

Investigation of the relationship between school maturity levels and speech and language development of preschool students

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Abstract:


This study aims to examine the relationship between school maturity levels and speech and language development of children receiving preschool education. The correlational survey models was used to determine these relationships. The sample of the study consists of 44 boys and 58 girls who are studying in public schools in Meram district of Konya province in the 2022-2023 academic year and a total of 102 kindergarten students and 6 kindergarten teachers responsible for the education of these students. In the study, the Metropolitan School Maturity Test was used to determine the school maturity levels of the students as a data collection tool, and the Speech and Language Development Questionnaire was used to determine the students' speech and language development characteristics. The research data were analyzed by using SPSS 25 program. Accordingly, it was found that there was a significant positive relationship between the speech and language development of the students and the general preparation and number preparation sub-dimensions of school maturity. It was found that there was a significant differentiation in favor of girls between speech and language development by gender and all sub-dimensions of school maturity. It was found that there was no significant differentiation between the speech and language development levels of the students according to age; and in all sub-dimensions of school maturity, there was a significant differentiation in favor of the 6-year-old students according to age.

Keywords: Preschool, speech and language development, school maturity.

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INTRODUCTION

Each of the developmental processes is a prerequisite for the next process for children who go through many physical, cognitive, emotional, and social developmental processes from the moment they fall into the mother's womb. In accordance with the characteristics of each developmental period, the child goes through critical periods to acquire and learn the skills related to the period. Critical periods are the periods when the child has reached sufficient physical, cognitive, emotional, and social maturity and maturity to learn a skill. The pre-school period, which is the period before starting primary school, also includes critical periods for the next period. The preschool is the period in which the child spends time apart from the mother or caregiver, enters a social environment, and experiences social life for the first time. In this period, the child develops rapidly in the areas of motor and cognitive development, as well as all the social and psychological skills necessary for independence. The period of preparation and beginning of primary school is considered one of the developmental and difficult stages that children have to overcome in early childhood (Gill et al., 2006).

Preschool education is an important condition for the child's maturity for primary school and adaptation to school (Yavuzer, 2000; 2010). School maturity is defined as the child's maturity to start primary school in the areas of physical, emotional, cognitive, and social development (Yavuzer, 2010). In this period, children who have not reached sufficient maturity in these developmental areas may show various psychological and social adaptation problems and difficulties in learning to read and write during primary school. Although studies have shown that children's behavior problems decrease, their friendship relations, social skills, and school adjustment increase as their age increases in terms of maturity for primary school (Campbell, 2006; Vandell et al., 2006), a certain age alone is not sufficient as an indicator of reaching school maturity. Here, the feature of development emphasizing individual differences emerges. There are individual differences in development, and children who are chronologically the same age may have very different characteristics in the physical, cognitive, social, and emotional areas of development. There are many factors such as the characteristics of the family, parental attitudes, socioeconomic level, and cultural differences. For this reason, it is important to evaluate the child in a way that covers all developmental areas when deciding on the age to start primary school (Esaspehlivan, 2006).

When the studies on school maturity are examined, it is seen that there are studies on the effects of variables such as socioeconomic level, gender, parental education levels, and preschool education on school maturity. Güzel and Özyurt (2018) examined the school maturity levels of 221 children receiving preschool education and the opinions of teachers about school maturity. According to the research results, as the duration of preschool education and the age of children increases, their school maturity increases; the school maturity scores of the children in independent kindergartens are higher than those in

kindergartens affiliated with primary schools. It is seen that teachers expect children with school maturity to show physical and mental skills, to show similar characteristics with their peers, to be responsible, to understand and apply the classroom and school rules, and to express themselves comfortably. In his study, Şimşek (2007) examined the effect of the Turkish language activity program on the reading maturity level of kindergarten children, and at the end of the research, he concluded that the school maturity level of the students in the experimental group in which the activity program was applied was higher. Elter (2021) examined the relationship between school maturity and the physical and emotional development of preschool children. According to the research, gender does not cause differentiation in school maturity and emotional development; there is a low level of correlation between physical development and school maturity and there is a significant relationship between school maturity and emotional development. It has been observed that as the level of emotional intelligence increases, school maturity also increases. Arı and Özcan (2014) examined the effect of school maturity levels of first-grade students on their learning to read and write, and it was found that whether or not they received preschool education and the age of starting school had a significant effect on school maturity. They concluded that school maturity makes a significant difference in reading and writing skills.

In the international literature, Dennis et al. (2021) examined the effects of language problems and ADHD in preschool on school maturity in a socioeconomically disadvantaged school. According to the results of the research, there is a positive relationship between receptive language and cognitive and mathematical maturity; There is a negative relationship between ADHD behaviors and social, emotional, physical, and cognitive maturity. It was observed that ADHD is a risk factor for a lack of receptive language and social-emotional school maturity. In a survey study investigating the perception and understanding of school maturity, it was found that many children start school before they gain the skills to communicate clearly, eat independently, and toilet training; 89% of parents think that their children are ready for school when they start school, but according to teachers' opinions, this rate is 54% (The Perception And Understanding Of School Maturity, 2023). In a longitudinal study (Józsa et al., 2022) examining the effects of preschool intelligence and maternal education level on sixth-grade school performance, cognitive and social skill levels, intelligence level, and socioeconomic status in the preschool period were predictive of sixth-grade math, reading tests, and school grades. Sosu et al., (2023), in their study examining the effect of participation in early childhood education on school maturity in low and middle-income countries, found that early childhood education is associated with school maturity; the areas where this relationship is strongest are literacy and math maturity. It was concluded that the socioeconomic status of the family affects the school maturity. In a study examining the effects of behavioral and emotional self-regulation on school maturity (Guedes et al., 2023), it was found that behavioral self-regulation levels had a determining effect on children's school maturity and early social skills. Christensen et al. (2022), in their study in which school maturity was considered multidimensional, four risk

groups were determined in terms of school maturity. These are developmental disabilities, risky parenting, emotional immaturity, language, and developmental disabilities. These four profiles were found to be significantly associated with low reading comprehension, emotional and behavioral difficulties.

School maturity means that the child has reached the necessary and specific competencies for the primary school period in all developmental areas. Language development, which is one of the most important areas of cognitive development, also has an important place in gaining school maturity. Language development is directly related to the child's ability to express himself, establish social relations, and realize various learnings when participating in a social environment in the preschool period. Language is one of the indicators used in the evaluation of early childhood development, and when it is considered in terms of school maturity, children should have some verbal language skills during the school start period (Rhode Island KIDS COUNT, 2005). In terms of receptive and expressive language skills, the child can use detailed sentences, communicate easily with peers or adults, tell stories about a topic, listen and understand short stories, understand the questions asked about a story he listens and is expected to have skills such as understanding most of what is spoken in the home and school environment. (Sharp & Hillenbrand, 2006). The child's vocabulary, ability to form sentences, and ability to understand verbal expressions are important in adapting to school, learning to read and write, and achieving grade-level academic achievements (Oktay, 2013). Children who are at the stage of transitioning from preschool to primary school are expected to have language skills such as listening, comprehension, and verbal language skills, forming long and complex sentences following the grammatical structure, and using a wide vocabulary (Razon, 1982).

When the studies evaluating language development in the preschool period are examined, Studies examining the interaction of the parents with the child and the effect of reading to the child on the language development of the child (Cirhinlioğlu, 2001); the effect of the education level of the parents on the scores of the children in the vocabulary test (Gürocak, 2007; Yıldırım Doğru et al., 2010); the effect of socio-economic level on school maturity, the number of words and sentences used by children and (Harman & Çelikler, 2012; Yıldız Çiçek, 2010; White et al., 1990); the effect of the number of siblings on vocabulary (Yıldırım Doğru et al., 2010) were found. Günay (2020) reached 70 teachers in his study to determine the awareness of preschool teachers about speech and language disorders in preschool children. According to the evaluations of the teachers, the prevalence rate of speech and language disorders was 8.66%; speech sound disorder is the most common disorder observed in children; speech and language disorders are more common in males; It was concluded that stuttering is more common in males, the disorders are most common in the 4-year-old group and the lowest in the 6-year-old group. Umec et al., (2008), in their study examining the effect of preschool education on children's school maturity, concluded that children's intellectual abilities and language proficiency are important predictors of school maturity levels and that the education level of parents is a determinant in the child's

language development. The results of the same research revealed that children's intellectual skills and language proficiency are effective in school maturity scores. Some studies show that children with reading difficulties experience speech and language problems (Bishop & Adams, 1990; Bowers & Wolf, 1993; Scarborough, 1990). Children with a rich vocabulary learn to read and write more easily (Güneş, 2013). There are also studies on monolingual and bilingual children regarding language development in the preschool period. In their study, Yazıcı and Temel (2012) concluded that bilingual children scored lower than monolingual children in all score types of the school maturity test and that there was a positive correlation between language development and school maturity. In his study, in which he evaluated the relationship between language development and various demographic factors in monolingual and bilingual children, Küçük (2016) concluded that there is a strong correlation between the children's Metropolitan School Maturity test scores and TIFALDI test scores.

Adaptation to school is a concept that is related to social skills, communication, and emotion regulation skills as well as academic success. The main function of pre-school institutions is to prepare students for higher education, namely primary schools. When starting elementary school, students need to be ready for literacy, math, and many other aspects. The results of this study will contribute to the preparation of students who will transfer from pre-school to primary school more readily for the transition process. It will help to ensure that the interventions are correct and serve the purpose. Language development is one of the most important areas of development related to school maturity and adaptation to school, as it constitutes a large part of cognitive development and is a tool for communication and social adaptation. When the studies examining school maturity and school adjustment are examined, there are studies on the effects of many factors such as having preschool education, gender, age, socio-economic status, and parental education status on school maturity and school adjustment. Among these studies, it is seen that there are few studies directly related to language development and school maturity. The preschool period is critical in terms of school maturity, as it is the first place where pre-reading and writing skills and school adaptation behaviors are experienced. Preschool teachers, on the other hand, have the opportunity to closely observe children during this period. This study aimed to examine the relationship between the school maturity levels of the students attending preschool education and the language development characteristics based on the opinions of their preschool teachers. For this purpose, answers are sought for the following three questions:

(Q1) Is there a significant relationship between speech and language development and school maturity levels of students attending preschool education?

(Q2) Do the speech and language development and school maturity levels of students attending preschool education differ according to age?

(Q3) Do the speech and language development and school maturity levels of students attending preschool education differ according to gender?

METHOD

Research Model

In this study, the correlational survey model was used to examine the relationship between school maturity levels and language development characteristics of students attending preschool education. Correlational survey models aim to determine the existence and degree of the relationship between two or more variables (Karasar, 2009). The variables of this research are the school maturity level, language, and speech development level, age, and gender of the participants. In the correlational survey model, the level of relationship between two or more variables is measured using statistical tests. The correlation coefficient is used to determine the level of the relationship. The correlation coefficient reveals whether two or more variables show a consistent and significant change together.

Participants

The study group of the research consisted of 102 students, 44 boys and 58 girls, aged between 60 months and 72 months, attending preschool education in schools affiliated with the Ministry of National Education in the 2022-2023 academic year in the Meram district of Konya and 6 preschool teachers responsible for the education of these students. Participants were determined by easily accessible sampling from the groups studying in the two mentioned schools. Attention was paid to the similar distribution of classes in terms of gender in both groups. Educator participants were determined from teachers working with participating students through purposive sampling. The demographic information of the student and teacher participants is given in Table 1 and 2 respectively:

Table 1

Demographic Information of the Participant Student

Student		
	n	%
Age		
5	38	37,26
6	64	62,74
Gender	n	%
Girl	58	56,86
Boy	44	43,13

Participants are in 2 groups: students and teachers. The data obtained from the students were interpreted as quantitative data with the statistical method, and the qualitative data obtained from the teachers were used as a validation tool in the interpretation of the quantitative data.

Table 2

Demographic Information of the Participant Teachers

Teacher		n	%
Age	40-49	4	66,6
	50-59	2	33,3
Degree Level	undergraduate	6	100
Experience	11 years and above	6	100

Data Collection Tools

Since there were no more than 20 questions in each of the subtests applied when choosing the sample group formed by the students, reaching 5 times the number of questions was considered sufficient in line with similar studies. The Speech and Language Development Questionnaire developed by Günay (2020) was used to determine the students' speech and language development characteristics. The questionnaire was prepared for teachers to fill out and consists of two parts. The first part consists of demographic information and the second part consists of 16 items for the evaluation of students' age, gender, language, and speech development. The Metropolitan School Maturity Test was used to determine the school maturity levels of the students. Metropolitan School Maturity Test was developed in 1949 by G.H. Hildreth, N. L. Griffiths, and M. Mc Gauvran. It was adapted into Turkish by Oktay (1980). It consists of reading preparation, number preparation, and general preparation sub-dimensions. There are 6 subtests and 100 items in the test. The reading preparation sub-dimension (0-66 points) consists of 66 items: word comprehension (19), sentences (14), general knowledge (14), and matching (19); the number preparation sub-dimension (0-24 points) consists of 34 items, including numbers (24) and copying (10). The general preparation sub-dimension (0-100 points) refers to the total score obtained from all subtests

Data Analysis

The data collection phase was carried out in May 2023 with the participants who volunteered for the study. The Metropolitan School Maturity Test was administered to 102 children participating in the study, with the permission of their parents, by the second researcher, who was a psychological and guidance counselor. At the same time, 6 preschool

teachers, who carried out the education of the participating children, were provided to fill out the questionnaires.

The data obtained from the research were analyzed with the SPSS 25 program. Pearson Correlation Analysis was used to determine the relationship between students' speech and language development and their levels of general preparation, number preparation, and reading maturity, which are sub-dimensions of school maturity. The level of differentiation between the speech and language development of the students and the sub-dimensions of school maturity according to gender and age was determined by the t-test.

Ethical considerations (Subtitle is left justified, only the first letter of the title is capital, bold, color will not be changed, 8pt before the title, then 8pt space will be left) Italic

Ethical considerations should be explained in this section. (Examples: Quantative data was collected electronically and the lack of demographic information collection allowed for anonymity. For the qualitative phase, the interview participants were informed in writing of the study's nature and that there were was no ramification if they decided to opt-out at any time. The interview instrument and consent information were hosted on the researchers' personel computer and safeguarded by a password. Study's participation resulted in minimal risks to respondents.)

In this study, all rules stated to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were followed. None of the actions stated under the title "Actions Against Scientific Research and Publication Ethics", which is the second part of the directive, were not taken.

Ethical review board name: Necmettin Erbakan University Chairmanship of the Social and Humanities Scientific Research Ethics Committee

Date of ethics review decision: 12.04.2023

Ethics assessment document issue number: 5

FINDINGS

In this section, the findings obtained as a result of the statistical analyzes carried out to find answers to the research problems and to test the research hypothesis are given. The correlation analysis results regarding the relationship between school maturity level and speech and language development are given in Table 2.

Table 2*Relationship between School Maturity Level and Speech and Language Development*

	Speech and language dev.	General Maturity	Number maturity	Reading maturity
Speech and language dev.	1	,344**	,392**	,220*
General maturity		1	,786**	,932**
Number maturity			1	,600**
Reading maturity				1

When Table 2 is examined, there is a moderately significant positive correlation between the speech and language development questionnaire scores and the general preparation sub-dimension of the Metropolitan School Maturity test ($r=.344$, $p<.01$); there is a positive and moderately significant relationship between speech and language development scores and number preparation scores ($r=.392$, $p<.01$); On the other hand, it is seen that there is a positive and low-level significant relationship between speech and language development scores and reading maturity scores ($r=.220$, $p<.05$).

The t-test results regarding the differentiation of school maturity level and speech and language development levels according to age are given in Table 3.

Table 3*Statistics on the Differentiation of School Maturity Level and Speech and Language Development Level according to Age*

	Age	n	\bar{x}	s.s	t	p	d
Speech and lang. Dev.	5	37	12,92	1,963	-	0,095	-
	6	64	13,48	1,391	1,687		
General Maturity	5	37	64,70	14,890	-	<u>0,001</u>	0.659
	6	64	73,63	12,046	3,285		
	5	37	15,11	4,427		<u>0,003</u>	0.612

Number Maturity	6	64	17,56	3,527	-		
						3,064	
Reading Maturity	5	37	42,22	11,048	-		
	6	64	46,95	8,121	2,468	<u>0,015</u>	0.488

When Table 3 was examined, it was found that the difference between the averages was not significant according to the results of the independent sample t-test conducted to determine whether the speech and language development levels of the students differ according to age ($t=-1.687$, $p>.05$). According to the results of the independent sample t-test on whether there is a difference in the general preparation sub-dimension of school maturity according to age, the difference between the means was found to be significant and had a moderate effect size (0.659) ($t=-3.285$, $p<.01$). The mean general preparation score of the 6-year-old students ($\bar{x}=73.63$) is statistically significantly higher than the 5-year-old students' mean score ($\bar{x}=64.70$). According to the results of the independent sample t-test performed to determine whether there is differentiation according to age in the number preparation sub-dimension, the difference between the means was found to be significant and it had a moderate effect size (0.612) ($t=-3.064$, $p<.05$). The mean score of the 6-year-old students' number preparation score ($\bar{x}=17.56$) is statistically significantly higher than the 5-year-old students' mean score ($\bar{x}=15.11$). According to the independent sample t-test results regarding whether there is differentiation according to age in the reading preparation sub-dimension, the difference between the means was found to be significant and it had a moderate effect size (0.488) ($t=2,468$, $p<.05$). The reading preparation score average of the 6-year-old students ($\bar{x}=46.95$) is statistically significantly higher than the 5-year-old students' average score ($\bar{x}=42.22$).

The t-test results regarding the differentiation of school maturity level and speech and language development levels according to gender are given in Table 4.

Table 4

Statistics on the Differentiation of School Maturity Level and Speech and Language Development Level by Gender

	Gender	n	\bar{x}	s.s	t	p	d
Speech and lang. Dev.	Boy	44	12,89	2,202	-		
	Girl	58	13,55	0,940	2,069	<u>0,041</u>	0.390
General Maturity	Boy	44	71,02	13,253			
	Girl	58	69,86	14,144	0,422	0,674	-

Number Maturity	Boy	44	17,11	3,743	1,061	0,291	-
	Girl	58	16,26	4,237			
Reading Maturity	Boy	44	45,89	9,362	0,602	0,548	-
	Girl	58	44,74	9,622			

When Table 4 is examined, it was found that the difference between the averages was significant according to the results of the independent sample t-test conducted to determine whether the speech and language development levels of the students differ according to gender ($t=-2.069$, $p<.05$). The mean score of speech and language development of female students ($\bar{x}=13.55$) is statistically significantly higher than the average score of male students ($\bar{x}=12.89$). The significance effect size value (0.390) according to language-speech development levels shows a moderate effect. According to the results of the independent sample t-test on whether there is a gender difference in the general preparation sub-dimension of school maturity, the difference between the means was not significant ($t=0.422$, $p>.05$). According to the results of the independent sample t-test conducted to determine whether there is a difference according to gender in the number preparation sub-dimension of school maturity, it was seen that the difference between the averages was not significant ($t=1.061,422$, $p>.05$). According to the results of the independent sample t-test conducted to determine whether there is a gender difference in the reading preparation sub-dimension of school maturity, it was seen that the difference between the averages was not significant ($t=0.602$, $p>.05$).

DISCUSSION

In this study, which aimed to examine the relationship between the school maturity levels of preschool students and their speech and language disorders, it was seen that there was a moderately significant positive correlation between the students' speech and language disorders questionnaire scores and the general maturity and number preparation sub-dimensions of the Metropolitan School Maturity test. Accordingly, as the speech and language disorders level of the participants increases, as the speech and language disorders levels decrease, the general preparation and number preparation levels decrease. The general preparation sub-dimension of the Metropolitan School Maturity Test consists of the sum of the scores obtained from all areas of the test (word comprehension, sentences, general knowledge, matching, numbers, and copying) and reflects the level of school maturity in the most general sense. The number preparation sub-dimension refers to the score obtained from the numbers test. When the findings of the study are examined, according to the speech and language disorders questionnaire of children whose general preparation and number preparation scores are below average and weak, it was observed that they showed features such as repetition, stuttering and blinking, using other sounds instead of some sounds, repeating and prolonging sounds, difficulties in understanding

speech by friends, inability to follow simple instructions, and the difference in the tone of voice while speaking. When the studies in the literature are examined, it is seen that the findings of the research show similarities with the literature. Küçük (2016) examined 190 children who grew up in monolingual or bilingual families in his study to examine individual and familial factors related to school maturity and language development in children at school age. According to the results of the study, it was observed that there was a strong correlation between Metropolitan general maturity, number maturity, and reading maturity scores and TIFALDI Receptive Language Test and Expressive Language Test. In another study, it was concluded that children's intellectual skills and language proficiency are effective on school maturity levels (Marjanovic et al., 2008). Dennis et al. (2021), reported a positive relationship between the receptive language level of preschool children and the cognitive and mathematics sub-dimensions of school maturity. They concluded that the lack of receptive language is a risk factor in the emotional and social dimensions of school maturity. In the study of Güzel and Özyurt (2018), in which they evaluated school maturity according to teachers' opinions, teachers mentioned the skills of children with school maturity to express themselves easily and to communicate well with their friends and environment. Similarly, in another study, it was revealed that school maturity is also related to communication skills, including other developmental areas (Senemoğlu, 2011).

Another finding of the study is that there is a positive and low-level significant relationship between speech and language disorders scores and reading maturity scores. The development of reading begins with processes such as making connections between spoken sounds and written sounds (Gough and Hillinger, 1980), decoding the sounds heard, and combining linguistic clues with content (Shmidman & Ehri, 2010). From this point of view, it can be thought that there is a relationship between reading maturity, which is one of the sub-dimensions of school maturity, and language development. In a study, it was seen that reading skill was related to variables such as verbal expression, phonetics, sound-letter relationship, vocabulary, comprehension, thinking skills, and memory (Güneş, 2013). According to Oktay (2013), one of the factors affecting school maturity is cognitive development and language development related to it. The vocabulary of the child, the ability to form sentences, and the quality of the words he uses are important. When examined in terms of these factors, one of the dimensions of preparation for primary school is that the child has language development and vocabulary at a level that will enable him to express himself and understand what is said. Language development is a part of cognitive development and one of the determining factors of the learning process (Cummins, 1984). Cognitive development is an area of development in which many other factors such as attention, abstract thinking, problem-solving, memory, and intelligence level are also determinative. According to the results of this study, the low level of correlation between reading preparation and language development may be due to the fact that children with language development deficiencies make up for this gap in their proficiency in other areas of cognitive development.

When the findings related to the differences in the level of school maturity and speech and language disorders levels of the participants in the study were examined, it was seen that there was no significant difference in the levels of speech and language disorders according to age. When the literature is examined, Günay (2020) in his study examining the language and speech disorders of four, five, and six-year-old students, concluded that the incidence of language and speech disorders in the four-year-old students is significantly higher than the rate in the six-year-old group. In another study on this subject, it was observed that the incidence of language and speech disorders decreased as age increased (McKinnon et al., 2007). In a study conducted by Gürocak (2007), it was concluded that language development in 60-72-month-old students attending preschool education did not differ according to age and other variables examined. Küçük (2016) evaluated children at the stage of starting school in terms of language development and school maturity. According to this study, it was found that there is a very weak relationship between the ages of children and their receptive and expressive language scores. Dereli and Koçak (2005), in their study in which they examined the expressive language levels of children between the ages of four and six attending preschool in terms of different variables, concluded that age did not make a significant difference in the level of language development.

Studies show that children's behavior problems decrease, and their friendship relations, social skills, and school adjustment increase as they get older (Campbell, 2006; Vandell et al., 2006). In the literature, there are different findings regarding the relationship between age and school maturity. In a study examining the effect of school maturity levels of first-year students on their learning to read and write, it was seen that there was no significant difference between the school maturity levels of students in the 60-66 months, 66-72 months, and 72-80 months age groups (Arı and Özcan, 2014). In another study examining the school maturity of children at school age, it was concluded that there is a very weak relationship between age, number maturity, and general maturity (Küçük, 2016). In his study, Esaspehlivan (2006) concluded that there is a significant difference between the school maturity levels of the students aged 78 and 68 months in favor of the older children. Similarly, in a study in which the school maturity levels of 5, 5.5, and 6 age group students were determined, it was found that there was a significant difference in favor of 6 age group students (Unutkan, 2003). In their study, Güzel and Özyurt (2018) found that there is a significant difference according to age in all sub-dimensions of the school maturity test in preschool students. In our study, students' school maturity levels differ significantly in all sub-dimensions according to age. Accordingly, the school maturity levels of the six-year-old participants are significantly higher than the five-year-old participants. The findings of this study support studies showing a relationship between age and school maturity level. Since school maturity is a broad concept that is not related to age alone, the effect of the age factor may vary in studies. Based on the principle of individual differences in development, the fact that children of the same age are at different levels in different developmental areas may affect the results of the research.

102 pre-school students and 6 teachers participated in this research. The relationship between school maturity and language and speech development and school maturity and language and speech development were examined in terms of age and gender. In the study, it was observed that the speech and language disorders levels of the students differed significantly according to gender. The average score of speech and language disorders of female students is significantly higher than the average of male students. The results of the research are compatible with the results of the research showing the relationship between language development and gender in the literature. In the study of Günay (2020) in which he examined the language and speech disorders of preschool students, it was seen that 30% of the students with speech and language disorders were girls and 70% were boys, according to the evaluation of the teachers. According to this, the rate of language and speech disorders in female students is 5.81% and 10.91% in male students. Similarly, Şahlı and Belgin (2017), in a study they conducted, found that 31% of students with general language and speech disorders were girls and 68% were boys. In a survey conducted on 12,388 children in Australia in 1995, the rate of speech sound disorder was calculated as 2.4% in boys and 0.9% in girls (Keating et al., 2001). It is known that stuttering is more common in men (Borsel et al., 2006; Ella et al., 2015). There are also studies showing that there is no significant relationship between gender and language development. Although the general understanding is that girls develop language faster than boys, some studies do not support this view (Stowe et al., 1999; Gürocak, 2007; Küçük, 2016; Elter, 2021). In these studies, it was seen that there was no significant relationship between language development and gender. In the studies examining gender and language development, the studies in which a significant relationship is revealed are mostly researches on the existence and frequency of language and speech disorders; It is seen that the studies that reveal that there is no significant relationship are those that investigate the level of language development. From this point of view, the presence of language and speech disorders differs according to gender; Since the level of language development is a broader concept, it can be said that it does not differ according to gender and is affected by other factors.

In the study, it was observed that there was no significant difference in the scores of students in all sub-dimensions of school maturity according to gender. Güzel and Özyurt (2018), in their study in which they investigated the school maturity levels of preschool children, concluded that reading maturity did not differ significantly according to gender, while numerical maturity and general maturity scores differed significantly in favor of girls. In his study, Çıkrıkçı (1999) examined the relationship between school maturity and family attitudes in 150 children attending kindergarten and concluded that there was no significant gender difference in the results of the study on the relationship between school maturity and gender. Arıkök (2001) examined 94 children in his study and concluded that the reading maturity levels of children did not differ according to gender. Similarly, Arı and Özcan (2014) found that there was no significant relationship between school maturity and gender in their study examining the school maturity levels of first-grade students. The effect of

gender on school maturity can also be affected by cultural and environmental factors (Oktay, 2000). Some studies show the opposite effect on the effect of gender. According to these studies, men have more language disorders, reading and spelling difficulties, verbal language problems, and attention deficit problems and accordingly show lower school maturity (Soderman et al., 2003); There are findings that there is no significant gender difference in school maturity levels in children with different socioeconomic levels (Gonca, 2004).

LIMITATIONS AND RECOMONDATIONS

In this study, 102 students aged 5 and 6 attending preschool education in two preschool institutions during the 2022-2023 academic year were chosen as participants. The relationship between school maturity and speech and language disorders was examined according to age and gender variables.

Future research can employ different and larger sample groups. Moreover, the association between school maturity and language development can be explored in light of various factors, such as socio-economic status, family attitudes, parental education level, number of siblings, birth order, intelligence level, disability status, and school type.

In this study, the language and speech proficiency of the students were assessed based on the teachers' observations. The findings indicate that the students' level of school maturity significantly increases with age. Thus, the possibility of children starting primary school at an older age should be considered.

Further studies can be conducted to determine the same variables using different scales for speech and language disorders and then make comparisons. Additionally, the faster development of girls until puberty, personality traits, and the influence of psychological and environmental factors should not be overlooked. From this perspective, it is essential to address the speech and language disorders in males.

CONCLUSION

The research findings highlight the impact of speech and language disorders on both the general preparation and number preparation sub-dimensions of school maturity. Given that language development commences the moment a child starts to hear, nurturing this development in early childhood is crucial for enhancing school maturity levels. The rapid brain development and high neuroplasticity during early childhood signify a critical period for supporting language development. Acquiring language skills becomes extremely challenging beyond this crucial phase.

It is imperative to address speech disorders and language development issues that emerge during this period as early as possible, and families should be cognizant of this fact. Parents and primary caregivers in early childhood are instrumental in fostering language development. The depth and frequency of parents' interactions with their children play a

pivotal role in shaping the child's language development. Therefore, initiatives aimed at bolstering family support and heightening awareness about children's early language development processes are essential.

Another observation from this study is the gender disparity in language and speech levels, favoring girls. Societal norms might set distinct expectations for male and female roles. For instance, encouraging boys to engage in more physical activities, while directing girls towards games that prioritize verbal interactions over physical exertion, is a common practice.

REFERENCES

- Afacan, E., & Avcı, N. (2020). A sociological overview of outstanding diseases through the coronavirus example (COVID-19). *Eurasian Journal of Researches in Social and Economics (EJRSE)*, 7(5), 1-14. <https://dergipark.org.tr/tr/download/article-file/1128143>
- Arı, A., & Özcan, E. (2014). Birinci sınıf öğrencilerinin okul olgunluğu düzeylerinin, okuma yazmayı öğrenmelerine etkisi. [The effect of school maturity levels of first grade students on their learning to read and write.] *Dumlupınar University Journal of Social Sciences*, 47, 74- 90. <https://dergipark.org.tr/tr/pub/dpusbe/issue/26801/286319>
- Arıkök, İ. (2001). *Beş-altı yaş çocuklarında görsel algı eğitiminin okuma olgunluğuna olan etkisinin incelenmesi* [Examination of the effect of visual perception training on reading maturity in five-six-year-old children.] (Master's Thesis, Gazi University, Institute of Social Sciences) YÖK Thesis Center. <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Balat Uyanık, G. (2003). *Altı yaş grubu korunmaya muhtaç ve ailesinin yanında kalan çocukların okula hazır bulunuşluk ile ilgili temel kavram bilgilerinin karşılaştırılması*. [Six age group children in need of protection and children who stay with their families: Comparison of basic concept knowledge about school readiness] (Doctoral dissertation, Hacettepe University Institute of Health Sciences). YÖK Thesis Center. <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Bishop, D.V., & Adams, C. (1990). A prospective study of the relationship between specific language impairment, phonological disorders, and reading retardation. *Journal of Child Psychology and Psychiatry*, 31(7), 1027-1050. <http://doi.org/10.1111/j.1469-7610.1990.tb00844.x>
- Borsel, J., Moeyaert, E., Rosseel, M., van Loo, E., & van Renterghem, L. (2006). Prevalence of stuttering in regular and special school population in belgium based on teacher perception. *Folia Phoniatica et Logopaedica*, (58), 289-302. <http://doi.org/10.1159/000093185>
- Boz, M. (2004). *Altı yaş çocuklarının okula hazır bulunuşluk düzeylerinin veli ve öğretmen görüşleri yönünden incelenmesi*. [Investigation of six-year-old children's school readiness levels in terms of parents' and teachers' views] (Master's thesis, Hacettepe University Institute of Health Sciences). YÖK Thesis Center. <https://tez.yok.gov.tr/UlusalTezMerkezi/>

- Bowers, G., & Wolf, M. (1993). Theoretical links among naming speed, precise timing mechanisms, and orthographic skill in dyslexia. *Reading and Writing*, 5(1), 69– 85. <https://doi.org/10.1007/BF01026919>
- Campbell, S.B. (2006). Maladjustment in preschool children: A developmental psychopathology perspective. In McCartney, K., & Philips, D. (Eds.), *Blackwell handbook of early childhood development*, (pp. 358- 377). Blackwell.
- Christensen, D., Taylor, C. L., Hancock, K. J., & Zubrick, S. R. (2022). School maturity is more than the child: a latent class analysis of child, family, school and community aspects of school maturity. *Australian Journal of Social Issues (John Wiley & Sons, Inc.)*, 57(1), 125–143. <https://doi.org/10.1002/ajs4.138>
- Cirhinlioğlu, F. G. (2001). *Çocuk ruh sağlığı ve gelişimi*. [Child mental health and development.] Nobel Publication Distribution.
- Cummins J. (1984). Wanted: A theoretical framework for relating language proficiency to academic achievement among bilingual students. *Language proficiency and academic achievement*, 10, 2-19.
- Çıkrıkçı S. (1999). *Ankara il merkezinde resmi banka anaokullarına devam eden 5-6 yaş çocuklarının okul olgunluğu ile aile tutumu arasındaki ilişkinin incelenmesi*. [An investigation of the relationship between school maturity of 5-6 year old children attending official bank kindergartens in Ankara province centre and family attitude] (Master's Thesis, Gazi University, Institute of Social Sciences) YÖK Thesis Center. <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Dennis, M., Krasner, A., Shoulberg, E. K., Hoza, B., Scott, H., & Martin, C. P. (2021). Language problems and ADHD behaviors: Unique and interactive associations with school maturity in a socioeconomically disadvantaged preschool sample. *Child Psychiatry & Human Development*, 1-12. <http://doi.org/10.1007/s10578-021-01272-w>
- Dereli, E. & Koçak, N. (2005). Okul öncesi eğitime devam eden 4-6 yaş arasındaki çocukların ifade edicidil düzeylerinin bakım tarzı ve anne- baba eğitim düzeyi açısından incelenmesi Konya ili örneği. [Investigation of expressive language levels of 4–6-year-old children attending preschool education in terms of care style and parental education level, the case of Konya province.] *Journal of Selçuk University Institute of Social Sciences*, (14), 245-253. Retrieved from <https://dergipark.org.tr/en/pub/susbed/issue/61791/924061>
- Ella, M.A., Saleh, M., Habil, I., Sawy, M.E., & Assal, L. M. (2015). Prevalence of stuttering in primary school children in Cairo-Egypt. *International Journal of Speech- Language Pathology*, 17(4), 367-372. <http://doi.org/10.3109/17549507.2015.1010583>
- Elter, Ç. (2021). *Okul öncesi dönemindeki 60-72 aylık çocukların okul olgunluğu ile fiziksel ve duygusal gelişimi arasındaki ilişkinin incelenmesi*. [Investigation of the relationship between school maturity and physical and emotional development of 60-72 months old preschool

- children] (Master's thesis, Istanbul Gelisim University Graduate School of Education). YÖK Thesis Center. <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Esaspehlivan, M. (2006). *Okul öncesi eğitim kurumlarına gitmiş ve gitmemiş 78 ve 68 aylık çocukların okula hazır bulunuşluklarının karşılaştırılması*. [Comparison of school readiness of 78 and 68 month old children who attended and did not attend pre-school education institutions] (Master's Thesis, Marmara University Institute of Educational Sciences). YÖK Thesis Center. <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Gill, S. Winters D., & Friedman, D. S. (2006) Educators' views of pre-kindergarten and kindergarten maturity and transition practices. *Contemporary Issues in Early Childhood*, 7(3), 213 – 227. <https://doi.org/10.2304/ciec.2006.7.3>
- Gonca, H. (2004). *Ankara il merkezinde farklı sosyoekonomik ve kültürel ortamlarda yetişen ve ilköğretim okuluna yeni başlayan çocukların okul olgunluğunun incelenmesi*. [Investigation of school maturity of children who grew up in different socioeconomic and cultural environments in Ankara provincial centre and who just started primary school] (Master's thesis, Hacettepe University Institute of Health Sciences). YÖK Thesis Center. <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Gough, P.B. & Hillinger, ML (1980). Okumayı öğrenmek: Doğal olmayan bir hareket. [Learning to read: An unnatural act.]. *Orton Society Bulletin*, 30, 179–196. <http://www.jstor.org/stable/23769975>
- Guedes, C., Ferreira, T., Leal, T., & Cadima, J. (2023). Unique and joint contributions of behavioral and emotional self-regulation to school maturity. *Applied Developmental Science*, 27(2), 136–155. <https://doi.org/10.1080/10888691.2022.2045200>
- Günay, Z. Ş. (2020). *Okul öncesi çocuklardaki dil ve konuşma bozuklukları hakkında okul öncesi öğretmenlerin farkındalığının belirlenmesi: (Ordu ili örnekleme)*. [Determining the awareness of preschool teachers about speech and language disorders in preschool children: (Ordu province sample)] (Master's thesis, Anadolu University-Institute of Social Sciences). YÖK Thesis Center. <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Gürocak, S. (2007). *Anasınıfına devam eden 60-72 ay çocuklarının dil gelişimi ve ince motor gelişimi açısından değerlendirilmesi*. [Evaluation of 60-72 month old children attending kindergarten in terms of language development and fine motor development] (Master's thesis, Abant İzzet Baysal University Institute of Educational Sciences). YÖK Thesis Center. <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Güneş, F. (2013). Okuma yazma öğrenme yaşı. [Age of learning to read and write.] *Journal of Theory and Practice in Education*, 9(4), 280-298. <https://dergipark.org.tr/tr/pub/eku/issue/5458/74014>
- Güzel, N. & Özyurt, M. (2018). Okul öncesi eğitimi alan çocukların okul olgunluğu düzeylerinin ve okul olgunluğuna ilişkin öğretmen görüşlerinin incelenmesi. [Investigation of school

- readiness levels of preschool children and teachers' views on school readiness.] *Mersin University Journal of Faculty of Education*, 14(3), 1250-1267. doi: 10.17860/mersinefd.441260
- Harman, G., & Çelikler, D. (2012). Eğitimde hazır bulunuşluğun önemi üzerine bir derleme çalışması. [A review on the importance of readiness in education.] *Journal of Education and Training Research*, 1 (3), 147-156. <http://www.jret.org/FileUpload/ks281142/File/16z.harman.pdf>
- Józsa, K., Amukune, S., Zentai, G., & Barrett, KC (2022). Ortaokul başarısının yordayıcıları olarak okul öncesinde okula hazırlık testi ve zeka: Sekiz yıllık boylamsal bir çalışmanın sonucu. [Preschool school readiness test and intelligence as predictors of secondary school achievement: Results of an eight-year longitudinal study.] *Journal of Intelligence*, 10 (3), N.PAG. <https://doi.org/10.3390/jintelligence10030066>
- Karasar, N. (2009). *Bilimsel araştırma yöntemi*. [Scientific research method.] Nobel Publication Distribution.
- Keating, D., Turell, G., & Ozanne A. (2001). Children speech disorders: Reported prevalence comorbidity and socioeconomic profile. *Journal of Pediatrics Child Health*, 37(5), 431-436. <https://doi.org/10.1046/j.1440-1754.2001.00697.x>
- Küçük, Ö. (2016). *Okula başlama aşamasındaki çocuklarda okul olgunluğu ve dil gelişimi ile ilişkili bireysel ve ailesel etkenlerin araştırılması*. [Investigation of individual and familial factors related to school maturity and language development in children at the beginning of school] (Expertise thesis, Dokuz Eylül University). YÖK Thesis Center. <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Marjanovic Umek, L., Fekonja, U., Fekonja, U., & Fekonja, U. (2008). The effect of preschool on children's school maturity. *Early Child Development and Care*, 178(6), 569-588.
- McKinnon, D., McLeod, S., & Reilly, S. (2007). The prevalence of stuttering, voice, and speech-sound disorders in primary school students in Australia. *Language, Speech, and Hearing Services in Schools*, 38, 5-15. [https://doi.org/10.1044/0161-1461\(2007\)002](https://doi.org/10.1044/0161-1461(2007)002)
- Oktay, A. (1980). Metropolitan maturity testinin İstanbul'da farklı sosyo-ekonomik ve kültürel çevrelerdeki (5-6) yaş çocuklarına uygulanması. [The application of the metropolitan maturity test to (5-6) year old children from different socio-economic and cultural backgrounds in Istanbul.] *Journal of Pedagogy*, 1, 119-138.
- Oktay, A. (2013). *İlköğretime hazırlık ve ilköğretim programları* (2. Basım). [Preparation for primary education and primary education programmes (2nd Edition).] Pegem Academy Publishing House.
- Razon, N., (1982). Okuma güçlükleri. [Reading difficulties.] *Education and Science*, 39, 11-18. <http://egitimvebilim.ted.org.tr/index.php/EB/article/view/5721>

- Rhode Island KIDS COUNT. (2005). *Getting ready: Findings from the national school maturity indicators initiative a 17 state partnership*. The David and Lucile Packard Foundation, The Kaufmann Foundation and The Ford Foundation.
- Senemoğlu, N. (2011). *Gelişim, öğrenme ve öğretim kuramdan uygulamaya*. [Development, learning and teaching from theory to practice.] Pegem Academy
- Scarborough, H.S. (1990). Very early language deficits in dyslexic children. *Child Development*, 61(6), 1728-1743. <https://doi.org/10.2307/1130834>
- Sharp, H.M., & Hillenbrand, K. (2006). Speech and language development and disorders in children. *Pediatric Clinics of North America*, 61(3), 1159 – 1173. <https://doi.org/10.1016/j.pcl.2008.07.007>
- Shmidman, A., & Ehri, L. (2010). Embedded picture mnemonics to learn letters. *Scientific studies of reading*, 14(2), 159-182. <https://doi.org/10.1080/10888430903117492>
- Soderman, A., & Gregory, M. M. L. (2003). *Scaffolding emergent literacy*. Pearson
- Sosu, E. M., & Pimenta, S. M. (2023). Early childhood education attendance and school maturity in low- and middle-income countries: The moderating role of family socioeconomic status. *Early Childhood Research Quarterly*, 63, 410–423. <https://doi.org/10.1016/j.ecresq.2023.01.005>
- Stowe, R.M., Arnold, D.H., & Ortiz, C. (1999). Gender differences in the relationship of language development to disruptive behavior and peer relationships in preschoolers. *Journal of Applied Developmental Psychology*, 20(4), 521-536. [https://doi.org/10.1016/S0193-3973\(99\)00024-6](https://doi.org/10.1016/S0193-3973(99)00024-6)
- Şahlı, A.S., & Belgin, E. (2017). Adaptation, validity, and reliability of the Preschool Language Scale-Fifth Edition (PLS-5) in the Turkish context: the Turkish Preschool Language Scale-5 (TPLS-5). *International Journal of Pediatric Otorhinolaryngology*, 85(2), 143-9. <https://doi.org/10.1016/j.ijporl.2017.05.003>
- Şimşek, Ö. (2007). *Anasınıfına devam eden çocukların okuma olgunluğu düzeyine Türkçe dil etkinlik programının etkisinin incelenmesi*. [The effect of Turkish language activity programme on reading maturity level of children attending kindergarten] (Master's Thesis, Gazi University). YÖK Thesis Center. <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Umec, L. M., Kranjc, S., Fekonja, U., & Bajc, K. (2008). The effect of preschool on children's school maturity. *Early Child Development and Care*, 178(6), 569- 588.
- Unutkan, Ö. P. (2003). *Marmara ilköğretime hazır oluş ölçeğinin geliştirilmesi ve standardizasyonu*. [Development and standardisation of Marmara elementary school readiness scale] (Doctoral dissertation, Marmara University Institute of Educational Sciences). YÖK Thesis Center. <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Yavuzer, H. (2000). *Eğitim ve gelişim özellikleriyle okul çağı çocuğu*. (5. bs.). [Education and developmental characteristics of the school-age child (5th bs.).] Remzi Kitapevi.

- Yavuzer, H. (2010). *Ana-baba ve çocuk*. [Parent and child.] Remzi Kitapevi.
- YAZICI, Z., & Temel, Z.F. (2012). İki dilli ve tek dilli çocuklarda dil gelişimi okuma olgunluğu ilişkisi. [The relationship between language development and reading maturity in bilingual and monolingual children]. *Journal of Mehmet Akif Ersoy University Faculty of Education*, 1(22), 145-158. <https://dergipark.org.tr/tr/pub/maeuefd/issue/19395/206009>
- Yıldırım Doğru, S. S., Alabay, E., & Kayılı, G. (2010). Normal gelişim gösteren ve öğrenme güçlüğü olan çocukların sözcük dağarcığı ile dili anlama düzeylerinin belirlenmesi. [Determination of vocabulary and language comprehension levels of children with normal development and children with learning disabilities.] *Elementary Education Online*, 9 (3), 828-840. <https://dergipark.org.tr/tr/pub/ilkonline/issue/8594/106877>
- Yıldırım Doğru, S. S., Bek, H., Konuk Er, R., & Demiray, P. (2010). Engelli ve normal gelişim gösteren okul öncesi çocukların sözcük dağarcığı düzeylerinin belirlenmesi. [Determination of vocabulary levels of disabled and normally developing preschool children.] *Turkish Science Research Foundation Science Journal*, 3(4), 334-341. <https://dergipark.org.tr/en/download/article-file/799638>
- Yıldız Çiçekler, C. (2010). 6-7 yaş çocukların oluşturdukları öykülerde kullandıkları hece, kelime ve cümle sayılarının bazı değişkenler açısından incelenmesi. [Investigation of the number of syllables, words and sentences used by 7-year-old children in the stories they created in terms of some variables.] *Journal of Ahi Evran University Faculty of Education*, 11(3), 23-36. <https://dergipark.org.tr/tr/download/article-file/1492903>
- Vandell, D.L., Nenide, L., & Winkle, S.J.V. (2006). Peer relationships in early childhood. In McCartney, K., & Philips, D. (Eds.), *Blackwell handbook of early childhood development* (pp. 455- 470). Blackwell.
- White, T.G., Graves, M.F., & Slater, W.H. (1990). Growth of reading vocabulary in diverse elementary schools: Decoding and word meaning. *Journal of Educational Psychology*, 82(2), 281-290. <https://doi.org/10.1037/0022-0663.82.2.281>

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Author(s)' statements on ethics and conflict of interest

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