. Programs can be organized for pre-school teachers on self-regulation skills, school preparation skills, adaptation to the school and the importance of academic achievement.

REFERENCES

- Aral, N.; Bıçakcı, M.; Yurteri Tiryaki, A.; Çetin Sultanoğlu, S.; Şahin, S. (2015). Montessori Eğitiminin Çocukların Gelişimine Etkisinin İncelenmesi. Hacettepe Üniversitesi Eğitim Bilimleri Enstitüsü Eğitim Araştırmaları Dergisi 1 (1), 32-52.
- Bandura, A. (1994). Self-efficacy. In V. S. Ramachandran (Ed.), *Encyclopedia of Human Behavior* (Vol. 4, pp. 71–81). Academic Press. New York. (Reprinted in H. Friedman [Ed.], *Encyclopedia Of Mental Health*. Academic Press. San Diego. 1998). Retrieved September 2, 2004, from www.emory.edu/EDUCATION/mfp/BanEncy.html.
- Büyüköztürk, Ş. (2005). *Sosyal Bilimler İçin Veri Analizi El Kitabı*. Pegem Yayıncılık. Ankara.
- Blair, C. (2002). School Readiness: Integrating Cognition and Emotion in a Neurobiological Conceptualization of Child Functioning at School Entry. *American Psychologist* 57, 111–127.
- Blair, C. & Razza, R. P. (2007). Relating Effortful Control, Executive Function, and False Belief Understanding to Emerging Math and Literacy Ability in Kindergarten. *Child Development* 78(2), 647-663.
- Bronson, M. B. (2000). *Self-Regulation in Early Childhood: Nature and Nurture*, New York, NY: Guilford.
- Çakıroğlu Wilbrandt, E. (2008). *Okulöncesi Dönem Montessori Yöntemi İle Kaynaştırma Uygulamaları. Öğretmen El Kitabı*, Poyraz Ofset. Ankara
- Çakıroğlu Wilbrandt, E. (2009). *Maria Montessori Yöntemiyle Çocuk Eğitimi Sanatı*, Sistem Yayıncılık. İstanbul.
- Degol, J. L. & Bachman, H. J. (2015). Preschool Teachers' Classroom Behavioral Socialization Practices and Low-Income Children's Self-Regulation Skills. *Early Childhood Research Quarterly* 31, 89–100.

- Denham, S. A., Bassett, H. H. ve Wyatt, T. (2007). The Socialization of Emotional Competence. In J. E. Grusec, & P. D. Hastings (Eds.), *Handbook of Socialization: Theory and Research* (pp. 614–637). New York, NY : Guilford Press.
- Dereli, E. (2017). Montessori Eğitim Programının Çocukların Psikososyal Gelişimlerine ve Sosyal Problem Çözme Becerilerine Etkisinin İncelenmesi. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi (KEFAD)*18 (2), 135-153
- Domitrovich, C. E.; Cortes, R. C.; Greenberg, M. T. (2007). Improving Young Children’s Social and Emotional Competence: A Randomized Trial of the Preschool PATHS Curriculum. *Journal of Primary Prevention* 28, 67–91.
- Eisenberg, N.; Cumberland, A. J.; Spinrad, T. L.; Fabes, R. A.; Shepard, S. A.; Reiser, M.; diğerleri (2001). The Relations of Regulation and Emotionality to Children’s Externalizing and Internalizing Problem Behavior. *Child Development* 72, 1112–1134.
- Fındık Tanrıbuyurdu, E. & Güler Yıldız, T. (2014). Okul Öncesi Öz Düzenleme Ölçeği (OÖDÖ): Türkiye Uyarlama Çalışması. *Eğitim ve Bilim*, 39 (176), 317-328.
- Güler Yıldız, T.; Ertürk Kara, H. G.; Fındık Tanrıbuyurdu, E. (2014). Özdüzenleme Becerilerinin Öğretmen Çocuk Etkileşimin Niteliğine Göre İncelenmesi. *Eğitim ve Bilim* 39 (176), 329-338.
- Howse, R. B.; Calkins, S. D.; Anastopoulos, A. D.; Keane, S. P.; Shelton, T. L. (2003). Regulatory Contributors to Children’s Kindergarten Achievement. *Early Education & Development* 14, 101–119.
- Kochanska, G.; Murray, K. T.; Harlan, E. T. (2000). Effortful Control in Early Child-Hood: Continuity and Change, Antecedents, and Implications for Social Development. *Developmental Psychology* 36, 220–232.
- Koçyiğit, S. & Kayılı, G. (2008). Montessori Eğitimi Alan ve Almayan Anaokulu Öğrencilerinin Sosyal Becerilerinin Karşılaştırılması. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi* 20, 511–516.
- Koçyiğit, S.; Kayılı, G.; Erbay, F. (2010). Montessori Yönteminin Beş – Altı Yaş Çocuklarının Dikkat Toplama Becerilerine Etkisinin İncelenmesi. *Çağdaş Eğitim Dergisi* 35 (371), 16-21.
- Korkmaz, E. (2006). *Montessori Metodu / Eğitimde Bir Alternatif*, Algı Yayıncılık. Ankara.
- Kuşçu, Ö.; Bozdaş, Y.; Yıldırım Doğru, S. (2014). Montessori Eğitiminin Çocuklarda Sorumluluk Alma, Sırasını Bekleme, Başladığı İş Bitirme Becerisine Etkisinin Değerlendirilmesi. *Değerler Eğitimi Dergisi* 12 (27), 307-322.
- Liew, J. (2012). Effortful Control, Executive Functions, and Education: Bringing Self-Regulatory and Social-Emotional Competencies to the Table. *Child Development Perspectives* 6 (2), 105–111.
- Liew, J.; Chen, Q.; Hughes, J. N. (2010). Child Effortful Control, Teacher–Student Relationships, and Achievement in Academically At-Risk Children: Additive and Interactive Effects. *Early Childhood Research Quarterly* 25(1), 51–64.
- Lloyd, K. M. (2008). *An Analysis of Maria Montessori’s Theory of*

- Normalization in Light of Emerging Research in Self-Regulation, Unpublished Doctoral Dissertation, Oregon State University, Oregon.
- McCabe, L. A.; Rebello-Britto, P.; Hernandez, M. ; Brooks-Gunn, J. (2004). Games Children Play: Observing Young Children’s Self-Regulation across Laboratory, Home, and School Settings. In R. DelCarmen-Wiggins & A. Carter (Eds.), *Handbook of Infant, Toddler, and Preschool Mental Health Assessment* (pp. 491–521). Oxford University Press New York.
- McClelland, M. M. & Morrison, F. J. (2003). The Emergence of Learning-Related Socialskills in Preschool Children. *Early Childhood Research Quarterly* 18, 206–224.
- McClelland, M. M.; Cameron, C. E.; Connor, C. M.; Farris, C. L.; Jewkes, A. M.; Morrison, F. J. (2007). Links between Behavioral Regulation and Preschoolers’ Literacy, Vocabulary and Math Skills. *Developmental Psychology* 43, 947–959.
- McClelland, M. M.; Morrison, F. J.; Holmes, D. L. (2000). Children at Risk for Early Academic Problems: The Role of Learning-Related Social Skills. *Early Childhood Research Quarterly* 15(3), 307–329.
- MEB. (2013). *Okul Öncesi Eğitim Programı*, MEB Basımevi. Ankara:
- Miles, S. B. & Stipek, D. (2006). Contemporaneous and Longitudinal Associations between Social Behavior and Literacy Achievement in a Sample of Low-Income Elementary School Children. *Child Development*, 77, 103–117.
- Montessori, M. (1949). *The Absorbed Mind*. The Theosophical Publishing House. Madras (India).
- Montessori, M. (1967). *The Discovery of the Child*. Ballantine Books. New York.
- Montessori, M. (1995). *The Absorbent Mind*. Henry Holt and Company. Northwest Evaluation New York.
- Mroczkowski, J. (2014). *Comparing the Normalization of Children in Traditional and Montessori Kindergarten*. Unpublished Master Dissertation. University of Wisconsin – River Falls
- Murphy, B. C.; Eisenberg, N.; Fabes, R. A.; Shepard, S.; Guthrie, I. K. (1999). Consistency and Change in Children’s Emotionality and Regulation: A Longitudinal Study. *Merrill-Palmer Quarterly* 45, 413–444.
- NAMTA. (2005). *Prepared Environment*”, [http://www. Montessori-namta. org/ NAMTA/geninfo/ concepts1. html](http://www.Montessori-namta.org/NAMTA/geninfo/concepts1.html) [Erişim: 28. 02. 2005]
- Normandeau, S. & Guay, F. (1998). Preschool Behavior and First-Grade School Achievement: The Mediatlional Role of Cognitive Self-Control. *Journal of Educational Psychology* 90, 111–121.
- O’Donnell, M. (2007). *Maria Montessori*. Continuum International Publishing Group. London, New York
- Olson, S. L.; Sameroff, A. J.; Kerr, D. C. R.; Lopez, N.; Wellman, H. M. (2005). Developmental Foundations of Externalizing Problems in Young Children: The Role of Effortful Control. *Development and Psychopathology* 17, 25–45.
- Ponitz, C. C.; McClelland, M. M.; Matthews, J. S. & Morrison, F. J. (2009). A Structured Observation of Behavioral Self-Regulation And Its Contribution To Kindergarten Outcomes. *Developmental Psychology* 45, 605–619.
- Rimm-Kaufman, S. E.; Curby, T. W.; Grimm, K.; Nathanson, L.; Brock, L. L.

- (2009). The Contribution of Children's Self-Regulation and Classroom Quality to Children's Adaptive Behaviors in the Kindergarten Classroom. *Developmental Psychology* 45, 958–972.
- Smith-Donald, R.; Raver, C. C.; Hayes, T.; Richardson, B. (2007). Preliminary Construct and Concurrent Validity of Preschool Self-Regulation Assessment (PSRA) for Field-Based Research. *Early Childhood Research Quarterly* 22, 173-187.
- Stetsenko, A. & Vianna, E. (2009). Bridging Developmental Theory and Educational Practice: Lessons from the Vygotskian Project. In O. A. Barbarin & B. Hanna Wasik (Eds.), *Handbook of Child Development and Early Education: Research to Practice* (pp. 38–54). Guilford Press. New York.
- Tepeli, K. & Yılmaz, E. (2012). Üç Farklı Programa Göre Eğitim Alan Okul Öncesi Çocukların Sosyal Kural Algılarının İncelenmesi. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi* 28, 197-20.
- Tepeli, K. (2011). Montessori Yaklaşımında Çocuğun Gelisimi ve Eğitimi. Emel Çakıroğlu Wilbrant (Ed.). *Okul Öncesi Eğitimde Montessori Yaklaşımı* kitabı içinde (sayfa 50-83). Kök Yayıncılık: Ankara
- Toran, M. (2011). Montessori Yönteminin Çocukların Kavram Edinimi, Sosyal Uyumları ve Küçük Kas Motor Becerileri Üzerindeki Etkisinin İncelenmesi. *Yayınlanmamış Doktora Tezi. Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü, Ankara.*
- Üredi, I. & Üredi, L. (2007). Öğrencilerin Öz-Düzenleme Becerilerini Geliştiren Öğrenme Ortamının Oluşturulması *EDU* 7, 2(4). 1-29.
- Valiente, C.; Eisenberg, N.; Haugen, R.; Spinrad, T. L.; Hofer, C.; Liew, J.; diğerleri (2011). Children's Effortful Control and Academic Achievement: Mediation through Social Functioning. *Early Education and Development* 22, 411–433.
- Valiente, C.; Lemery-Chalfant, K. S.; Swanson, J. (2010). Prediction of Kindergartners' Academic Competence from Their Effortful Control and Negative Emotionality: Evidence for Direct and Moderated Relations. *Journal of Educational Psychology* 102 (3), 550–560.
- Valiente, C.; Lemery-Chalfant, K.; Castro, K. S. (2007). Children's Effortful Control and Academic Competence: Mediation through School Liking. *Merrill-Palmer Quarterly*, 53, 1–25.
- Vygotsky, L. (1978). *Mind in Society: The Development of Higher Mental Processes*, Harvard University Press. Cambridge.
- Webster-Stratton, C.; Reid, M. J.; Stoolmiller, M. (2008). Preventing Conduct Problems and Improving School Readiness: Evaluation of the Incredible Years Teacher and Child Training Programs in High-Risk Schools. *Journal of Child Psychology and Psychiatry* 49, 471–488.