

# Examination of the Effects of the Montessori Method on Preschool Children's Readiness to Primary Education\*

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## Abstract

This study examined the effects of the Montessori Method on preschool children's readiness to primary education. The research group is composed of five-six year olds attending SU MEF İhsan Doğramacı Application Nursery School in 2009-2010 school year in Selçuklu county of Konya. The participants composed of five-six year olds were unbiasedly chosen. A total of 50 children were included in the study, 25 being in the experimental group and 25 being in the control group. In the study, Metropolitan Readiness Test was used to determine preschool school children's school readiness levels, B form of PKBS Preschool and Kindergarten Behavior Scale was used to determine preschool children's social skills, FTF-K attention gathering skills test for five-year old children was used to determine preschool children's attention gathering skills. The tests were administered to children before and after experimentation, and it was applied to experimental group again six weeks later. Mann Whitney U test and Wilcoxon signed-rank test were used to analyze the data. The general conclusion of the results obtained is that The Montessori Method makes positive contribution to preschool children's readiness to primary school and is more efficient than current preschool education program.

## Key Words

Preschool Education, the Montessori Method, Readiness to Primary Education.

Preschool period is very important in human life and education in this period affects the life of child in the future (Aral, Kandır, & Can Yaşar, 2001). Qualified pre-school education is a must for the revelation of child's skills, meeting his basic needs

and his gaining of basic habits and their best preparation for (Zembar, 2005). One of the most important objectives of pre-school education is to prepare the child for primary school. Readiness for primary education which is also called school maturity or readiness to school means that the child is ready to meet physical, mental and social requirements of primary education (Güler, 2001). Readiness means the acquisition of prerequisite behaviors for the realization of certain instructional activities (Ülgen, 1997). According to Koçyiğit (2009), readiness to school is a concept which can vary from one child to another and can be completed at different ages, balanced maturation of child with significant background in all development areas and child's ability to show all properties required for learning to take place. Although the concept of school readiness is used to mean learning to read, children's general social development and intellectual developments are to be considered as a part of school readiness

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(Unutkan, 2003). Child's having qualities required from those starting primary education and especially being ready to learn to read is a very complex and multi-dimensional phenomenon. The concept of readiness confined to being ready to learn by various researchers includes various factors in line with the views of any researcher and author (Oktay, 1999). Generally, it is argued that visual maturity, ability to distinguish colors, visual memory, hand-eye coordination, aural discrimination/hearing, social and emotional factors and attention length are important in pre-school classed (Güven, 1991). Various researchers list many factors for readiness, Oktay (1999) points out physical factors, mental factors, and emotional factors, social and environmental factors are attention-grabbing.

Studies on this issue indicate that parents and pre-school education institutions hold the greatest responsibility for the child's preparation to primary school. The skills child acquires in pre-school period form the basis for the skills children will acquire later in life. The deficiencies in the development of child in 0-6 year old can hardly be dealt with in periods ahead. In this sense, pre-school education institutions and pre-school education programs followed in these institutions has a great importance for preparing children for primary education (Boz, 2004; Esaspehlivan, 2006; Koçyiğit, 2009; Kotil, 2005; Tuğrul, 1992; Ülkü, 2007).

Today there are many alternative pre-school education programs and approaches. Each of these programs has different education understanding, teacher training system, material development and classroom management approaches (Erişen & Güleş, 2008). Among them The Montessori Method stands out in many aspects. According to the basic philosophy behind the Montessori Method, human beings are innately bound for benevolence and their main aim is self-realization. The education method Montessori developed shows great parallelism with the personality theories developed by J.J. Rousseau, Adler, Prescott Lecky, Carl Rogers and Abraham. Just like these personality theoreticians, Montessori underscores the personality development, as well (Cosgrove & Ballou, 2006; Enright, 1997; Oktay, 1993). Montessori emphasizes that every child goes through a unique development process, and is a unique individual and can learn in line with his/her capacity. Montessori frees knowledge from being memorized and made it concrete to an extent that children at any age can understand and developed a method and series of materials which can transfer it in an integrated way.

The basis of the Montessori education is to make child independent and prepare the most suitable environment to support child's development. Firstly, Montessori determined the qualities necessary for the child's development and then developed the method and materials appropriate for these qualities. In his studies, he aimed the development of children in different areas by using these materials. These areas are senses, mathematics, language, geography, history and culture, science and nature, kindness, behavior, and sport (Oğuz & Köksal Akyol, 2006).

In Montessori classrooms materials are designed according to physical characteristics of children. There are light, portable furniture that are suitable to child's height and proportioned to their body, cupboards, hangers and locks they can reach easily, drawers and doors that are easy to open and close, brushes they can easily grasp, soaps that fit to their hands' size, sweepers with short-straight broomsticks and clothes they can put on or take off on their (Çakıroğlu Wilbrandt, 2008).

### Purpose

The purpose of this study was to examine the effects of the Montessori Method on preschool children's readiness to primary education.

## Method

### Research Design

The study was designed with pre-test and post-test model with a control group. In the study, delayed post-test was employed six weeks after post-test to determine retention effect.

### Research Group

The research group is composed of five-six year olds attending SU MEF Ihsan Dogramaci Application Nursery School in 2009-2010 school year in Selcuklu county of Konya. The participants composed of five-six year olds were unbiasedly chosen. A total of 50 children, 25 of whom were in the experimental group and 25 of whom were in the control group, were included in the study.

### Instruments

In the study, Metropolitan Readiness Test was used to determine preschool school children's school readiness levels, B form of PKBS Preschool and

Kindergarten Behavior Scale were used to determine preschool children's social skills, FTF-K attention gathering skills test for five-year old children was used to determine preschool children's attention gathering skills.

**Metropolitan Readiness Test:** Metropolitan Readiness Test was developed by Hildreth, Griffiths, and McGauvran (1965) to measure the qualities that will help the instructions given in the first grade and success level of children to start primary education. The original form of the test was in English and the R form of the test was adopted into Turkish by Oktay (1980). The test does not require the child to give any verbal answer. Almost all the shapes which make up the items of the test are the pictures of objects Turkish children are familiar with (Yazıcı, 1999). The test which is composed of a leaflet of 16 pages includes 6 separate tests. It has a total of 100 items. Each sub-test is composed of pictures which the child can mark or copy according to verbal instruction given to him/her. The test was administrated individually and took 24 minutes for each child.

For the validation of the test American norms and Istanbul norms were compared. The means and standard deviations of the scores of the children chosen from the schools in the most developed regions of Istanbul were found to be similar to those of American children (Öner, 1997).

**Preschool and Kindergarten Behavior Scales:** The scale which was developed by Merrell (1994) to originally have 76 items was evaluated again and was given the final form in line with the results of factor analysis carried out by Şahin Secer, Çeliköz, Koçyiğit, Secer and Kayılı and experts views applied to achieve content validity. However, no item was removed as the results were similar to those of the original form. The data collection instrument is composed of 2 forms and 76 Likert type question items asked to determine social skills and problematic behaviors of nursery class and nursery school pupils. In the study, B Form of Social Skills Scale was used. Social skills are composed of 3 sub-dimensions: social cooperation, social interaction and social independence. Forty-two of the statements in the scale are to identify pupil's problem behavior, 34 of them are to determine his/her social skills.

**FTF-K Frankfurter Tests for Five Years – Concentration:** This test was developed by Raatz and Möhling (1971) and aims to measure children's skills to concentrate. The children are required to find and mark pears among a mixture of apples

and pears in 90 seconds. The reliability of the FTF-K test was determined with test-re-test method. It was applied twice to four-year olds ( $n=29$ ) in two kindergartens at three weeks interval. The correlation between the two tests was found to be  $r=.85$  (cited in Kaymak, 1995).

### Process

The Metropolitan Readiness Test and FTF-K Tests for Five Years Old Concentration were applied to each child individually by the researcher. PKBS Nursery Class and Nursery School Behavior Scale, Form B was filled in by the class teacher for each child. The pre-test was administrated between 14 and 25 September 2009. The post-test was given between 19 and 24 April 2010. Six weeks after the post-test was administrated, the experimental group was given delayed-post test to determine retention effect.

### Data Analysis

Mann Whitney U test and Wilcoxon signed-rank test were used to analyze the data.

## Results

### Findings Related to the Effect of Montessori Method on the Readiness of Nursery School Children to Primary School

It has been found out that there is statistically significant difference between general school readiness pre-test post-test mean scores of the children in the experimental group ( $z=4.376, p<0.05$ ). When the order mean of the difference score and totals are considered, it can be said that the Montessori Method has a significant effect on school readiness of the pupils in experimental group.

There has been statistically significant difference between social skills pre-test post-test mean scores of the children in the experimental group ( $z=4.343, p<0.05$ ). When the order mean of the difference score and totals are considered, it can be said that the Montessori Method has a significant effect on school readiness of the pupils in experimental group.

It has been found out that there is statistically significant difference between concentration skills pre-test post-test mean scores of the children in the experimental group ( $z=4.380, p<0.05$ ). When the order mean of the difference score and totals

are considered, it can be said that the Montessori Method has a significant effect on school readiness of the pupils in experimental group.

#### **Findings with Regard to the Comparison of the Montessori Method and the Currently Applied Pre-School Education Program**

It is seen that general school readiness post-test mean scores of experimental and control groups show statistically significant difference ( $U=27.000$ ,  $p<0.05$ ). When line means and line totals are considered, it is seen that general school readiness post-test mean scores of the children in the experimental group who receive pre-school education with the Montessori Method are higher than those of the children in the control group who are educated with Pre-School Education Program by MNE (Ministry of National Education).

The social skills post-test scores of the experimental and control groups show statistically significant difference ( $U=22.500$ ,  $p<0.05$ ). When line means and line totals are considered, social skills post-test scores of the experimental group children who receive pre-school education with the Montessori Method are higher than those of the children in the control group who receive the same education with MNE Pre-School Education Program.

The concentration skill post-test scores of the experimental and control groups show statistically significant difference ( $U=83.000$ ,  $p<0.05$ ). When line means and line totals are considered, social skills post-test scores of the experimental group children who receive pre-school education with the Montessori Method are higher than those of the children in the control group who receive the same education with MNE Pre-School Education Program.

#### **Findings with Regard to the Retention of Effect of the Montessori Method on General School Readiness, Social Skills and Concentration**

It has been found out that there is no statistically significant difference between general school readiness post-test and delayed post-test mean scores of the children in experimental group ( $z=.173$ ,  $p>0.05$ ). These statistical data indicate that general school readiness post-test and delayed post-test scores of the children in experimental group are close to each other.

It has also been found out there is no statistically significant difference between social skills readi-

ness post-test and delayed post-test mean scores of the children in experimental group ( $z=1.338$ ,  $p>0.05$ ). These statistical data indicate that general school readiness post-test and delayed post-test scores of the children in experimental group are close to each other.

It has been found out that there is no statistically significant difference between concentration skills readiness post-test and delayed post-test mean scores of the children in experimental group ( $z=1.470$ ,  $p>0.05$ ). These statistical data indicate that general school readiness post-test and delayed post-test scores of the children in experimental group are close to each other.

#### **Discussion**

The results of the study make us think that the Montessori Method is more effective in preparing children to primary education. The studies carried out by Oktay (1980), Oktay (1983), Yazıcı (1999) point out that increasing child's reading maturity, numeric maturity, social skill level, and concentration skill play a significant role in preparing the child to primary education.

The findings of the study match up with the origin and education philosophy of Montessori. Montessori constructed his education understanding based on literacy and language education, arithmetic skills, movement and sense training and the principle of polarization of attention (Erben, 2005).

Other studies in which the efficiency of the Montessori Method was investigated reported similar findings. Kayılı, Koçyigit, and Erbay (2009) investigated the effect of the Montessori Method on nursery children's receptive language skills. As a result of the study, it was found out the receptive language skill of the five-six year old pre-school children who were educated with the Montessori Method were higher compared to those of their peers educated with MNE Pre-School Education Program. In the study by Yiğit (2008) it was found out that the children educated with the Montessori Method were more successful in acquiring the concept of number compared to those educated with MNE Pre-School Education Program. Prendergast (1969) studied the pre-reading skills of the children educated with the Montessori Method. As a result of the study, children educated with the Montessori Method had higher language skills.

When the child first starts the Montessori class s/he has a chance to learn from children older and

more experienced than him, and then s/he helps other less experienced children under the light of knowledge and skills s/he gains. Thus, the child learns to establish social relations with many various individuals (Mallory, 1989).

In their study, Lillard and Else-Quest (2006) compared the social and academic skills of children educated with the Montessori Method and traditional method. As a result of the study, it was seen that children educated with the Montessori Method showed better social skills. In the study by Koçyiğit and Kayılı (2008), effect of the Montessori Method on social skills of six and five-year olds was investigated. As a result of the study, it was found out that the children in the experimental group who were educated with the Montessori Method had higher social skill scores compared to those in the control group who were educated with MNE Pre-School Education Program.

The Montessori materials were prepared to enable children to find and correct their mistakes. To achieve this, there is generally only one problem to be solved with every material. Therefore, children can easily notice their mistakes and immediately correct their mistakes, which enable children to gather more attention on the subject (Oğuz & Köksal Akyol, 2006). These characteristics of materials make up the basis of concentration training. According to Özdoğan (2004), the basis of concentration education is to enable child to find and correct his own mistake. The child's interests, learning environment and physical stimulus play a significant role in gathering attention and focusing (Karaduman, 2004; Özdoğan, 2004). Literature review revealed results in line with the result of this study. In the study by Chattin – McNichols (1981) in which they studied the effectiveness of the Montessori Method it was determined that the Montessori Method had positive effect on children's concentration skills. Wagner (1990) pointed out that the Montessori Materials had effect on children's concentration skill. Koçyiğit, Kayılı, and Erbay (2010) studied effect of the Montessori Method on concentration skills of five-six year olds. As a result of the study, they determined that the five and six year old children who were educated with the Montessori method had higher concentration skill scores compared to the five and six year old children who were educated with MNE Pre-school Education Program.

The Montessori Method is based on the child's desire to learn. It enables the child to find the best and the easiest way by doing himself (Oğuz & Köksal

Akyol, 2006). Contrary to traditional education understanding, in the Montessori Method the child acquires the language and arithmetic skills in lie their desires and exploration, which makes learning more permanent. Besides, the Montessori materials are gradually arranged from easy to difficult and from concrete to abstract. Abstract concepts are taught by making them concrete with concrete materials, which makes learning as a result of education with the Montessori Method more permanent.

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